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Environmental Reporting Practices: A Study on Selected Manufacturing Companies in Bangladesh

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Environmental Reporting Practices: A Study on Selected Manufacturing Companies in Bangladesh



Ph.D Dissertation

*A dissertation submitted to the Institute of Bangladesh Studies (IBS),
University of Rajshahi, in partial fulfillment of the requirements for the degree
of Doctor of Philosophy in Accounting and Information Systems*

Researcher

Mohammed Fazlur Rahman Khan
Session: 2012-2013

**Institute of Bangladesh Studies (IBS)
University of Rajshahi, Bangladesh**

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August, 2015

Declaration

I, the undersigned, hereby declare that the dissertation entitled **“Environmental Reporting Practices: A Study on Selected Manufacturing Companies in Bangladesh”** has been prepared by me under the supervision of Prof. **Dr. Abhinaya Chandra Saha**. I myself take all the responsibilities for all comments, statements and opinions articulated in the dissertation. The dissertation has not been submitted, either wholly or partly, to any academic institution or university in pursuing any degree or diploma. All sources of scholarly information used in this thesis were duly acknowledged.

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Certificate of Supervisor

This is to certify that the dissertation entitled “**Environmental Reporting Practices: A Study on Selected Manufacturing Companies in Bangladesh**” is an original work accomplished by **Mohammed Fazlur Rahman Khan**, Ph.D Fellow in Accounting and Information Systems of the session 2012-2013 at the Institute of Bangladesh Studies (IBS), University of Rajshahi, Bangladesh. The findings and views expressed in the dissertation, originated from both primary and secondary data are entirely his contribution. He has prepared this dissertation under my supervision and guidance. As far as I know the dissertation has not been submitted anywhere else for any academic purposes, e.g., any degree or diploma. I have gone through the draft of the dissertation thoroughly and found it satisfactory for submission. The dissertation is, therefore, recommended and forwarded to the University of Rajshahi through the Institute of Bangladesh Studies (IBS) for necessary formalities leading to its acceptance in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Accounting and Information Systems.

(Dr. Abhinaya Chandra Saha)
Professor and Director
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Mohammed Fazlur Rahman Khan

Abstract

Within the last few decades environmental reporting has become a popular field of research and has impressed several numbers of researchers around the world. But, very few studies have been carried out in the context of developing countries, particularly in Bangladesh. So, there exists a dearth of comprehensive research in this field. Therefore, this study aimed at exploring two primary areas of environmental reporting in Bangladesh. Firstly, the study explored the nature and extent of environmental disclosures in the annual reports of the selected Cement, Tannery, Textiles and Pharmaceuticals companies in Bangladesh during 2009-2013 by using content analysis method and a dichotomous procedure known as Kinder Lydenberg Domini (KLD) rating system. In this regard, the International Organizations for Standardization's requirements (ISO 14031) was selected as a benchmark. Then the study explored the perceptions of multiple stakeholder groups regarding the various aspects of the reporting practices through arranging a series of face-to-face interviews (with the help of a structured questionnaire) with 85 respondents of five selected managerial and non-managerial stakeholder groups.

The results revealed that sample companies disclosed very negligible amount of information regarding environmental issues, but quantity of disclosure had been increasing gradually during the period of analysis 2009-2013. The results further showed that sample companies mainly disclosed descriptive information regarding their environmental performance. It is also observed that sample companies preferred to report the positive impacts of their activities on environment rather than the information that reflects discredit to the company. The study concludes that environmental disclosures of the sample companies were largely unregulated and inconsistent.

The findings showed the low level of understanding of stakeholders on the concept of environmental reporting. It is also revealed that most of the selected stakeholders considered environmental reporting as a significant tool for improving environmental accountability of the companies. Besides, survey respondents believed that environmental performance and disclosures of environmental information can influence the corporate relationships with stakeholders. But environmental disclosures of the listed manufacturing companies in Bangladesh were not considered credible to the stakeholders without any external verification. It is also found that about 90% of the survey participants supported the mandatory status of environmental reporting for the listed manufacturing companies in Bangladesh. In addition, the study explored the perceptions of stakeholders regarding the content-category themes for ideal environmental reporting of the listed manufacturing companies in Bangladesh context. Besides, the findings revealed a range of limiting factors of environmental reporting practices in Bangladesh and the possible ways of minimizing the challenges of the reporting practices based on views and comments of respondents. Taking into consideration the findings, this study sketched some recommendations for the consideration of the stakeholders. Moreover, the study concludes by proposing a number of potential avenues for further research.

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List of Abbreviations

ACA	:	Associate Chartered Accountant
ACCA	:	Association of Corporate Chartered Accounts
AICPA	:	American Institute of Certified Public Accountants
APC	:	Air pollution Controller
ASTM	:	American Society for Testing and Material
BAS	:	Bangladesh Accounting Standards
BBS	:	Bangladesh Bureau of Statistics
BFRS	:	Bangladesh Financial Reporting Standards
BSEC	:	Bangladesh Securities and Exchange Commission
BSEHD	:	Bangladesh Society for Environment and Human Development
CA	:	Chartered Accountant
CDP	:	Carbon Disclosure Project
CERES	:	Coalition for Environmentally Responsible Economics
CREP	:	Corporate Responsibility for Environmental Protection
CSE	:	Chittagong Stock Exchange Limited
CSR	:	Corporate Social Responsibility
DoE	:	Department of Environment
DPHE	:	Department of Public Health Engineering
DSE	:	Dhaka Stock Exchange Limited
EA	:	Environmental Accounting
EAR	:	Environmental Accounting and Reporting
EC	:	European Commission
ECC	:	Environmental Clearance Certificate
ECNEC	:	Executive Committee of the National Economic Council
EIA	:	Environmental Impact Assessment
ENI	:	Environmental Item
EPE	:	Environmental Performance Evaluation
EPI	:	Environmental Performance Indicator
ER	:	Environmental Reporting
ETP	:	Effluent Treatment Plant
EU	:	European Union
FASB	:	Financial Accounting Standard Board

FCA	:	Fellow of Chartered Accountants
FCMA	:	Fellow of Cost and Management Accountants
FY	:	Fiscal Year
GDP	:	Gross Domestic Product
GHG	:	Green House Gas
GoB	:	Government of the People's Republic of Bangladesh
GRI	:	Global Reporting Initiative
IASB	:	International Accounting Standard Board
IASC	:	International Accounting Standard Committee
ICAB	:	Institute of Chartered Accountants of Bangladesh
ICMAB	:	Institute of Cost and Management Accountants of Bangladesh
IFRIC	:	International Financial Reporting Interpretations Committee
IFRS	:	International Financial Reporting Standards
IPPC	:	Integrated Pollution Prevention and Control Directive
ISO	:	International Organization for Standardization
KPMG	:	Klynveld Peat Marwick Goerdeler (accounting firm)
MoE	:	Ministry of Environment and Forest
NBR	:	National Board of Revenue
NEMAP	:	National Environmental Management Action Plan
NGO	:	Non Government Organization
OECD	:	Organization for Economic Co-operation and Development
PRTR	:	European Pollutant Release and Transfer Register
SA	:	Social Accounting
SG-1	:	Accounts Executives Group,
SG-2	:	Internal Auditors,
SG-3	:	Professional Accountants (CA/FCA).
SG-4	:	Member of the Regulatory Bodies,
SG-5	:	Environmental Activists.
SPSS	:	Statistical Package for social Science
SQ	:	Survey Question
UN	:	United Nations
UNCTAT	:	United Nations Conference on Trade and Development
UNEP	:	United Nations Environment Programme
UNPRI	:	United Nations Principles for Responsible Investment
UNSD	:	United Nations Statistics Division
USEPA	:	United States Environmental Protection Agency

Chapter One

Introduction

1.1 Background of the Study

Environmental reporting is a process through which companies disclose their environmental performance related information to the stakeholders (Gray, Kouhy & Lavers, 1995a). Environmental reporting has become increasingly relevant to the enterprise and in the development process for ensuring environmental protection (United Nation, 1998). Because, many development activities, specially manufacturing activities gradually increase environmental hazards such as global warming, bio-diversity degradation and pollution of air, water, soil and marine etc (Qureshi, Shresth & Tiwari, 2012).

The last few decades have witnessed a rising awareness of the severity and diversity of environmental problems. Consequently, there is a growing global concern regarding the environmental impact of the organization's activities, such as production process, product performance and business practices etc (Parker, 2005). Accordingly, there is increasing demand from various stakeholder groups for companies to publicly report information regarding their environmental performance in a global scale, and there has been a growth in the voluntary environmental reporting practices of the corporate organizations worldwide (United Nations, 2002). Therefore, within the last few decades environmental reporting has become a popular field of research and has impressed several number of researchers around the world to investigate various aspects of environmental reporting (quantity and quality or content) of developed and developing countries (Yaftian, 2011). But, most of the previous studies that conducted in the field of corporate environmental reporting were focused on developed countries (Choi, 1999). Very few studies have been carried out in the context of developing countries (Belal & Owen, 2004).

In addition, the concept of corporate environmental reporting is relatively new in Bangladesh (Ahmed, 2006). Therefore, there is little attention being given to environmental reporting research in this country (Belal & Owen, 2007). However,

environmental reporting studies in Bangladesh are mainly descriptive in nature and generally determined by the volume of disclosure using secondary data (Imam, 2000). As a result, several scholars (Islam & Deegan, 2008) have called for more direct engagement-based studies in developing countries like Bangladesh by using primary data. Moreover, recent environmental reporting literature emphasizes the importance of exploring the perceptions of both managerial and non-managerial stakeholder groups regarding environmental reporting (O'Dwyer, 2002; Unerman & Bennett, 2004). However, there is a lack of studies that examined the perceptions of non-managerial stakeholders regarding environmental reporting (O'Dwyer, Unerman & Hession, 2005). Some very recent studies concentrate on the perceptions of multiple stakeholder groups (Belal, 2009).

In addressing the gap in the literature, this study aimed at exploring the environmental reporting practices in the listed manufacturing companies in Bangladesh. In doing so, present study explored two primary areas of environmental reporting in Bangladesh. The first primary area of this study was to explore the nature and extent of environmental disclosures in the annual reports of the sample listed manufacturing companies in Bangladesh by using content analysis method. The study then proceeds to address the above gap in the literature through arranging a series of face-to-face interviews with the help of a structured questionnaire with 85 managerial and non-managerial stakeholders whom were selected from five key stakeholder groups (accounts executives, internal auditors, environmental activists, member of the regulatory bodies and external auditors) of the listed manufacturing companies in Bangladesh.

The most important primary motivating factors underpinning this study lies in a desire to explore the perceptions of multiple stakeholder groups regarding the various aspects of environmental reporting, such as significance, regulatory framework and credibility of environmental reporting practices of the listed manufacturing companies in Bangladesh. The study also focused on investigating the understanding level of stakeholders on the concept of environmental reporting as well their expectation regarding the content-category themes of ideal environmental reporting in Bangladesh context.

1.2 Statement of the Problem

Bangladesh is one of the most densely populated countries in the world in which 31.50 percent of the population still live below the poverty line (GoB, 2013). The high population growth rate and poverty levels have led the country to set a development target on employment-intensive industrialization since its independence (Nath, 2009). That is why manufacturing sector of Bangladesh received serious attention even in the First Five Year Plan (1973-1978) of the country to accelerate economic growth, increase investment, earn foreign exchange, create employment and reduce poverty. In addition, with a view to accelerating the pace of industrialization in the country, the Government announced the National Industrial Policy 2010. Moreover, the 'Sixth Five Year Plan (SFYP): 2011-2015' and 'Outline Perspective Plan of Bangladesh (2010-2021): Making Vision 2021 A Reality' have also recognized the importance of manufacturing as vehicle of reducing unemployment, hunger and poverty. Therefore, the manufacturing sector grew at a rate of five percent between 1972 and 1992 (Bhattacharya, Kabir & Ali, 1995). And in FY 2013-2014, the growth in manufacturing sector stood at 8.68 percent. Consequently, the contribution of the manufacturing sector to real GDP was increased at 19.45 percent in FY 2013-14 (BBS, 2014). But, manufacturing activities are blamed for increasing environmental hazards in Bangladesh (Nath, 2009).

Because, as a consequence of rapid and largely unregulated industrial development has resulted in many adverse social, ethical and environmental effects in Bangladesh (Alam, 2009). In addition, toxic discharges from manufacturing industries pollute both surface and ground water sources. Because, most of the corporate manufacturing plants in Bangladesh are situated near the banks of major rivers like the Burigonga, the Sitolokha, the Turag, and the Karnofuli (Belal & Cooper, 2011). Although there is a requirement from the Ministry of Environment and Forest (MoE) that every factory (those having chemical wastage) must have Effluent Treatment Plant (ETP), many factories are disposing their untreated wastage to the rivers (Belal, 2006). The Department of Environment (DoE) has listed 1,176 factories that cause pollution throughout the country (DoE, 2010). Thus, more than 200 rivers of the country directly or indirectly receive a

large quantity of untreated industrial wastes and effluents. As a result, many aquatic ecosystems are now under threat and with them the livelihood systems of local people (Alam, 2009). Similarly, the Bangladesh Society for Environment and Human Development (BSEHD) published a report in 1998 which provided an overview of the key environmental issues in Bangladesh. It showed that treatment of industrial wastes was considered a low priority and that due to the absence of strong preventative measures and lack of awareness, the practice of discharging untreated industrial waste into water bodies was almost universal. Besides, the Department of Environment (DoE) in the early 1990s carried out a survey of industries, principally tanneries. The report revealed that acidic emissions from tannery effluents had the potential to cause serious respiratory disorders to the employees and residents of the area and damage to buildings (Chowdhury, 2011; Shikder, 2009; BSEHD, 2001). Consequently, industrial pollution has become a major environmental concern in Bangladesh (Belal & Roberts, 2010). According to Ahmed (2012) Bangladesh is to pay huge environmental costs for its economic development. But it is not expected to have more corporate profits at the cost of large scale of eco-system. Because the air, water and noise pollution derived from manufacturing activities are threatening human health, ecosystems and overall sustainable economic growth of a country (Enaharu, 2009).

Therefore, it is the demand of time to incorporate environmental responsiveness among the manufacturing organizations in Bangladesh. Because conservation of environment is a commitment of the State as preserve in the Constitution of Bangladesh. According to the Article 18 A of the Constitution of Bangladesh “The State shall endeavour to protect and improve the environment and to preserve and safeguard the natural resources, bio-diversity, wetlands, forests and wild life for the present and future citizens”.

Therefore, Government of Bangladesh (GoB) has enacted very important laws regarding environment, such as the Bangladesh Environment Conservation Act, 1995 (hereafter the Act), and the Environment Conservation Rules, 1997. Under the Act, companies may be asked to disclose environmental information as and when required. Moreover, the legal framework for accounting and reporting requirements of Bangladeshi listed companies is primarily governed by the

Companies Act, 1994, the Securities and Exchange Commission Act 1993, the Income Tax Ordinance-1984 and the Bangladesh Chartered Accountants Order, 1973. All these laws do not prescribe any periodical mandatory environmental disclosure by the companies (Ahmad, 2012).

In addition, there is no mandatory standard or code in prevailing accounting and reporting system that can consider the environment unfriendly activities of the corporate entities (Enahoro, 2009). Avoidance of environmental information in accounting system can create a gap in financial reporting of companies. If vital environmental issues are not disclosed, the financial statements can not be considered as true and fair view of affairs. Thus, the traditional reporting system can not provide the real picture of the organizations' environmental performance, though it is essential for the decision making process of management and other stakeholders (Uwalowma, 2011).

In this regard, reporting on environmental performance of the corporate organizations can play a significant role. Since, the main focus of environmental reporting is to make the firm more transparent and accountable to the stakeholders regarding its environmental performance (Enahoro, 2009). Moreover, corporate environmental reporting is a significant way for organizations to acknowledge their impact on natural system (Belal & Cooper, 2011). It plays vital roles in providing the actual scenario of the company's environmental performance, which is also necessary for taking any controlling measure or developing corporate and national policy to achieve sustainable Industrial development (Ahmed, 2012). Consequently, there has been a growth in the voluntary environmental reporting practices of the corporate organizations worldwide, which leads to scholars' interest in conducting research in this field (Parker, 2005).

But, most of the previous studies on environmental reporting practices of the corporate organizations were conducted in the context of developed countries (Choi, 1999). Very few studies have been carried out in the context of developing countries like Bangladesh (Belal & Cooper, 2011). Previous studies revealed that in case of most of the developing countries, like Bangladesh, corporate environmental

disclosure is still in its embryonic stage (Ullah, Yakub & Hossain, 2013). They further stated that Bangladeshi companies have been adopting environmental reporting practices voluntarily in recent years. In addition, the present status of environmental disclosure in Bangladesh is not satisfactory in terms of quality and quantity (Belal, 2006; Hossain, Islam & Andrew, 2006; Ullah et al., 2013).

However, it is not clear that what are the main limiting factors of environmental reporting in Bangladesh, and what are the perceptions of stakeholders regarding the concept, significance, credibility and adequacy or inadequacy of existing regulatory frameworks of environmental reporting of the listed manufacturing companies in Bangladesh. Besides, the expectations of key stakeholders regarding the content-category themes of ideal environmental reports of the listed companies in Bangladesh have also been unexplored. Though, these are essentially necessary in initiating any significant steps for the establishment of ideal environmental reporting practices in Bangladesh, identification of limiting factors and exploring the possible ways of minimizing the challenges of environmental reporting practices in Bangladesh based on views and comments of respondents are also crucial for establishing expected environmental reporting practices.

No comprehensive study was found that covered this area by focusing on the nature and extent of environmental reporting practices of the listed manufacturing companies and perceptions of stakeholders in Bangladesh context. So, there is ample opportunity to carry out a comprehensive research in this field.

In the light of the problem statement, some relevant questions are pronounced which are as follows:

1. To what extent there are disclosures on environmental performance related information in the Annual Reports of the selected listed manufacturing companies in Bangladesh?
2. What is the nature of environmental disclosures in the Annual Reports of the listed manufacturing companies in Bangladesh?
3. What are the levels of understanding of different stakeholder groups regarding the concept of environmental reporting of listed manufacturing companies in Bangladesh?

4. What are the perceptions of different stakeholder groups regarding the significance of environmental reporting practices of listed manufacturing companies in Bangladesh?
5. To what extent does the disclosure of environmental information influence the corporate relationships with the stakeholders?
6. What are the perceptions of different stakeholder groups regarding the nature and extent of environmental reporting practices of the listed manufacturing companies in Bangladesh?
7. What are the perceptions of different stakeholder groups regarding the motives of the listed manufacturing companies in Bangladesh behind environmental reporting practices?
8. What are the perceptions of different stakeholder groups regarding the credibility of environmental disclosures in the Annual Reports of selected listed manufacturing companies in Bangladesh?
9. What are the perceptions of different stakeholder groups regarding the regulatory frameworks of environmental reporting practices of listed companies in Bangladesh?
10. What are the perceptions of different stakeholder groups regarding the content-category themes of ideal environmental reporting in Bangladesh context?
11. What are the perceptions of different stakeholder groups regarding the limiting factors and opportunities of environmental reporting practices of listed manufacturing companies in Bangladesh?

1.3 Objectives of the Study

The core objectives of the study are to explore the nature and extent of environmental reporting practices of the selected listed manufacturing companies in Bangladesh and investigate the manifold perceptions of the multiple stakeholder groups regarding the reporting practices. The specific objectives of the study are:-

- To explore the nature and extent of environmental disclosures in the Annual Reports of the selected listed manufacturing companies in Bangladesh;

- To investigate the manifold perceptions of multiple stakeholder groups regarding the various aspects of environmental reporting practices of the listed manufacturing companies in Bangladesh;
- To identify the limiting factors of environmental reporting practices of listed manufacturing companies in Bangladesh;
- To explore the possible ways of minimizing the challenges of environmental reporting practices in Bangladesh based on views and comments of respondents.

1.4 Justification of the Study

Environmental Reporting is an emerging significant tool which can facilitate preventive and controlling measures on the hazardous industrial activities by creating awareness among the stakeholders (Gray et al., 1995a; Uwalomwa, 2011). It allows organizations to measure track and then improve their performance on specific issues. Since the reports are publicly available the reporting can promote transparency and accountability of the organization's environmental performance (Belal, 2001). Consequently, there has been a growth in the voluntary environmental reporting practices of the corporate organizations worldwide (United Nations, 2002).

Bangladesh is facing the challenge of very fast degrading environment due to industrial activities (Ahmed, 2006). Manufacturing activities are recognized as one of the prime sources of environmental pollution in this country (Nath, 2009). Environmental reporting practice can play a vital role in creating environmental responsiveness in this sector (Belal, 2006). Bangladeshi companies have been adopting environmental reporting practices voluntarily in recent years (Ullah et al., 2013). In addition, environmental disclosure in Bangladesh is negligible in terms of quality and quantity (Assaduzzaman et al., 2013).

Over the past few decades a number of studies have been conducted on the multidimensional aspects of environmental reporting practices of the corporate organizations worldwide (Choi, 1999), majority of which have been carried out in

the context of developed countries. But there are relatively limited research works on environmental reporting practices of the organizations operating in Bangladesh (Belal et al., 2009). However, it is not clear that what are the main constraints of environmental reporting practices in Bangladesh, and what are the perceptions of stakeholders regarding the various aspects of environmental reporting practices of the listed companies in Bangladesh. Though, these are very much significant for the development of environmental reporting practices in Bangladesh.

As a result, several scholars (Islam & Deegan, 2008) have called for more direct engagement-based studies by using both primary and secondary data in order to explore the perceptions of both managerial and non-managerial stakeholder groups regarding the environmental reporting practices of corporate organizations in developing countries like Bangladesh.

In reviewing prior literature, up-to-date study was not found that covered this area by focusing on the nature and extent of environmental reporting practices of the listed manufacturing companies and the perceptions of stakeholders in Bangladesh context. So, it can be said that there exists a research gap and dearth of broad based research in this field. Therefore, to bridge this gap in existing literature, the present study is very much relevant, because, this study provides present scenario of environmental reporting practices in the manufacturing companies in Bangladesh. This study also explored the perceptions of multiple stakeholder groups regarding the various aspects of environmental reporting including significance, credibility, regulatory frameworks and limiting factors of environmental reporting practices of the listed manufacturing companies in Bangladesh etc. It is expected that the results of the study can play a vital role to stimulate corporate and national policy for creating environmentally responsive corporate management which is essential for sustainable development. It is also expected that corporate management, regulatory authority, academicians, investors and customers of the companies will be benefited from the outcomes of the study. In this context, the research is very much justifiable and suitable for the PhD program.

1.5 Operational Definitions

Environment means "Surroundings in which an organization operates, including air, water, land, natural resources flora, fauna, humans and their interactions (ISO 14001: 1999)

Environmental impact means any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's activities, products or services (ISO 14001: 1999).

Environmental Aspect is any aspect of an organization's activities, products or services that can interact with the environment. A significant aspect is an environmental aspect that has or can have a significant environmental impact (ISO 14001: 1999).

Environmental Performance means measurable results of the environmental management system, related to an organization's control of its environmental aspects, based on its environmental policy, objectives and targets (ISO 14001: 1999).

Sustainable Development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It first came to prominence with the Bruntland Report of 1987 and is the basis of Agenda 21 (Bruntland, 1987).

Environmental Performance Indicator (EPI) is a specific expression that provides information about an organization's environmental performance (ISO 14031: 1999).

Environmental Protection aims to reduce environmental pollution caused during normal operations - to reduce or prevent emissions to air or water, to dispose of waste materials, to protect land, soil and groundwater, to prevent noise and vibration, or to protect the natural environment.

Bio-diversity is the wealth of life on earth. It refers to the millions of plants, animals, and micro-organisms, their genes and the relationships they build into the living environment (ISO 14001: 1999).

Ecosystems are systems in which organisms interact with each other and with their environment. According to the originator of the term, there are two parts; the entire complex of organisms (biome) living in harmony and the habitat in which the biome exists (ISO 14001: 1999).

Stakeholder is any identifiable group or individual who can affect the achievement of an organization's objectives, or is affected by the achievement of an organization's objectives (Freeman, 1984). Besides, Carroll (1993) defined stakeholders as "any individual or group who can affect or is affected by the actions, decisions, policies, practices, or goals of the organization"

Company Attributes The specific characteristics of an organization which can provide its individuality are called company attributes. For the purpose of this study profitability (proxy by ROA and EBIT), size of the firm (proxy by total sales and total assets), financial leverage (proxy by D/E/ ratio) and age of the firm are considered as company attributes.

Environmental Disclosure means release of a set of information relating to a company's past, present and future environmental management activities and financial implications. It also comprises information about the implications resulting from corporate environmental management decisions and actions. These may include other issues such as current and future estimates of expenditures or operating costs for pollution control equipment and facilities. These may also include sites restoration costs, financing for pollution control equipment or facilities, air, water, or solid wastes release; description of pollution control process or facilities; compliance status of facilities. Among others, environmental policies, environmental awards or prizes, existence of environmental management or audit departments etc are contained in the long list (Enaharo, 2007).

Environmental Cost comprise the costs of all the efforts made or need to be made by the organizations to reduce and prevent the environmental impact of their activities, as well as the environmental objective relevant costs of the organizations. According to United Nations (2009) environmental costs can include waste and emission treatment costs, prevention and environmental

management costs, material costs of non-product outputs, processing cost of non-product outputs and research and development costs.

Environmental Accounting

Environmental or green accounting involves measuring the environmental performance of an organization, including government bodies and manufacturers in economic terms (United Nations, 1971).

Environmental accounting can be defined as a set of organizational activities that deal with the measurement and analysis of the environmental performance of organizations and the reporting of such results to concerned groups, both within and outside the organizations. According to Pramanik et al (2007), environmental accounting is a process of identification, measurement and allocation of environmental costs, the integration of these costs into business, identifying environmental liabilities, if any, and finally communicating this information to the company's stakeholders as a part of general purpose financial statements.

Bennet and James (1998) viewed environmental accounting as the process of generation, analysis and use of non-financial information in order to optimize corporate environmental and economic performance and to achieve sustainable business.

International Federation of Accountants (1998) defined “environmental accounting as the management of environmental and economic performance through the development and implementation of appropriate environment related accounting systems and practices. While this may include reporting and auditing in some companies, environmental accounting typically involves life cycle costing, full cost accounting, benefits assessment and strategic planning for environmental management.”

According to Inter-Governmental Working Group of Experts on International Standards of Accounting and Reporting (ISAR) environmental accounting involves the identification, collection, analysis and the use of two types of information for decision-making:

- i) Physical information on the use and flow of energy, water and materials (including Wastages) and
- ii) Monetary information on environment-related cost, earnings and savings.

According to Coopers and Lybrand (1998) environmental accounting can be expressed within the context of Global Environmental Accounting, National Environmental Accounting and Corporate Environmental Accounting, Corporate Environmental Accounting is further subdivided into Environmental Management Accounting (EMA) and Environmental reporting.

Despite a number of differences, most definitions emphasize key issues such as a link between financial and environmental performance, qualitative and quantitative measurement, and a consideration of wider stakeholders' groups. The definitions consider environmental management accounting and environmental reporting as the part of environmental accounting process.

Environmental Management Accounting (EMA)

EMA is a process of measuring and reporting the financial and non-financial information that helps managers in internal decision making process to fulfill the goals of an organization (Horngren, 2003), both monetary and physical environmental management accounting is internally important for successful management but is not needed for external stakeholders (Schaltegger et al, 1996).

Environmental Reporting

Environmental reporting is a process through which organizations disclose their environmental performance related information to their stakeholders that provides accountability for their activities and their resultant impact on the environment. This process involves communicating the social and environmental effects of organizations' economic actions to particular groups within the society (Gray et al, 1995a).

Environmental reporting is an accounting system which focuses on reporting the cost of environmental liabilities and other significant environmental costs for providing related environmental financial information to external stakeholders

(Belal, 2001). Dwyer (2001) defined environmental reporting as a process of communicating externally the environmental effects of organization's economic actions through the corporate annual reporting or a separate stand-alone publicly available environmental report.

While the various definitions of environmental reporting discussed above do not consider whether environmental reporting is voluntary or mandatory. According to Deegan, C (2002) and GRI-Guidelines (2006) environmental reporting is predominantly a voluntary corporate practice.

Japan Ministry of Environment (2004) defined environmental reporting as a set of reports and publications which are periodically disclosed and which holistically and systematically shows the state of environmental burden caused by organizations' activities and environmental efforts that mitigate them, and which are in accordance with general reporting principles of environmental reporting.

Therefore, for the purpose of the proposed study, environmental reporting is deemed to represent as a process of communicating the social and environmental effects of organizations' economic actions and environmental performance related efforts of the company such as environmental policy, objectives, programs and their outcome and operational structure of the company through the corporate annual report to particular interest groups within the society.

1.6 Organization of the Dissertation

The dissertation comprises eight chapters. Chapter two provides an overview of the prior studies on environmental reporting practices of the organizations with a view to identify the knowledge gap, and to construct the conceptual and methodological basis of this study. This chapter specifically shows that there is a lack of longitudinal research that explored the nature and extent of environmental reporting practices of listed companies and the perceptions of multiple stakeholders regarding the various key aspects of the reporting practices in Bangladesh context.

Chapter three provides discussion on conceptual aspects coupled with regulatory frameworks of environmental reporting as well an overview of theoretical frameworks commonly used in the voluntary environmental disclosure literature. The initial discussion of this chapter focuses on conceptual aspects of environmental reporting. Legal foundation and relevant International Financial Reporting Standards (IFRS) for environmental reporting were also discussed in this chapter. These were followed by a brief discussion on the theoretical perspectives of corporate environmental reporting that have commonly been used in environmental accounting and reporting research. After that, the chapter proceeds with an overview of Legitimacy Theory and Stakeholder Theory. The justification of using these theories was also introduced. Standards of the International Organization for Standardization (ISO) and Guidelines of the Global Reporting Initiatives were specially focused in this chapter.

The main purpose of Chapter four is to introduce the details of research methodology that were employed in addressing the objectives of this study. The Chapter starts with the overview of the research. This is followed by a discussion on the study population, sample size and sampling techniques. A comprehensive discussion on the content analysis method including the selection of the disclosure medium, coding system and unit of measurement, is also introduced in this chapter. This is followed by selection of potential and appropriate participants and interview procedures for collecting primary data.. And finally, the statistical techniques utilized in this study are outlined.

Chapter five presents analysis on the environmental disclosures in the annual reports of the selected listed manufacturing companies in Cement, Tannery, Pharmaceuticals and Textiles industries in Bangladesh during the study period 2009-2013. The research is based on the assumption that annual report is the most commonly used medium through which companies disclose environmental information to different stakeholder groups (Tilt, 1996). The chapter therefore presents analysis on the environmental disclosures in the annual reports of the sample companies by using descriptive statistics to address objectives one and two of this study. The chapter proceeds with a brief discussion on levels of environmental reporting practices of the sample companies in Bangladesh.

Analysis on range of total environmental disclosures of the companies was then provided. After that, the extent of environmental reporting in terms of content-category themes was specially analyzed. The chapter also presented descriptive analysis regarding the corporate environmental disclosures in terms of evidence, location and news types of information.

Chapter six provides analysis on the manifold perceptions of multiple stakeholder groups on environmental reporting practices of the listed manufacturing companies in Bangladesh. This Chapter focuses on the levels of understanding of different stakeholders regarding the concept of environmental reporting together with perceptions of stakeholders concerning the significance, regulatory framework and credibility of environmental reporting practices in Bangladesh as well what different groups of stakeholders perceive companies should disclose in relation to environmental performance. Chapter six also focuses on the challenges of environmental reporting and the possible ways of minimizing the challenges of the reporting practices in Bangladesh based on views and comments of respondents.

Chapter seven provides the concluding issues of the present study in the light of the research objectives. The chapter begins with a summary of research in terms of works done and then a discussion of research findings and outlines contributions of this study to existing literature. It then continues with discussion that addressing the conclusion and policy implications of the research. The chapter also provides limitations of the study and comes to an end with potential directions for further studies within this area of research.

Chapter Two Review of Literature

2.1 Introduction

The central aim of this chapter is to provide an overview of the prior studies on environmental reporting practices of the organizations, Relevant previous studies were also analyzed with a view to realizing the key findings and identify the knowledge gap, and to construct the conceptual and methodological basis of this study.

Harte and Owen (1991) conducted a study on “Environmental disclosure in the annual reports of British companies”. The study analyzed the annual reports of 30 British companies to investigate the environmental disclosures in their annual reports by using content analysis method. The study suggested for external standards on environmental reporting.

Cunningham and Gadenne (2003) conducted study on ‘Do corporations perceive mandatory publication of pollution information for key stakeholders as a legitimacy threat’. The study investigated whether an enhancement in environmental regulation acts as a momentum for changes in annual report disclosure behaviour and concluded that environmental regulation acts as an impetus for companies to include information on certain environmental issues in the annual report.

UNEP and KPMG (2006) issued a publication called "Carrots and Sticks for Starters, Current Trends and Approaches in Voluntary and Mandatory Standards for Sustainability Reporting", (UNEP and KPMG 2006) which gave a first time overview of sustainability reporting on mandatory and voluntary approaches in some selected countries worldwide. The study revealed that the regulatory framework is still evolving across the globe, while the regulatory instruments are purely voluntary at the global level and at the national level a dense network of voluntary and increasingly mandatory sustainability reporting standards and related legislation have also been identified.

The consultancy KPMG performed a survey of corporate sustainability reporting in 2002 among almost 2000 companies (Kolk and van der Veen 2002). The results show that environmental reporting and the verification of these reports is becoming mainstream business.

Biswas and Rahman (2012) conducted a study on 'Bangladesh financial reporting standard (BFRS) and environmental accounting: A case study of listed manufacturing companies in Bangladesh' to examine whether Bangladesh Financial Reporting Standards (BFRS) can be used as a device for monitoring the environmental performance of environmental sensitive companies. The study used qualitative and case study research method and examined the annual reports of 65 Bangladeshi manufacturing companies listed in Dhaka Stock Exchange. The study revealed that the financial statements disclose key environmental information. The researcher suggested for further research by examining, the form of association between nonfinancial and financial information that purports to serve the environment in another avenue.

Trotman and Bradley (1981) had studied on "Association between Social Responsibility Disclosure and characteristics of Companies" to examine the association between environmental reporting and company attributes in Malaysia. The content analysis technique was used in this study. The study revealed that a positive relationship existed between firms' financial leverage and the extent of voluntary disclosure. However, findings from related literatures by Show and Wong-Boren (1987), Ahmed and Nicolls (1994) and Mohammed and Tamai (2006) showed no statistical relationship between financial leverage and voluntary disclosure.

Teoh and Thong (1984) conducted a study on 'Another Look at Corporate Social Responsibility and Reporting, an Empirical Study in a Developing Country'. The researchers investigated corporate social responsibility accounting and reporting from the standpoint of a developing country. Their study was based on an interview questionnaire survey, primarily conducted with chief executive officers across 100 companies operating in Malaysia. The findings of their study indicated that social reporting lags behind corporate social involvement and that corporate

attention is largely focused on activities relating to employees and products. The findings also revealed that those companies with local ownership were less committed to fulfilling any social responsibilities and associated reporting, whereas companies with major foreign ownership, particularly those from the United States and Britain, appeared to be more willing to accept their social accountability commitments”.

Belal (2001) conducted a research on 'A study of Corporate Social Disclosures in Bangladesh'. The researcher examined the social and environmental disclosure practices of publicly traded companies operating in Bangladesh by using secondary data. The study revealed that on an average 13 lines were used by the companies to make social and environmental disclosures, which represent only 0.5 percent of the total number of lines contained in the annual reports of the sample companies. Therefore, the study concluded that Bangladeshi companies are disclosing social, ethical and environmental information on a limited scale. The study didn't consider any particular sector.

Belal and Owen (2004) conducted a study on “The views of corporate managers on the current state of, and future prospects for, social reporting in Bangladesh: an engagement based Study”. The study used a series of interviews with senior managers from 23 Bangladeshi companies representing the multinational, domestic private and public sectors. The purpose of the study was to examine the views of corporate managers on the current state of, and future prospects for, social and environmental reporting in Bangladesh. The study revealed that the main motivation behind current reporting practice lies in a desire on the part of corporate management to manage powerful stakeholder groups, whilst perceived pressure from external forces, notably parent companies' instructions and demands from international buyers, was driving the process forward. The study also found that adoption of international social and environmental accounting standards and codes is likely to become more prevalent in the future. The study concluded that local culture should be considered in case of adopting the international standards or guidelines on social and environmental reporting.

De Villers and Van Staden (2006) conducted a study on 'Environmental Disclosures have a Legitimizing effect? Evidence from Africa'. The researcher utilized annual report content analysis to investigate the environmental disclosure practices of companies operating in South Africa. They conducted a content analysis of more than 140 company's annual reports over a nine-year period in order to identify the trends in environmental disclosure by South African companies over the time. The results indicated a reduction in environmental reporting after an initial period of increase, for both mining companies and the top 100 industrial companies. The decrease for mining companies was bigger than for the top 100 companies. The disclosure of both general and specific information increased from 1994 to 1999; disclosure of specific information then declined by five times more than the decline in disclosure of general information. The researchers suggested that these trends are consistent with legitimacy theory because legitimizing objectives may also be served by changing the type (general or specific) or by reducing the volume of environmental disclosures. Their research contributes to the social and environmental accounting literature by way of a theoretical explanation (legitimacy theory) of motivation for social and environmental disclosure practices of companies operating in a developing country. The study didn't consider the stakeholder's views and used only secondary data.

Hossain et al. (2006) had a study on 'Corporate social and Environmental Disclosure in Developing Countries: Evidence from Bangladesh" The objective of the study is to evaluate the nature and extent of the corporate social and environmental disclosure practices of the non-financial companies listed on the Dhaka stock Exchange. The study also evaluated the relationship between extent of corporate social and environmental disclosure and several corporate attributes. The study used questionnaire survey and content analysis method. The study covered 107 listed companies' annual reports of the year 2002-2003. The study reported that a very few companies in Bangladesh are making efforts to provide social and Environmental information on a voluntary basis, which are mostly qualitative in nature. The researcher suggested for conducting further research on any particular industry type covering long period of time.

Sumiani et al. (2007) conducted a research on 'Environmental reporting in a developing country: A case study on status and implementation in Malaysia' The study used content analysis. The checklist for their content analysis was developed on the basis of the decision rule for the categories of social and environmental information of the UK based Centre of Social and Environmental Research (CSEA) and guidelines from the Global Reporting Initiative (GRI). Through the examination of 50 companies' one year annual reports, they came to a conclusion that the environmental reporting practices of the Malaysian companies was at low level. The study was conducted based on secondary data and covered only one year of period.

Ambe (2007) conducted a study on 'Environmental Management Accounting in South Africa: Status, Challenges and Implementation Framework'. The objective of the study is to investigate and explore how selected companies in South Africa treat environmental impacts and how they account for and manage environmental costs. An exploratory qualitative technique was used for the study. The study revealed that most of the companies do have an environmental mission statement, value statement, action plan to disclose environmental issues in their annual reports or stand-alone sustainability reports. The study also revealed that the generation and recording of environmental capital expenditure extremely is low in case of 50.8% selected companies, while 48.65% indicate that generation and recording is average to extremely high. The researcher also found, disagreement or partial agreement by organizations on the identification and disclosure of prevention and environmental management costs. The study also provided recommendation on EMA implementation framework for South Africa. The researcher suggested for conducting further research to understand the manager's views about environmental costs development and disclosure procedure.

Belal and Owen (2007) conducted a study on 'The Views of Corporate Managers on the Current State of and Future Prospects for, Social Reporting in Bangladesh. An Engagement based Study' to determine the views of Bangladeshi managers on the current state of, and future prospects for, social reporting in the country. They conducted a series of interviews with senior

managers of 23 Bangladeshi companies representing the multinational, domestic private and public sectors. The results of their study revealed that managers' major motivation for social reporting practices lies in a desire on the part of corporate management to manage powerful stakeholder groups such as multinational companies. The researchers also expressed reservations over the potential for social reporting to create real change in corporate accountability and related practices, particularly when Western-developed social standards are imposed without consideration of local cultural, economic and social contexts. Their study appears to be one among very few studies that utilise a primary research method such as interviews to investigate social accountability and disclosure practices within the context of a developing country like Bangladesh. But the study was not conducted on any particular sector.

Peng (2009) had studied on "Research on Corporate Social Disclosure in China" The study aimed to construct an appropriate of corporate social and environmental Disclosure (CSED) framework and to determine the relationship between CSED in the annual reports and the performance of the firm. The study was conducted on the top 100 Chinese companies by firm size (Sales revenue). Annual reports of the companies for 2008 were considered in this study. The researcher scored the CSED by comparing the annual reports with an unweighted index, which was developed based on a number of guidelines, in particular the G3 guidelines. The study revealed that the firms that were large in size and were active in social responsibility implementation had likelihood to disclose more intensive social and environmental information.

Islam (2009) conducted a broad based study on 'The social and environmental reporting practices of the organizations' operation or sourcing product from a developing country: evidence from Bangladesh'. The study focused on the social and environmental disclosure practice of the Bangladesh Garment Manufacturers and Exporters Association (BGMEA) and on the international buying companies Nike and Henner & Maturity (H & M). The study covered three integrated research issues such as management's motivational factors adopt social and environmental reporting practices within a major organization. The linkage between negative media attention and positive corporate social and

environmental reporting and the role of environmental NGOs to change media strategies in enhancing SEAR practices of the organizations. The study used in-depth interview, Annual Report Content Analysis and survey methods. The study also uses the legitimacy theory, stakeholder theory and institutional theory. The study reveals that social responsibility initiative of BGMEA respond directly to the concerns of multinational buying companies and media have influence upon corporate social and environmental disclosure practices. The study also reveals that Global and local NGOs can positively use the media to effect change in the disclosure practices of the organizations. The study was conducted only on RMG sub-sector. Other sub-sectors of the manufacturing sector were not concern of the study.

Liang et al. (2011) had a study on “Social Responsibility to Commercial Banks” to evaluate the quality of social responsibility disclosure from corporate standalone sustainability reports between 2005 and 2008 in 25 banking companies in China. They adopted an un-weighted disclosure index. Content analysis method was used in this study. The G3 Guidelines was used to identify disclosure items and indicators of the intensity of social and environmental disclosures. The researchers found that financial performance, company growth, assets quality and risk control were not influential to corporate social disclosure. The study also revealed that listed companies with large firm size had stronger levels of social responsibility.

Yaftian (2011) studied on “An empirical investigation of corporate social reporting in Iran: practices, needs and perceptions”. The study examined CSR practices in corporate annual reports and needs of Iranian stakeholders regarding CSR information. The study used content analysis method to examine the nature and extent of CSR disclosures in the annual reports of 108 Iranian listed companies for a single year. The study also used questionnaires survey method to investigate the CSR information needs of stakeholders. The study further investigates the relationship between the volume of environmental disclosures with four corporate characteristics, namely size, profitability, financial leverage and industry type. In this regard, the study used multiple regression analysis. The findings showed that the theme of human resource was the most common type of

information in the annual reports. The study also revealed that company size was the only characteristics that had a statistically significant relationship with the overall level of CSR disclosures. Regarding stakeholders' needs and perceptions, the study revealed that annual reports were perceived as the main source of CSR information, and stakeholders believed that CSR disclosures were sufficient among the sample companies.

Zhao (2011) conducted a study on social and environmental reporting practices in a Chinese context. The researcher used content analysis, questionnaire survey and in-depth interview methods for conducting the study. The study reveals that social and environmental reporting practices in China has been increasing and the regulatory requirements and other national and international corporate issues influence the SEAR practice in China. The researcher suggested for taking further study to explore how the stakeholders' perceptions influence the ER, practices of the organization.

Haque (2011) conducted a comprehensive study on 'Climate change related corporate governance disclosure practices in Australia'. Attempt has been made to evaluate the nature of the climate change related corporate governance disclosure practices of the companies and to know the perception of the stakeholders regarding the reporting and to investigate the reasons for the practices. In this study the researcher used content analysis method, in-depth interview and survey methods. The study was conducted on five major Australian emission-intensive companies over a 16 year period. In this study the researcher used a disclosure index consisting 25 specific climate change-related corporate governance issues. The index was formulated on the basis of six 'expert guides' provided by various research organizations. The study reveals that climate change-related corporate governance disclosure practices of the Australian companies is at low level. The study also reveals that stakeholders identified all the items of the disclosure index as relevant and important. The study also identified some reasons for the low level of climate change related corporate disclosures practices of the Australian companies. The study was conducted in the context of developed country.

Ahmad (2012) conducted a study on 'Environmental Accounting & Reporting Practices: Significance and issues: A case from Bangladeshi Companies' based on both primary and secondary data. The objective of the study is to evaluate the EAR practices in the selected companies. The study used annual report content analysis and questionnaire survey methods. 40 companies' annual reports of the year 2010 were collected and total number of 40 chief Accountants and Senior Accountants, taking one from each selected companies were interviewed with the help of structured questionnaire. All the companies were selected among the listed companies of DSE. The study revealed that 60% of total respondents opined in favor of highly aware of Environmental Accounting (EA) only, 30% opined in favor of aware of EA and the remaining 10% were not aware of EA. As regards Environmental Reporting, 75% of the respondents were of at all in favor of highly aware, 15% were aware of only and the rest 10% were not aware. The study also revealed that in most of the cases the quality and quantity of disclosures were less satisfactory and poor. The study was not conducted on any particular sector.

Ullah et al. (2013) examined the environmental accounting and reporting practices of the listed companies in Bangladesh. They used content analysis method for the study. Thirty company's annual reports over a year were collected to analyze from the companies listed on the country's stock exchanges. The study revealed that sample companies disclosed environmental information basically in a narrative form and some time through picture but no company is using chart in their annual report to disclose environmental information. The study also found that 53% of the sample companies used 100-200 words and 46.67% of the sample companies used 5-10 sentence and 13.33% of the sample companies used picture to disclose environmental information in their annual reports. The study covers only one year of period and sample companies was selected from various sectors.

Assaduzzaman et al. (2014) conducted a study on "Corporate Environmental Reporting (CER) Practices: Empirical Evidence from Selected Non-financial Companies in Bangladesh". The study explored the nature and extent of environmental disclosures in the annual reports of 27 listed non financial

companies in Bangladesh by taking 2012 as target year. In this regard, the study used content analysis method. The study also investigated the perceptions of 40 senior accounts executives of sample companies regarding the environmental reporting practices of the listed companies in Bangladesh. The primary data were collected by using a structured questionnaire. Besides, the study used a convenience sampling process to collect primary data. The study revealed that 61.36% of the listed companies made environmental disclosures. The study also revealed that 88.90% of total environmental disclosures were generalized qualitative statements and 96.30% was located in the director's report. The study further showed that survey respondents felt the strong need for environmental disclosure in the corporate annual reports. The study also identified some major problems involved in environmental reporting practices and suggested some measures. The study concluded that environmental reporting practices in listed companies in Bangladesh were far from satisfactory level and hence poor in the real sense of the term.

2.2 Findings from Literature Review and Research Gap

The researcher tried to review the prior literature on environmental reporting practices of the corporate organizations. The review of relevant literature revealed that over the past few decades a number of studies have been conducted on this issue, majority of which have been done in the context of European Union, North America, Africa, Australia and in some Asian countries like Japan, China, Philippines, Malaysia and India. But a few studies have been conducted in Bangladesh.

The review also revealed that no standardized regulatory framework and generic or industry specific indicators for environmental reporting have not yet developed, which can be applicable globally in general. It was also observed that although determinants of environmental disclosures are almost same in all the studies, but their influences were found different.

Besides, It is also revealed that the concept of corporate environmental reporting is relatively new in Bangladesh. And the studies carried out in this country were only limited to the measurement of environmental disclosures, and most of them

were based on secondary data. Moreover, recent environmental reporting literature emphasizes the importance of exploring the perceptions of both managerial and non-managerial stakeholder groups regarding environmental reporting. However, there is a lack of studies that examined non-managerial stakeholders' perceptions of environmental reporting in Bangladesh context. Some very recent studies concentrate on the perceptions of multiple stakeholder groups in this country.

As per researcher's knowledge goes, any comprehensive study was not found that covered this area by focusing on the nature and extent of environmental reporting practices of listed manufacturing companies and perceptions of multiple stakeholder groups regarding the various aspects of the reporting practices in Bangladesh context.

Chapter Three

Conceptual and Theoretical Perspectives

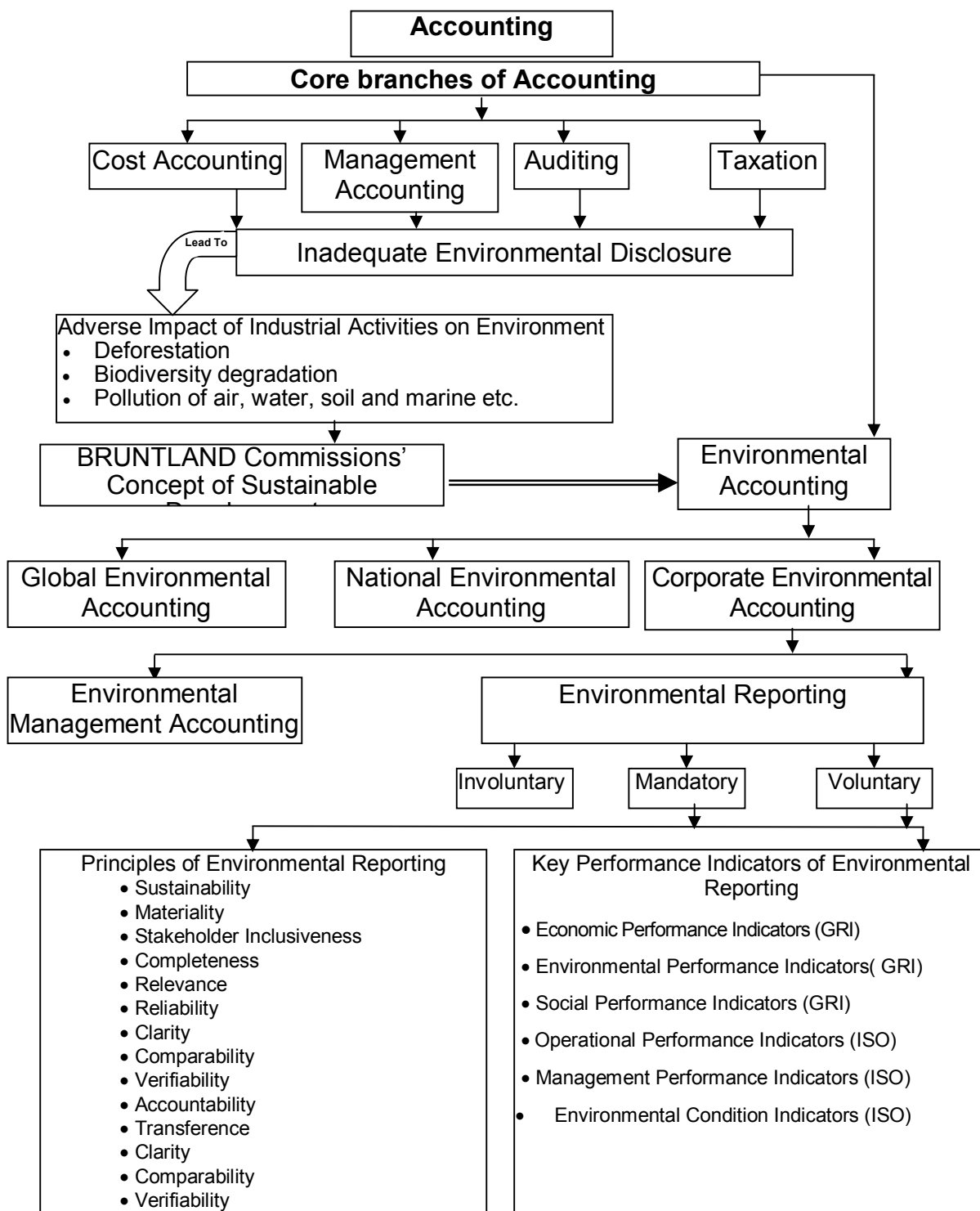
3.1 Introduction

The purpose of this chapter is to provide insight into the conceptual aspects coupled with regulatory frameworks of environmental reporting as well theoretical frameworks commonly used in the voluntary environmental disclosure literature. It also introduced the theoretical perspectives to be utilized in this research. The initial discussion of this chapter focuses on concepts of environmental reporting, principles, performance indicators and responsibilities of environmental reporting. Legal foundation and relevant Financial Reporting Standards for environmental reporting were also discussed in this chapter. These were followed by a brief discussion on the theoretical perspectives of corporate environmental reporting as discussed in the existing environmental accounting literature. After that, the chapter proceeds with an overview of Legitimacy Theory and Stakeholder Theory. The justification of using these theories was also introduced. Standards of the International Organization for Standardization (ISO) and Guidelines of the Global Reporting Initiatives were specially focused in this chapter.

3.2 Environmental Reporting: Conceptual Aspects

Various terms are used in introducing Environmental Reporting on the basis of purpose and contents of the report, such as "Social and Environmental Reporting", which describe the social and environmental aspects of the organization's activities, and "Sustainability Reporting", which provide economic, social and environmental performance related information of the organizations (Islam, 2009). In a broad sense, environmental reporting is used to disclose the socio-economic and environmental outcomes and results that occurred during the reporting period in the context of the organization's commitment, strategy and management approach (Uwalomwa, 2011).

Conceptual Frame of Environmental Reporting



Source: Developed by the researcher on the basis of BRUNTLAND commissions' report 1987 and others previous literature like Coopers and Lybrand (1998) and (Uwalomwa (2011).

3.2.1 Types of Environmental Reporting

The Deloitte Touche Tohmatsu International (1993) identified the three forms of environmental reporting, such as mandatory, voluntary and involuntary.

Mandatory environmental reporting is a process of communicating the organization's environmental performance to particular interest groups according to law. Voluntary environmental reporting involves the disclosure of organization's environmental performance related information on a voluntary basis. Through this process company may seek to influence the social perception towards their operations and also try to create a good image and make self-congratulatory claims. In most cases, such disclosures arise from the pressures of various stakeholder groups. On the other hand, involuntary environmental reporting has been seen as the disclosure of company's environmental information by third party without its permission and against its will (Uwalomwa, 2011).

3.2.2 Principles of Environmental Reporting

In order to realize the rationale behind environmental reporting and to make it an effective tool for meaningful environmental communication and discharging social accountability, it is necessary to consider the basic principles upon which environment reporting operates. Reporting principles describe the outcomes that a report should achieve and guide the decisions throughout the reporting process, such as selecting which topics and indicators to be reported on and how to report on them (GRI, 2006). Schaltegger et al., (1996) identified three basic principles of environmental reporting. Whereas, Japan Ministry of Environment mentioned five basic principles of environmental reporting in their Environmental Reporting Guidelines (2004). Global Reporting Initiatives also mentioned some reporting principles in Sustainability Reporting Guidelines (GRI, 2006).

Sustainability: The principle of sustainability in environmental reporting implies that society must not use resources more than it can regenerate. The report should present the organization's performance in the wider context of sustainability.

Relevance: Environmental reporting should suit the expectations and needs of its readers and needs to be published in a fixed interval. It should provide

information regarding environmental burden caused by organization's activities and environmental programs that mitigate the burden.

Materiality: The information in a environmental report should cover the topics and indicators that reflect the organization's significant economic, environmental and social impacts or that would substantively influence the assessments and decisions of the stakeholders.

Reliability: Environmental reporting should provide accurate and reliable information. It should include substantial intents that reflect the actual scenario of the organization's environmental performance.

Clarity: Environmental reporting should be presented by using simple sentence and style. Information should be introduced in clear and easily realizable way to avoid misunderstandings among the stakeholders. Both qualitative and quantitative data should be use in environmental reporting to provide real picture of the organization's environmental performance to the readers.

Comparability: Environmental reporting needs to provide such information which are comparable between different reporting periods of the organization and even among the organizations in the same and different sectors.

Verifiability: The information mentioned in the environmental reporting needs to be verifiable with objective standpoint. Methods and boundaries of the each and every information included in the report should be elderly described to confirm their reliability by a third party.

Stakeholder Inclusiveness: The reporting organization should identify its stakeholders and explain in the report how it has responded to their reasonable expectations and interests.

Completeness: The report boundary should be sufficient to reflect significant economic, environmental and social impacts and enable stakeholders to realize the reporting organization's performance in a certain reporting period.

3.2.3 Performance Indicators for Environmental Reporting

Indicators play significant role in eliciting comparable information to ensure a balance and reasonable presentation of the organization's performance. Performance indicators are also crucial in preparing quality environmental reporting (ISO, 2004). The GRI defines performance indicators as qualitative or quantitative information about results or outcomes associated with the organization that are comparable and demonstrate change over time (GRI, 2006). Enterprises within the same industry often report their environmental performance related information by using different indicators, even not using the same indicators from year to year. As a result, it is difficult to compare the environmental performance of different organizations. And environmental reporting currently lacks of credibility in the eyes of certain external stakeholder groups. Various studies revealed the diversity in environmental performance indicator (Uwalomwa, (2011).

Environmental Performance Indicator (EPI) has been defined as the measurement of the interaction between the business and the environment (Gray et al., 1995a).The identification and standardization of both generic and industry-specific performance indicators could play a significant role in providing essential qualitative and quantitative environmental information in the annual report. The use of standardized performance indicators could also stimulate the organizations to improve their environmental and financial performance by comparing them with competitors (ISO, 2004).

Many national and regional environmental and accounting regulators have taken initiatives for developing relevant generic and industry specific environmental performance indicators. The generic categories of Environmental Performance Indicators (EPI) provide an important synthesis of the current approach for monitoring, measuring and reporting environmental performance (Uwalomwa, (2011). Japan Ministry of Environment prescribed specific environmental performance indicators (EPI) in Environmental Reporting Guidelines (2004). The Global Reporting Initiatives (GRI) prescribed sustainability performance indicators for potential environmental reporting in Sustainability Reporting Guidelines G3

(GRI, 2006). In G3 guidelines, Sustainability Performance Indicators are categorized by economic, environmental and social variables. Social indicators are further categorized by Labor, Human Rights, Society and Product Responsibility. Each category includes a corresponding set of Core and Additional Performance Indicators. Core indicators have developed through GRI's multi-stakeholders processes, which are intended to identify generally applicable indicators and are assumed to be material for most organizations. Besides, ISO has been established specific standard to develop such indicators like the ISO14031 (ISO, 2006). The ISO14031 introduces three kinds of indicators for Environmental Performance Evaluation (EPE);

1. OPI(s) (Operational Performance Indicators) that give information on the environmental performance linked with the operation
2. MPI(s) (Management Performance Indicators) that give information on the performance of the management system implemented to influence the environmental performance
3. ECI(s) (Environmental Condition Indicators) that give information on the situation of the environment in the area where the organization is located (ISO, 2004).

3.2.4 Responsibilities of Environmental Reporting

Environmental reporting has some basic responsibilities which can be described from external and internal viewpoints of the organizations (Uwalomwa, 2011).

Environmental reporting is used as a window for environmental communication between the society and organizations. External stakeholders can be informed about the environmental burden, mitigation methods and environmental efforts of the organizations through this window (Gray et al., 1996). On the other hand, organizations can understand the expectations of the external stakeholders regarding environmental performance of the entities. The external responsibilities of the environmental reporting system are:

To provide information to meet the social accountability of the organization, to provide organization's environmental performance related information that are crucially relevant for the decision making process of the external stakeholders, To accelerate the environmental consciousness of the society by disclosing the targets and the current status of the organization's environmental performance (GRI, 2006).

The internal responsibilities of environmental reporting are to review the organization's environmental strategy, objectives and programs for enhancing the environmental performance and improving the contents of the environmental reporting, to increase the employees' awareness regarding environmental performance and efforts of the organization, and to motivate their environmental consciousness (Enaharo, 2009).

The concept of environmental reporting has firmly become a desirable and mainstream practice in the key sectors and there is still much to be learned. A number of guidelines have been developed for measuring and disclosing environmental performance of the organizations worldwide. Many national and international organizations have played an active role in initiating and refining environmental reporting frameworks. Several countries around the world have introduced legislation that set obligations to report about environmental performance of the entities.

3.3 Regulatory Frameworks of Environmental Reporting

3.3.1 International Standards, Codes and Guidelines for Environmental Reporting

The number of international standards, codes and guidelines regarding environmental reporting has been increasing gradually. Among all the International Standards identified at the global level, the GRI G3 Guidelines and ISO 14031 requirements are generally accepted as the most comprehensive on sustainability as a tool for measurement and communication (UNEP and KPMG, 2006).

- **The Global Reporting Initiative Guidelines:** In 1997 US-based Coalition for Environmentally Responsible Economics (CERES) and UNEP launched the Global Reporting Initiative (GRI) process to develop guidelines for reporting on the triple bottom line; economic, environmental and social performance.

The GRI plays a crucial role in sustainable development by providing sustainability reporting framework. The GRI framework sets out the principles and indicators that organizations can use to measure and report their sustainability performance. These Guidelines are for voluntary use by organizations for sustainability reporting. (GRI, 2000). The GRI guidelines will be further discussed in details in this chapter.

- **The UN Global Compact** is the world's largest voluntary corporate citizenship initiative for organizations that are committed to align their operations and strategies with 10 principles in the areas of human rights, labor, the environment and anti-corruption. Once a commitment is made by the Chief Executive Officer of a company for joining to the initiative, the company has to integrate the principles into its business operations, contribute to broad development goals (including the Millennium Development Goals) and communicate annually on progress. Business participants are required to submit an annual Communication on Progress (COP) on the Compact website and to share the COP widely with their stakeholders (UNEP and KPMG, 2006).
- **UN Principles for Responsible Investment: (UNPRI)** is an investor initiative in partnership with the UNEP Finance Initiative and the UN Global Compact. The PRI is a set of voluntary best practice principles to assist investors in integrating environmental, social and corporate governance (ESG) issues into investment processes and ownership practices. Principle six of the PRI asks each signatory to 'report on their activities and progress towards implementing the Principles'(UNEP and KPMG, 2006).
- **The Organization for Economic Co-operation and Development (OECD)** Guidelines for Multinational Enterprises include Section III on "Disclosure", which encourages timely, regular, reliable and relevant disclosures on financial and non-financial performance, including environmental and social issues(UNEP and KPMG, 2006).

- **The International Organization for Standardization (ISO)** has developed more than 17,500 standards to date (ISO, 2013). In the last 20 years ISO standards have also addressed important organizational and management aspects with such standards as the ISO 9000 series on quality management, ISO 14000 series on environmental management, ISO 22000 on food safety management, ISO 24510 standards on water supply and treatment services and the new ISO 31000 standard on risk management. In the specific area of environmental reporting and communication, ISO 14031 standard play significant role (ISO, 2004). Environment and environmental reporting related ISO standards will be discussed again in this chapter.
- **The Coalition for Environmentally Responsible Economics (CERES) Principles** (previously "Valdez"), 1992, were developed by CERES following the 1989 Exxon Valdez disaster. This ten-point code of conduct also introduced specific environmental reporting guidelines for the organizations to report periodically on environmental management structures and results (UNEP and KPMG, 2006) .
- **The SA8000 standard** is a voluntary, universal and auditable standard for decent work conditions that was developed by Social Accountability International, a multi-stakeholder NGO initiative. The SA8000 standard is based on the core conventions of the International Labor Organization, the United Nations Convention on the Rights of the Child, and the Universal Declaration of Human Rights (UNEP, 2006).
- **AA1000 Accountability Principles Standard (AA1000APS), 2008** is used by organizations to develop an accountable and strategic response to sustainability, including reporting. It provides auditable criteria for each of the three principles of inclusiveness, materiality and responsiveness in the context of an AA1000AS assurance engagement (UNEP and KPMG, 2006).
- **The Carbon Disclosure Project (CDP)** is an UK-based Organization that works with shareholders and corporations to disclose information regarding the greenhouse gas emissions of major corporations. Its mission is to "collect and distribute high quality information that motivates investors, corporations

and governments to take action to prevent dangerous climate change". In 2008, it published the emissions data for 1,550 of the world's largest corporations which are accountable for 26% of global anthropogenic emissions (UNEP and KPMG, 2012).

3.3.2 Legislation, Standards, Codes and Guidelines for Environmental Reporting in European Countries

Review of relevant literature revealed that both voluntary and mandatory standards have been evolving at the regional and national level in the European Union countries. In accordance with the Integrated Pollution Prevention and Control Directive (IPPC), 1996, member states are required to register emission data from large companies and report these data to the European Commission. The European Pollutant Release and Transfer Register (PRTR) came into force in February, 2006. According to PRTR, companies have to report on emissions specific substances to the authority. The EU Modernization Directive, 2003 is a unique mandatory standard for environmental reporting. According to this rule European companies are required to include non-financial information in their annual and consolidated report if it is necessary for understanding of the company's development, performance or position. Such reporting should include environmental and employee matters and key performance indicators which are appropriate in consistence with European Commission's Recommendation. Besides, listed companies have to include a corporate governance statement in their annual report (UNEP and KPMG, 2006). Moreover, a large number of European countries enacted legislation on environmental reporting.

Regulatory Framework of Environmental Reporting in Denmark

Denmark was the first country to adopt mandatory legislation on environmental reporting. According to the Green Accounts Act, 1995, the Danish listed companies are required to prepare a so-called 'Green Account'. The Danish Financial Statement Act, 2001, requires reporting on Intellectual Capital Resources and environmental aspect in the management report. In 2009 these requirements were expanded to include CSR. The Act also encourages the use of the GRI G3 Guidelines for the companies (UNEP and KPMG, 2012).

Regulatory Framework of Environmental Reporting in Norway

The Norwegian Accounting Act, 1998, requires the inclusion of working environment, gender equity and environmental issues in the Director's report. In addition it requires the implementation of measures that can prevent or reduce the negative environmental impacts for all the listed companies. Besides, according to the Norwegian Code of Practice for Corporate Governance, 2007, all the listed companies must publish a statement specifying what they have done to comply with the recommendation of the code (UNEP and KPMG, 2006).

Regulatory Framework of the Environmental Reporting in Netherlands

The Dutch Civil code, 1838, requires that organizations should give information (both financial and non-financial) about the environment, employees and risks in their annual reports for understanding of company's performance. In addition the Environmental Protection Act, 1993, includes a section on environmental reporting for the 'largest Polluters' of the country. The Dutch Accounting Standards Board (DASB) issued "Guidelines for the Integration of Social and Environmental Activities in the Financial Reporting of Companies". The Social and Economic Council of the Netherlands (SER) issued guidelines on separate social reporting, in view of evolving public expectations about company reporting on CSR in 2009 (UNEP and KPMG, 2012).

Regulatory Framework of Environmental Reporting in France

The journey of environmental disclosure of the French organizations started by the law of 7th July 1977 on the social review which mandates all companies with more than 300 employees to publish a social review (it includes more than 100 indicators). In 2001, the French Parliament passed Article 116 of the New Economic Regulation Act (NRE) which required all listed companies to integrate social and environmental information in their annual reports especially in the management report, detailed requirements was introduced in the Enforcement Order, 2002. The requirements are based on a list of forty indicators, many of those inspired by the GRI performance indicators. Some indicators are also taken from the 'French Social Report' a list of social data required from all companies to

show compliance with labor regulation. Another draft law was developed in 2009 for the national engagement toward the environment called "Grenelle 2" Article 26. The draft law states the requirement for companies (with more than 500 employees) in high emitting sectors to publish the amount of their greenhouse gas emissions by 1 January, 2011, with an update of at least every 5 years. Draft Article 83 extends the NRE law to companies exceeding a balance sheet threshold (to be defined) and with more than 500 employees. Other relevant laws introduced for France companies are:

- ADEM Carbon footprint methodology, 2002.
- Centre of Young Leaders and Agents of Social Economy, Social Impact Assessment, 2002. Besides, A draft Auditor's Standards regarding assurance on social and environmental information in sustainability reports is also developed in France (UNEP and KPMG, 2012).

Regulatory Framework of Environmental Reporting in United Kingdom

The British Companies Act, 2006, requires all listed companies to provide a description within their annual report on the company's strategies, performance and Business Review. This is also a requirement of the EU Modernization Directive. The Business Review requirement was initiated instead of a mandatory Operating and Financial Review (OFR), which remains a voluntary standard. As part of the UK listing requirements, the Combined Code, 2003, requires business to report on governance and internal control. Another important law regarding environmental reporting is the Climate Change Act, 2008, which was introduced to ensure the accountability of UK companies for all six kyoto Gases. It mandates the UK government to issue reporting guidance by October 2009. Additionally, by 6 April, 2012 the government is required to exercise powers under the companies Act to require the inclusion of GHG reporting in a company's directors' Report.

The Carbon Reduction Commitment (CRC), 2010, is also a significant regulatory initiative regarding environmental reporting in UK, It requires companies to measure and report all of their emissions related to energy use to the Environment

Agency. Annual Reporting will also be required and organizations have to sign a statement of records confirming that adequate data have been kept. Environmental Reporting Guidelines key Performance Indicators (KPIs), 2006 is a voluntary regulatory rule for environmental reporting in UK. The guidelines are designed to assist companies with new narrative reporting requirements relating to environmental matters (UNEP and KPMG, 2006; UNEP and KPMG, 2012).

3.3.3 Legislation, Standards, Codes and Guidelines for Environmental Reporting in Asian Countries

Regulatory Framework of Environmental Reporting in Japan

The Government of Japan has developed the “Master Plan for Facilitating Formation of Sustainable Society” in 2003. The plan sets the objectives, that about 50% of the listed corporations and about 30% of the corporation that are not listed but with more than 500 employees would publish their environmental reports (Japan, 2004). The Ministry of Environment, Japan has promoted environmental reporting with various initiatives including the publications of the 'Environmental Reporting Guidelines' like 2000 Version, 2002 Version, 2003 Version, 2004 Version and "Environmental Performance Indicators for Business, (2002 Version)." The guidelines set out the definitions and calculation methods for environmental disclosures. If companies wish to report in accordance with the guidelines, they are required to include summary lists and tables for major indicators, the status of environmentally conscious investment or financing and the status of biodiversity conservation and sustainable use of biological resources, Corporations are advised to take measures for improving the reliability of environmental reporting with greater focus on 'stakeholders' views. Besides, the country has some mandatory legal requirements regarding environmental reporting such as the Law Concerning the Promotion of Business Activities with Environmental Consideration, 2005, which requires that "specified entities" are to publish an environmental report every year. The Law concerning the Rational Use of Energy, 1979, created obligation for the organizations to report the amount of energy consumption and greenhouse gas emissions to the government. The Railway Enterprise Act, 2006, makes it mandatory for railway business to issue annual safety report. The Civil Aeronautics Act, 2006, also creates obligation for airlines to issue annual safety report (UNEP and KPMG, 2012).

Regulatory Framework of Environmental Reporting in India

The level of corporate environmental reporting in India is still evolving. The tradition of non-financial reporting can be traced back to the '90s, when a public announcement was made by the Central Government in 1991. Through the announcement, the Ministry of Environment and Forest has proposed that "every company shall include the particulars of compliance with the environmental laws, steps taken or proposed to be taken towards adoption of clean technologies for prevention of pollution, waste minimization, waste re-cycling and utilization, pollution control measures, investment on environmental protection and impact of these measures on waste reduction, water and other resources conservation in the Board of Directors' report". A notification issued by the Ministry of Environment and Forests, Government of India on 'Environmental Audit Report' in 1992 (The term 'Audit report' was replaced by 'statement' as a result of another notification issued by the Ministry of environment in 1993). The notification requires submission of an Environmental Statement to the Pollution Control Board (PCB), which is applicable to any industry, operation or process requiring consent to operate within the water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981 or both or authorization under the Hazardous Wastes (Management and Handling) Rules, 1989 issued under the Environment (protection) Act, 1986. In the environment statement, the concerned entity is required to provide information on:

1. Water and Raw Material consumption.
2. Pollution generated.
3. Nature of hazardous waste and disposal practice and
4. Impact of pollution control measures on conservation of natural resources.

The Companies Bill, 1993 stipulate that the Board of Directors' Report (attached to every balance sheet tabled at the company annual general meeting) shall contain information on conservation of energy. The latter is expected to include energy conservation measures taken for reduction of the consumption of energy, impact of measures taken for reduction of energy consumption and consequent impact

on the cost of production of goods, total and per unit energy consumption of production, on respect of specified industry, According to Indian Factories Act, 1948 (Amended in 1987) every factory is required to submit report to their relevant state governments in a prescribed format which covers information relating to labor and employment, working hours, accidents, health and safety (Pramanik, 2007).

In 2009, the Ministry of Corporate Affairs issued the voluntary corporate Social Responsibility Guidelines for dissemination of information to stakeholders and the public regarding care for stakeholders, ethical functioning, respect for workers rights and welfare, environment and activities for social and inclusive development of the organizations. The Central Pollution Control Board of India promotes a chart named Corporate Responsibility for Environmental Protection (CREP), 2003 which is an initiative that requires compliance by leading resource intensive industry.

A notice to all commercial banks to embrace principles of corporate social responsibility and sustainable development, 2007, was issued by the Reserve Bank of India (RBI). The notice aimed to encourage the financial institution for creating awareness about human rights, sustainability and environment among their clients.

Various studies revealed that there is no complete reporting standard on environmental reporting which is recognized by the accounting or regulatory bodies in India. The companies are becoming increasingly oriented towards global standards on sustainability reporting, in particular, the Global Reporting Initiative Framework. The studies also showed that a small percentage of companies initiated voluntary reporting on environmental and social issues almost ten years ago in this country. For most of these companies, the GRI Guidelines is used as the reference point, though the scope and the content of the reporting parameters are varied (UNEP and KPMG, 2006).

3.3.4 Environmental Regulations and Environmental Reporting in Bangladesh

The issue of environmental protection has not been taken into careful consideration in case of achieving industrial growth since the independence of Bangladesh (Nath, 2012). As a result, industrial pollution has become a major area of concern in Bangladesh. The public awareness towards environmental issues has grown tremendously in last two decades. Therefore, since the 1990s the Government of Bangladesh (GoB) has started to pay serious attention to the environment, in response to the increased public pressure and environmental degradation due to industrial activities (Ahmad, 2012).

Consequently, the 1990's decade marks the beginning of the history of environmental policy in Bangladesh. The developments taking place during this decade gave a new direction to the policy concerns in the field of environment protection. In the following Five Year Plan (Fourth Five Year Plan [1990-95]) emphasized on environmentally desirable integrated development for the first time. The policy perspectives were also reflected in the subsequent five year plans of the country. The Fourth Five Year Plan introduced a chapter for the first time on "Environment and Sustainable Development". It identified number of important factors which would affect environment in now and near future (Hossan, 2014).

The environmental activities in Bangladesh were organized by the Department of Public Health Engineering (DPHE) through the Water Pollution Control Ordinance of 1973. Municipal bodies in different towns were also involved in some environmental management activities. The promulgation of Environment Pollution Control Ordinance, 1974 and creation of the Department of Environment Pollution Control (DEPC) were significant steps in environmental promotion in this country. In the Fourth Five Year Plan, environmental aspects have been considered directly on many sectors of plan owning, probably, to growing global environmental concern. The Fourth Five Year Plan identified environmental degradation as serious constraint for achieving the development goal. Therefore, in order to promote environmental consciousness and arrest degradation, the following measures have been undertaken:

A National Environment Policy was finalized in 1992 as a guide to long term sustainable environment friendly development (Ahmad, 2012). The environment policy 1992 outlined the following objectives:

- 1) Preservation and improvement of ecological balance;
- 2) Identifying and controlling all environment polluting and degrading activities;
- 3) Minimizing the impact of natural disaster on environment;
- 4) Ensuring environment friendly development in all sectors;
- 5) Ensuring long term sustainable/ environmentally sound utilization of natural resources; and
- 6) Active promotion and participation in all international initiatives for the improvement of global/regional environment.

To achieve these objectives in the long-run, the Environment Policy 1992 identifies possible remedial measures to be taken up by the concerned Ministries/Agencies:

- a) The government has attached high priority to environmental promotion, protection and preservation. This has been highlighted in national and international forum;
- b) A separate Ministry of Environment and Forests and Department of Environment (DoE) have been established;
- c) The year 1990 was observed as “Year of Environment” and the nineties have been identified as “The Decade of Environment”;
- d) Environmental concerns have duly been recognized by the development planners and decision-makers. This has been reflected through inclusion of environmental issues in all development projects (Hossan, 2014).

Moreover, Government of Bangladesh (GoB) has enacted very important laws regarding environment, such as the Bangladesh Environment Conservation Act, 1995 (hereafter the Act), the Environment Conservation Rules, 1997, Bangladesh

Environment Court Act 2000. It is notable that Environmental laws in Bangladesh are based on the guiding principles stated in the “Bangladesh Environmental Policy 1992”. And the Department of Environment (DoE) under the Ministry of Environment and Forest is responsible for the implementation of the environmental laws in Bangladesh. Under the Act, companies may be asked to disclose environmental information as and when required. Moreover, the Act, requires, environmental clearance from the Ministry of Environment and Forest before the establishment of a new industrial plant. Section 12 of the Bangladesh Environment Conservation Act 1995, states that no industrial unit or project can be established or undertaken without obtaining an Environmental Clearance Certificate (ECC) from the Ministry of Environment. The ECC ensures that the industry or the project meets all the prescribed standards in terms of the quality standards of air, water, noise and other environmental components set by the Government of Bangladesh (Ahmad, 2012). Besides the Act, has provision for Environmental Impact Assessment (EIA) for Industrial or infrastructure projects. Another important strategic response of GoB to environmental protection is the National Environmental Management Action Plan, 1995.

In addition, the Constitution of People’s Republic of Bangladesh (15th amendment) preserves a special Article (18 A) which is related to the commitment of the State towards sustainable development. According to the Article 18 A of the Constitution of Bangladesh “the State shall endeavour to protect and improve the environment and to preserve and safeguard the natural resources, bio-diversity, wetlands, forests and wild life for the present and future cetizens”.

Bangladesh Labour Act, 2006 (Amendment) Bill 2013

The recent amendments made in the Labour Laws 2006 have important implications for the workforce engaged in the manufacturing sector. Bangladesh Labor Law (Amendment) Bill 2013 was passed on 15 July, 2013 in the National Parliament. Out of 354 sections of the labor laws 2006, government has amended 87 sections to accommodate the emerging needs of the labour deprivations including the right to unite and join in Trade Union.

The amendment incorporates some provisions including allowing formation of trade unions without informing the factory owners.

Other provisions including resolution of conflicts over legal financial rights through arbitration, ensuring safety measures for workers at their workplaces, mandatory election for workers' participation committees and introducing compulsory group insurance policies have also been included in the new law. Besides, the law also includes provisions for formation of a central fund to improve living standards of workers, depositing a 5.0 per cent net profit of companies with different workers' welfare and provident funds.

According to the amendment, employees would no longer need approval from factory owners to form trade unions. Now, workers would just need to apply to the Labor Directorate for authorization. The amendment also allows trade unions to be formed in different administrative wings of a factory, which was not permitted under the existing law. Some ILO conditions have also been included in the law. Inspection of a factory has been made mandatory at the time of giving license to any factory or its renewal. If any worker dies after two years in service, the management of the industries will have to pay compensation equivalent to one month's salary. And, if a worker dies in an accident during service, his relatives will be given a compensation equivalent to 45 days' salary. If an owner sacks a worker who has served for more than a year at the factory, he/she will be entitled to 15 days' salary for every year of service.

A permanent health center would be established if there are 5,000 workers or more who are employed and a welfare officer should be employed and a safety committee to be established in the factories that employ 500 workers or more.

It said that to identify any misconduct of a labor, there will be a committee comprising the same number of representatives from the owner's and labor's sides. Under a provision of the bill, the owner of an industrial unit will provide office and its furniture for the collective bargaining agent (CBA) of the industry. The law has brought outsourcing (subcontracting) under registration to improve management of companies and prevent exploitation of the workers.

Group insurance of the workers has been made mandatory for companies with minimum 100 workers. The amended bill provides that in case of the death of a worker the employer will realize the insurance claim from the insurance company and handover the money directly to the dependent of the deceased worker. In case of voluntary retirement or termination with minimum 10 years of service, a worker will be entitled to one month's basic salary for each year of service. But she/he would get one and half month's basic salary for each year in case of more than 12 years of service. There is a provision in the bill to keep consistency between the structural design and outlay of a factory while Welfare Fund will have to be constituted for the workers of the export-oriented companies (RISE, 2014).

Regulatory and Institutional Frameworks for Corporate Disclosures

The current regulatory and institutional frameworks, which influence the corporate disclosure practices, comprised a set of rules, regulations and some institutions. These include the Companies Act, 1994, the Insurance Act, 1938, the Bank Company (amendment) Act 2013, the Income Tax Ordinance, 1984, the Securities and Exchange Ordinance, 1969, the Securities and Exchange Commission Act 1993, the Bangladesh Chartered Accountants Order, 1973, the listing rules of stock exchanges and the various statutes creating the public enterprises (Belal,2001).

The four important institutions which play significant roles in implementing the above regulations are:

- a. the Bangladesh Securities and Exchange Commission (BSEC);
- b. the Dhaka Stock Exchange (DSE) Limited;
- c. the Chittagong Stock Exchange Limited; and
- d. the Institute of Chartered Accountants of Bangladesh (ICAB).

All the above mentioned regulations do not prescribe any periodical mandatory periodical environmental disclosures by the companies (Ahmad, 2012). Thus, the current regulatory and institutional frameworks largely failed to reflect the perceived needs of modern times. A major reform has been undertaken to rationalize and update the laws. As part of that reform project the Companies Act,

1913 was updated in 1994 and the SEC has been established in 1993 to regulate the re-activated capital market of Bangladesh (Belal, 2001).

3.4 Financial Reporting Standards Related to Environmental Reporting

Corporate financial reporting is governed by a set of accounting standards. Several standard-setting organizations have been working for developing accounting and reporting standards that ensure the full and fair disclosure of corporate performance related information, as well as harmonize the accounting and reporting practices both at national and international level. Such as:

- The International Accounting Standard Committee (IASC) which is replaced by the international Accounting Standard Board (IASB) in 2006.
- USA based the Financial Accounting Standard Board (FASB).
- The American Institute of Certified Public Accountants (AICPA)
- The American Society for Testing and Material (ASTM) and
- International Financial Reporting Interpretations Committee (IFRIC)

The International Accounting Standards Committee (IASC), one of the most important standard-setting organizations which was established in 1973 in London was replaced by the International Accounting Standards Boards (IASB) in 2001. During its existence, the IASC issued 41 standards, known as International Accounting Standards (IAS) and IASB started pronouncement of accounting standards in the name of International Financial Reporting Standards (IFRS). The IASB issued 15 IFRS by April.2014. Most of the European Countries made it mandatory for application in the financial reporting of 2005 and onwards.

The Institute of chartered Accountant of Bangladesh (ICAB), the National Standard-setting body and regulator of the accountancy profession of Bangladesh adopts IAS and IFRS in the name of BAS and BFRS respectively. ICAB adopted 40 IAS out of 41 and 12 IFRS out of 15 by December, 31, 2010 (ICAB, 2014).

Various studies analyzed all the IAS/IFRS and IFRIC interpretations to identify instruments for the reorganization, measurement and disclosure of environmental issues. The researchers showed that no international standard is exclusively dedicated to environmental information, but environmental issues are mentioned in several standards and interpretations. They directly or indirectly deal with the reorganization, measurement and disclosure of environmental expenses, assets and liabilities (Enahoro, 2009; Uwalomwa, 2011 and Biswas & Rahman, 2012). They also identified a number of existing standards and interpretations which are closely relevant with environmental issues. The content of these standards (IAS/IFRS) and interpretations (IFRIC) are as follows:

IAS–1 Presentation of Financial Statements

Financial statements are the structured representation of the financial position and financial performance of the organization. Their objective is to provide information about the financial position, financial performance and cash flows of an entity that is useful to a wide range of users in making economic decisions. IAS–I prescribes the basis for presentation of complete general purpose financial statements that provide the real picture of the organization's financial performance and position. For this reason, financial statements provide environmental assets, environmental liabilities and environmental expenses related information along with other relevant information.

IAS 2 Inventories

IAS 2 is relevant for highly polluting industries, such as mining to recognize their waste as assets with a residual value. This standard requires such waste to be recognized as inventories only if additional costs were to be incurred to convert the waste products into marketable goods.

IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors

IAS 8 prescribes the criteria for selecting and changing accounting policies, together with the accounting treatment and disclosure of changes in accounting policies, changes in accounting estimates and corrections of errors. The standard doesn't contain a direct mention of environmental elements but these

prescriptions are applied, for example, when the company changes the estimates of environmental provisions or corrects its material errors in accounting of environmental costs and liabilities.

IAS 16 Property, Plant and Equipment

This standard indicates that some fixed assets may be acquired for safety or environmental reasons. The acquisition of such elements, even in the absence of future economic benefits, may be necessary for the uncompromised use of other operating fixed assets. In this case, it is clear that the acquisition of environmental assets is outside the scope of the general definition of an asset. This derogation is based on the fact that future economic benefits may be compromised in the absence of certain environmental assets, even though the latter are only accessories to the main operation. IAS 16 also requires the incorporation of future dismantling and decommissioning costs into the value of the fixed asset. These costs are estimated at the beginning of the asset's useful life, and are assimilated to a provision in compliance with IAS 37. Future expenses with dismantling and site restoration may also be derived as a consequence of the continuous use of an asset whose environmental impact is not negligible. However, Price Water house Coopers (2004) considers that, whenever environmental degradation is outside the industrial parameters for the use of a certain asset, the supplementary expenses should be incurred immediately.

IAS 20 Accounting for Government Grants

IAS 20 contains an implicit reference to the initial distribution of emission rights and their recognition in the financial statements.

Government grants including non-monetary grants at fair value shall not be recognized until there is reasonable assurance that:

- (a) The entity will comply with the conditions attaching to them; and
- (b) The grants will be received.

Once a government grant is recognized any related contingent liability or contingent asset is treated in accordance with IAS 37 Provisions. Contingent Liabilities and Contingent Assets There are two broad approaches to the accounting for government grants: the capital approach under which a grant is recognized outside profit or loss and the income approach under which a grant is recognized in profit or loss over one or more periods.

IAS 32, IAS 39, IFRS 7 and IFRS 9 on financial Instruments

These standards are linked to the present and future risks emerging in such cases as hedge accounting, the measurement of environmental derivatives, and the treatment of other financial elements occurring as a result of environmental impacts.

IAS 36, Impairment of Assets

IAS 36 can be applied whenever a company's environmental assets are suffering impairment, either as consequence of a contamination, physical accident, lose of contractual rights or depletion of mineral resources.

IAS 37 Provisions, Contingent Liabilities and Contingent Assets

IAS 37 presents several details on the recognition and measurement of provisions and contingent liabilities and contingent assets. A provision is a liability whose value and date of payment are uncertain and which is recognized whenever: (a) the company has a current obligation(e.g. of an environmental nature) from a past event; (b) an outflow of future economic benefits is to be expected in this circumstance; and (c) a good estimate can be provided for this obligation. Unlike ordinary liabilities, the standard defines a constructive obligation as an uncertain liability imposing the recognition of a provision. For example, a company conducts its extractive operations in a country with no environmental legislation. However, the company has published its environmental policy, which states that any remediation expenses arising from polluting activities will be supported by the firm. In case such incidents occur, the company has a constructive obligation and an implicit provision for the best estimate of these future expenses. A contingent liability is: (a) a possible obligation that arises from past events and whose existence will be confirmed only by the

occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the entity; or (b) a present obligation that arises from past events but is not recognized because: (i) it is not probable that an outflow of resources embodying economic benefits will be required to settle the obligation; or (ii) the amount of the obligation cannot be measured with sufficient reliability. For example, when a lawsuit or other legal measure has been taken against the company, environmental cleanup and protection responsibility generate a contingent liability if the monetary impact of new regulations or penalties on the company is uncertain. An entity should not recognize contingent liabilities in the financial statements but should disclose them, unless the possibility of an outflow of economic resources is remote.

IAS 38 Intangible Assets

This standard is linked to the recognition and measurement of environmental assets such as development expenses or emission rights, either received as a subsidy or acquired from the market.

IAS 41, Agriculture

IAS 41 prescribes the accounting treatment financial statement presentation and disclosures related to agricultural activity. And any related matter not covered in other Standards. Agricultural activity is the management by an entity of the biological transformation of living animals or plants (biological assets) for sale into agricultural produce or into additional biological assets.

This is a specialized standard with no mention of environmental elements, but targeting a sector with a highly sensitive environmental profile.

IFRS 6, Exploration for and Evaluation of Mineral Resources

IAS 6 is linked to extractive activities, which are widely acknowledged as environmentally-sensitive. The standard is a guide to the recognition of exploration expenses, including the recognition of mineral resources as assets. It also imposes the recognition of any dismantling and relocation obligations as a result of the exploration of mineral resources.

IFRS 8 Operating Segments

This standard establishes certain disclosure elements to be provided in the annual reports of large companies. Diversified firms sometimes own an operating segment having a clear connection with environmental services and environmental protection, such as clean energy, urban services, decontamination services, recycling, green technologies, etc.

Interpretations

IFRIC 1 Changes in Existing Decommissioning, Restoration and Similar Liabilities

It presents several details on the recognition and measurement of liabilities generated by decommissioning and dismantling activities, such as the closure of a chemical plant, the restoration of sites after extractive activities or the removal of heavy equipment.

IFRIC 3 Emission Rights

IFRIC 3 provides that a cap-and-trade scheme gives rise to three elements: an asset for the allowances held a government grant for the value of the allowances at the date of receipt, and a liability for the obligation to deliver allowances equal to emissions that have been made. Due to the pressure exerted by the business community and the disapproval from the European Commission, IASB decided to withdraw IFRIC 3 in 2005. Considering that no new interpretation has been issued, there cognition of emission quotas has remained a controversial problem. Adopting the methods applicable under US GAAP is a viable solution, as IAS 8 allows use of accounting policies from other standard-setters if no specific international standard exists.

IFRIC 5 Rights to Interests Arising from Decommissioning, Restoration and Environmental Funds

This interpretation discusses the integration into the accounting process of all these rights. The purpose of decommissioning, restoration and environmental rehabilitation funds is to segregate assets to fund some or all of the costs of plant decommissioning (such as a nuclear plant) or certain equipment (such as cars), or in undertaking environmental rehabilitation (such as rectifying pollution of water or restoring mine land).

IFRIC 6 Liabilities Arising from Participating in a Specific Market – Waste Electrical and Electronic Equipment

IFRIC 6 clarifies when certain producers of electrical goods are required to recognize a liability under IAS 37 for the cost of waste management relating to the decommissioning of waste electrical and electronic equipment supplied to private households.

3.5 The Global Reporting Initiative (GRI)

The Global Reporting Initiative (GRI) is a non-profit multi stakeholder organization whose mission is to develop and disseminate globally applicable sustainability reporting guidelines. The GRI was established in Boston, USA in 1997 by the Coalition for Environmentally Responsible Economics (CERES), in partnership with the United Nations Environment Programme (UNEP). The initiative engaged many actors such as NGOs, consultants, business associations, corporations, banks, professional accountants, universities and other stakeholders around the world (GRI, 2000). The main goal of GRI is to harmonize the sustainability reporting practices by providing a common guidance for companies worldwide and maintaining ongoing discussions on sustainability topics. Even though compliance with the guidelines is voluntary, the GRI's detailed framework is intended to create an analogy to the generally accepted accounting principles approach to financial reporting. In other words, GRI's aim is to develop a voluntary reporting framework that will raise sustainability reporting practices to the same level as financial reporting in comparability, and general acceptance (GRI, 2006)).

There were three underlying assumption that arose when GRI was initiated. Firstly, the increase of information in societies provoked the demand for accountability from the business and this resulted in the establishment of different forms of engagement. Secondly, progressive companies can be benefited from this framework in preparing sustainability reporting and therefore in enhancing transparency, responsibility and accountability. And Third, GRI developed idea for multi-stakeholder partnership which was seen as “an effective form of collective governance for sustainability’s. Over the last ten years, there has been a significant increase in the level of participations in GRI sustainability reporting (GRI, 2013).

3.5.1 The GRI Guidelines

The reporting material of GRI is titled as “Sustainability Reporting Framework”. In addition to reporting guidelines, the framework includes areas such as technical protocol and instructions for developing a report. The guidelines are published in the form of a hand book and publicity available on GRI webpage. GRI guidelines were first presented as an Exposure Draft for comment and pilot testing in 1999 (GRI, 2000). The work has gone on and the GRI guidelines have assumed a dominant position in the field of environmental reporting. Revised guidelines were issued in June, 2000. The 2002 version of the Guidelines was the result of two years testing and revision. These include instructions on defining the relevant content and a form in which the report should be structured (GRI, 2002).

The third generation of GRI guidelines known as G3 was first published in 2006 and updated version G3.1 in 2011. The G3.1 included reporting guidelines for matters such as local community impact and human rights which are also complemented by sector specific to the needs of the sectors such as tourism, finance, telecommunications, mining, logistics, apparel and the public service. The G3.1 guidelines are the most comprehensive sustainability reporting guidance G3.1 includes three types of standard disclosures, which should be included in sustainability reports, such as strategy and profile, management approach and performance indicators. The performance indicators of GRI guidelines are categorized under the three pillars of sustainability such as economic, environmental and social indicators. There are thirty items included in the environmental indicators, which are classified into nine categories (GRI, 2006).

The latest version of GRI Sustainability Reporting Guidelines is known as G4 launched in May 2013. G4 is the part of GRI guidelines’ continuous development, which is influenced by the changes in the reporting field. GRI believes that G4 will improve sustainability guidelines by making it more focused and relevant to the report users. G4 guidelines will be effective by 2015 (GRI, 2013).

Various studies have adopted the GRI guidelines and considered it as the highest standard and useful initiative for social and environmental reporting (Yuan, 2007; Peng, 2009). Hence, the GRI has maintained significant authority in Environmental Reporting.

In this study, some social and environmental indicators of GRI G3 guidelines are adopted by modifying with a view point of developing countries like Bangladesh, because latest versions of GRI guidelines (G3.1 and G4) could not cover our study period (2009-2013). The study does not consider the economic indicators of G3 guidelines, because economic reporting is already well established through standardized financial reporting system.

3.6 The International Organization for Standardization (ISO)

The International Organization for Standardization (ISO) is an independent, non-governmental membership organization. It is a network of national standard setting bodies and the world's largest developer of voluntary International Standards. It has a membership of 163 national standards institutes from countries large and small, industrialized and developing, in all regions of the world (ISO, 2013). ISO members are the foremost national standard setting organizations in the relevant countries and there is only one member per country. Each member represents ISO in its country (ISO, 2006)

The ISO story began in 1946 when delegates from 25 countries met at the Institute of Civil Engineers in London and decided to create a new international organization 'to facilitate the international coordination and amalgamation of industrial standards. In February 1947, the new organization, ISO, officially began operations, with a Central Secretariat that is based in Geneva, Switzerland. Till date, ISO has published over 19 500 International Standards covering almost all aspects of technology and manufacturing (<http://www.iso.org/iso/home/about.html>).

3.6.1 ISO and the Environment

ISO provides voluntary standards that offer specific requirements and principles for environmental management. ISO International Standards as a whole constitute a toolbox for economic growth, the environmental integrity of the planet and societal equity-in other words, for all three dimensions of sustainable development, ISO standards help organizations to take a proactive approach to managing environmental issues in various ways. They also serve in a number of countries as the technical basis for environmental regulation (ISO, 2006).

ISO 14000 Series and Environmental Management

ISO 14000 is a family of standards related to environmental management. ISO introduced this series of standards to create a framework for systematic standardized environmental management and reporting practices among organizations (Uwalomwa, 2011).

The ISO 14000 family addresses various aspects of environmental management. It provides practical tools for companies and organizations looking to identify and control their environmental impact and constantly improve their environmental performance. Though ISO 14000 series is based on a voluntary approach to environmental regulations, it helps organizations to comply with applicable laws, regulations, and other environmentally oriented requirements. The ISO 14000 series concentrates not only on environmental aspects of an organization's processes but also on its products and services. The major objective of the ISO 14000 series of norms is "to promote more effective and efficient environmental management in organizations and to provide useful and usable tools--ones that are cost-effective, system-based, [and] flexible, and reflect the best organizations and the best organizational practices available for gathering, interpreting, and reporting environmentally relevant information" (http://en.wikipedia.org/wiki/ISO_14000).

The whole ISO 14000 family of standards provides management tools for organizations to manage their environmental aspects and assess their environmental performance. Together, these tools can provide significant tangible economic benefits, including the following;

- Reduced raw material/resource use
- Reduced energy consumption
- Improved process efficiency
- Reduced waste generation and disposal costs
- Utilization of recoverable resources (ISO, 2006).

Obviously, associated with each of these economic benefits are distinct environmental benefits too. Conformity to ISO Standards helps in reassuring consumers that products are safe, efficient and good for the environment. The ISO 14000 family of standards reflects international consensus on good environmental and business practice that can be applied by organizations all over the world in their specific context (Uwalomwa, 2011). Consequently, ISO flagship standards retain their global relevance for organizations wishing to operate in an environmentally sustainable manner. At the end of December 2013, more than 1 564 448 certificates had been issued on various ISO standards around the world (ISO, 2013). ISO 14004 series states that an organization can communicate environmental information in a variety of ways, such as;

1. Externally, through an annual report, regulatory, and government records, industry association publications, the media, and paid advertising.
2. Internally, through bulletin board postings, internal newspapers, meeting and electronic mail messages (ISO, 2009)

Origins of ISO 14000 Series

In 1993, ISO formed a Technical Committee named ISO/TC 207 (Environmental management), to develop international environmental standards, as a result of ISO's commitment to respond to the complex challenge of 'sustainable development' that articulated at the United Nations Conference on Environment and Development of 1992 in Rio de Janeiro, Brazil (ISO, 2004). It also stemmed from an intensive consultation process, carried out within the framework of the ISO Strategic Advisory Group on Environment (SAGE). ISO/TC 207 is responsible for developing and maintaining the ISO 14000 family of standards. Membership of ISO/TC 207 is both broad and diverse in representation. National delegations of environmental experts from over 100 countries participate in ISO/TC 207, including 27 developing countries. The leadership of the committee is 'twinned' between a developed and developing country. It is important to note here that ISO/TC 207 has relationships with over 30 international organizations that serve as liaison members to the technical committee (ISO, 2006).

ISO 14000 Family of Standards

ISO 14000 family's current portfolio consists of 21 published International Standards and other types of normative document, with another nine new or revised documents in preparation. Although the ISO 14000 standards are designed to be mutually supportive, they can also be used independently of each other to achieve environmental goals (ISO, 2007). The important standards of ISO 14000 series are set out in Table 3.1 below.

Table 3.1: The ISO 14000 Family of Standards

Designation	Date of Publication	Title
ISO 14001	1996	Environmental management systems – specification with guidance for use.
ISO14004	1996	Environmental management systems – general guidelines on principles, systems and supporting techniques.
ISO 14010	1996	Guidelines for environmental auditing – general principles.
ISO 14011	1996	Guidelines for environmental auditing – audit procedures –auditing of environmental management systems.
ISO 14012	1996	Guidelines for environmental auditing – qualification criteria for environmental auditor
ISO 14015	2001	Environmental management– environmental assessment of sites and organizations (EASO).
ISO 14020	2000	Environmental labels and declarations – general principles.
ISO 14021	1999	Environmental labels and declarations – self-declared environmental claims (Type II environmental labelling).
ISO 14024	1999	Environmental labels and declarations – Type I environmental labelling – principles and procedures.
ISO 14025	2000	Environmental labels and declarations – Type III environmental declarations.
ISO 14031	1999	Environmental management– environmental performance evaluation – guidelines.
ISO 14032	1999	Environmental management – examples of environmental performance evaluation.
ISO 14040	1997	Environmental management – life-cycle assessment – principles and framework.
ISO 14041	1998	Environmental management – life-cycle assessment – goal and scope definition and inventory analysis.
ISO 14042	2000	Environmental management – life-cycle assessment – life-cycle impact assessment.
ISO 14043	2000	Environmental management – life-cycle assessment – life-cycle interpretation.

ISO 14047	To be Determined	Environmental management – life-cycle assessment – examples of application of ISO 14042.
ISO 14048	2002	Environmental management – life-cycle assessment – data documentation format.
ISO 14049	2000	Environmental management – life-cycle assessment – examples of application of ISO 14011 to goal and scope definition and inventory analysis.
ISO 14050	2002	Environmental management – vocabulary.
ISO 14061	1998	Information to assist forestry organizations in the use of the environmental management system standards ISO 14001 and ISO 14004.
ISO 14062	2002	Environmental management – environmental communications– guidelines and examples.
ISO/WD 14063	To be determined	Guidelines for measuring, reporting and verifying entity project-level greenhouse gas emissions.
ISO/WD 14064	To be determined	Guidelines for the inclusion of environmental aspects in product standards.
ISO 19011	2002	Guidelines for quality and/or environmental management systems audit (this standard was replaced by ISO 14010; 14011 and 14012)
ISO Guide 64	1997	Guide for the inclusion of environmental aspects in product Standards
ISO/IEC Guide 66	1999	General requirements for bodies operating assessment and certification/registration of environmental management systems (EMS).
ISO 14064 parts 1, 2 and 3)	1999	International greenhouse gas (GHG) accounting and verification standards.
ISO/ IEC Guide 66	1999	General requirements for bodies operating assessment and certification/registration of environmental management systems (EMS).

Source: International Standards Organization (2006).

3.6.2 ISO 14001 (Environmental Management Systems)

In 1996, ISO launches an important environmental standard designated ISO 14001 (environmental management system) to provide tools for organizations for helping them in identifying and controlling their environmental impact. It is till date one of the most well known and widely used specification standards in environmental management systems. ISO 14001 sets out the criteria for an environmental management system and can be certified to. It does not state requirements for environmental performance, but maps out a framework that a company or organization can follow to set up an effective environmental management system. It can be used by any organization regardless of its activity, size or sector. Using ISO 14001 can provide assurance to company management

and employees as well as external stakeholders that environmental impact is being measured and improved. ISO 14001 was developed primarily to assist companies with a framework for better management control that can result in reducing their environmental impacts. This in turn can have a positive impact on a company's asset value (ISO, 2007). It is important to note that all ISO standards are reviewed by ISO in every five years to ensure that they still meet market requirements (ISO, 2013).

ISO 14001 provides multidimensional opportunities to the organizations in establishing effective environmental management system. That is why ISO 14001 retains its global relevance for organizations wishing to operate in an environmentally sustainable manner. The standard ISO 14001 has been adopted as a national standard by more than half of the 163 national members of ISO and its use is encouraged by governments around the world (http://en.wikipedia.org/wiki/ISO_14000).

3.6.3 ISO 14031 (Environmental Management– Environmental Performance Evaluation – Guidelines)

In 1999, ISO launched its Environmental management—Environmental performance evaluation—Guidelines (ISO 14031). This standard was last reviewed in 2013 (<http://www.iso.org>). ISO 14031:2013 provides guidance on the design and use of environmental performance evaluation (EPE) within an organization. The standard (ISO 14031) can be used as a basis for internal and external environmental reporting of the organizations. It is applicable to all organizations, regardless of type, size, location and complexity (ISO, 2007). Certain concepts and components of ISO 14031 have been applied for more than a decade. This is based on the assumption, that “*what gets measured gets managed*” (ISO, 2006). It has been used globally by organizations in the manufacturing, mining industries, agricultural industries, health services, oil and gas, transportation, municipal sectors etc, to improve environmental performance, provide a basis for performance benchmarking, and demonstrate compliance to regulations and increase operational efficiency. It has been defined as a formal process of measuring, analyzing, reporting and communicating an organization's environmental performance against criteria set by its management (Uwalomwa, 2011).

ISO 14031 now provides a structured approach for better understanding of an organization's impacts on the environment, providing a basis for benchmarking management, operational and environmental performance, identifying opportunities for improving efficiency of energy and resource usage, determining whether environmental objectives and targets are being met, demonstrating compliance with regulations, determining proper allocation of resources, increasing the awareness of employees, and improving community and customer relations (ISO, 2006).

The standard ISO 14031 also addresses the selection of suitable performance indicators, so that environmental performance can be assessed against criteria set by management (ISO, 2004). Uwalomwa (2011) opined that the use of performance indicators will help organizations to measure, manage, communicate, and report (disclose) their impacts on the environment and other aspects of sustainability. These performance indicators assist business and other organizations in meeting defined targets and to provide a link between environmental performance and financial performance. Disclosure on the environmental aspects of products and services is an important way to use market forces to influence environmental improvement. The standard (ISO 14031) can be used as a basis for internal and external environmental reporting of the organizations. ISO 14031 supports the requirements in ISO 14001 and the guidance in ISO 14004, but it may also be used independently (ISO, 2006). Moreover, ISO 14031 has provided a strong guidance to the environmental reporting system, and maintained significant authority in Environmental Reporting research (Uwalomwa, 2011).

3.6.4 ISO Certified Organizations

While the accountability of the corporate organizations in attaining sustainable development have been gaining considerable public attention, a growing number of companies are now steered to implement various international environmental management standards, like ISO standards (ISO, 2006). ISO Standards for business, government and society as a whole make a positive contribution to the world we live in. They ensure the vital features such as quality, ecology, safety, economy, reliability, compatibility, conformity, efficiency and effectiveness. They

facilitate trade, spread knowledge, and technological advances and good management practices (ISO, 2007). Therefore, ISO flagship standards are holding up well around the world. At the end of 2013, ISO conducted its Survey of Certifications. This was an annual study that showing the number of certificates issued to its seven management system standards in the year. The survey revealed that up to the end of December 2013, more than 1 564 448 certificates had been issued on various ISO standards around the world (ISO, 2013). The survey also revealed that the Asian market still leads the way this year, dominated by China and, to a lesser extent, Japan, while Europe comes a close second, headed predominantly by Italy and Germany. As Asia's largest economy, China remains faithful to established ISO management system standards, topping the league for numbers of certificates issued to ISO 9001 and ISO 14001. The survey also shows that up to the end of December 2013, at least 301 647 ISO 14001:2004 certificates with a growth of 6% had been issued in 171 countries and economies, four more than in the previous year, (ISO, 2013). The top three countries for the total number of ISO 14001:2004 certificates issued were China, Italy and Japan. Within continent, Asia has been rated on top with containing 51% for the total number of ISO 14001:2004 certificates issued, followed by Europe (39%) and North America (4%).

Bangladesh Standards and Testing Institution (BSTI) is the only Govt. organization, which has started awarding Management System Certification in the country. BSTI has already taken a programme to operate Management System Certification against ISO 9001(Quality Management System), ISO 14000 (Environment Management System), ISO 22000 (Food Safety Management System) (ISO, 2006). So, it can be said that organizations operating around the world both within developed and developing countries now concentrate on ISO standards to improve their environmental performance.

3.6.5 Corporate Environmental Reporting Research in Line with ISO 14031.

The ISO 14031 has provided a strong guidance to the environmental reporting of the organizations. In addition, this standard (ISO 14031) is recognized by various researchers as useful to measure the extent of corporate environmental disclosures accurately. Consequently, various studies have adopted the ISO

14031 standard in both developed and developing countries for environmental reporting research and considered it is the highest standard and significant initiative for environmental reporting of organizations (Ulalomwa, 2011).

3.6.6 Justification for Taking ISO 14031 as Basis of our Research

Consistence with our research objectives, we emphasized on ISO 14031 guidelines in case of developing the disclosure index to determine the extent of environmental disclosure in the annual reports of the listed manufacturing companies in Bangladesh. There are several motives behind using the ISO 14031 guidelines are important to note. To begin with, the ISO 14031 has provided a strong guidance to the environmental reporting system, and maintained significant authority in Environmental Reporting research (Ulalomwa, 2011). Moreover, ISO 14031 is applicable to all organizations, regardless of type, size, location and complexity, above all it has global acceptance (ISO, 2007). Besides, ISO 14031 is considered widely used as an underlying framework for the coding structure of the content analysis of annual reports in both developed and developing countries context. Finally, ISO 14031 addresses various categories of performance indicators for Environmental performance evaluation (EPE) which are essentially significant for environmental reporting of the organizations both in developed and developing countries (ISO, 2006).

Langford (2007) opined that the use of performance indicators will help organizations to measure, manage, communicate, and report (disclose) their impacts of activities on the environment and other aspects of sustainability. ISO 14031 describes three categories of environmental performance indicators for selecting or categorizing environmental disclosure index, such as operational performance indicators, management performance indicators (MPI) and environmental condition indicators (ECIs). However, within each general category, the ISO 14031 also provides some specific aspects, such as material, water, energy, emissions to air and contribution to global warming, pollution of air, water and soil, effluent and waste, training and awareness, use of resources and recycling, biodiversity, environmental protection expenditure, impacts of products, services, environmental audit, human resource safety, community involvement and implementation of policy, objectives and targets, legal

compliance, product & service, employees and community etc (ISO, 1999). These environmental aspects and performance indicators are significantly relevant in the context of our study.

3.7 Theoretical Perspectives of Corporate Environmental Disclosures

The accounting literature contains a large number of competing, complementary and/or alternatives theories, both traditional and new, most of those have been sourced from other disciplines (Mobus, 2005). Various researchers categorized these theoretical perspectives in different way. Islam (2009) organized the theoretical perspectives of environmental accounting research into two broad theoretical groups, such as, positivist and normative. He also indicates that the positivist group includes agency theory, political cost theory, legitimacy theory, stakeholder theory and institutional theory, and the normative group primarily includes accountability theory and critical theory. Another useful categorization of theoretical perspectives of environmental accounting was provided by Gray et al., (1995b). They classified these theoretical perspectives into three major groups, such as, decision-usefulness studies, economic theory studies and political economy theories. Each theoretical group offers particular systematic assumptions, preconceptions and insights, and each has its limitations and critics (Islam, 2009).

Decision-usefulness studies in the environmental disclosure literature tend to fall into two broad categories being the decision-makers emphasis and the decision-models emphasis. The decision-makers emphasis focuses upon what users want and includes studies that ask participants to rank items in terms of their importance for instance, asking investors to rank the type of information they would like to include in the annual report in order of importance (Epstein & Freedman 1994). On the other hand, studies based on the decision-models emphasis attempt to determine whether environmental performance related information has an information value to financial markets or to participants (Blacconiere & Northcutt, 1997; Blacconiere & Patten, 1994).

On the other hand, economics-based theories include some of the positivist theories like the agency theory and the political cost theory. The institutional theory may be included either in the group of economic theories or in political

economy theories (Anderson & Frankle, 1980). The Economic agency theory sees the world strictly in terms of competing self-interest where all individuals seek to maximize personal economic wealth (Patten, 1992). Agency theory explains that organizations will take actions to maximize management and shareholder interests. Besides, political cost theory explains that organizations will take actions to reduce their political costs such as those relating to increased taxes and regulation (Watts & Zimmerman, 1978). Therefore, all of these theories seek to identify and predict the driving factors behind the organizational disclosure decisions (Deegan, 2009).

In view of the importance of environmental responsibility to the community, the use of economics-based theories within the environmental disclosure literature has been criticized (Gray et al., 1995b). They argued that corporations operate within an environment of many constituents, often with conflicting aims and objectives. So the focus on self-interest and wealth-maximization is inappropriate and offensive (Oliver, 1991).

Besides, political economy theories have largely superseded the use of economics-based theories in explaining the environmental reporting practices of corporations. As mentioned above, the economics-based theories focus on self-interest and wealth maximization as the sole or main objective of corporate environmental disclosure behaviour (Gray et al., 1995b). In contrast, political economy theories including stakeholder and legitimacy theory incorporate social, political and economic factors in the analyses of corporate annual report disclosures (Guthrie & Parker, 1990).

Deegan (2002) argued that political economy theories consider the political and social aspects of environmental disclosure behaviour along with the economic aspects. Consequently, political economy perspectives including stakeholder theory and, to a greater extent, legitimacy theory have emerged as the dominant theoretical perspectives in the environmental reporting literature (Milne & Patten, 2002; O'Donovan, 2002; O'Dwyer, 2002; Brown & Deegan, 1998; Tilt 1994; Patten, 1992; Roberts, 1992). The institutional theory can also be considered as political economy theory (Milne & Patten, 2002). Gray et al. (1995b) argued that legitimacy theory and stakeholder theory should be seen as overlapping perspectives.

The normative theories provide insights into the contributions towards effecting change in corporate environmental accountability practices. While positivist theories tend to ignore concepts of accountability and transparency, the normative theories, such as, accountability and critical theories accept these concepts (Deegan, 2002). Accountability theory suggests that an organization has a duty to provide an account of the actions for which it is held responsible (Deegan & Rankin, 1996). In this regard, critical theory suggests that organizational actions should play an essential role in reducing social disparity and unfairness (Lindblom, 1994).

Both accountability theory and critical theory consider environmental reporting practices as a moral dialogue to satisfy a larger range of accountability relationships. However, as these theories seek to prescribe how accounting should be practiced (or perhaps, should not be practiced), they can not be empirically tested (Deegan, 2009). However, the researchers acknowledged accountability and critical theory in terms of their significant contribution to the environmental accounting literature.

Taking into consideration the objectives of this research (as described in Chapter 1) and the limitations and features of the existing theories, present study considers stakeholder theory and legitimacy theory as the most useful theoretical frameworks to explain the environmental reporting practices of listed manufacturing companies in Bangladesh. Further discussions of these theories are provided in the following sections.

3.7.1 The Origins of the Theories that Underpinning this Thesis

The present study uses two complementary theories: legitimacy theory and stakeholder theory. These two theories have been derived from a similar philosophical background of 'political economy' (Gray et al., 1996b).

3.7.2 Political Economy Theory

Political economy is the social, political and economic framework within which human life takes place (Gray et al, 1995a). Political economy theories have largely superseded the use of economics-based theories in explaining the

environmental reporting practices of corporate organizations. Economics-based theories focus on self-interest and wealth maximization as the sole or main objective of corporate environmental reporting behavior. On the contrary, political economy theories incorporate social, political and economic factors in the analyses of corporate annual report disclosures (Guthrie & Parker, 1990). They also state that political economy theory does not focus solely on the economic self-interest and wealth-maximization of the individual or corporation. Instead, political economy theory suggests that the economic domain may not be studied in isolation from the political, social and institutional framework within which the economic takes place.

This perspective can be interpreted as that society, economics and politics are closely linked together, and economic issues can only be meaningfully explained when taking into account the political, social and institutional framework in which the economic event takes place. This therefore implies that, when considering political economy, a researcher is provided with an opportunity to consider the broader issues that influence organizational decisions on reporting practices. Several empirical studies have identified an increase of environmental annual report disclosures that correspond with periods where those issues peaked in importance politically and /or socially (Hogner, 1982).

As such, political economy theories seem to better explain why corporations appear to respond to government or public pressure for information about their environmental impact. The utility of political economy theory lies not only in its evaluation of environmental disclosures as a reaction to the existing demands of stakeholders, but also it recognizes accounting reports as social, political and economic documents (Guthrie & Parker, 1990). Therefore, political economy theory also recognizes the use of environmental disclosures in annual reports as a strategic tool in achieving organizational goals, and in manipulating the attitudes of external stakeholders.

Gray, Owen & Adams (1996a) duly classified the political economy theories into 'classical' and 'bourgeois' streams. The Classical political economy theory is linked to the works of Karl Marx. Gray et al. (1996a) state that classical political

economy theory clearly places-sectional (class) interests, structural conflict, inequity, and the role of the state at the heart of the analysis. Deegan (2000) describes the classical political economy theory as that which tends to perceives accounting reports and disclosures as a means of maintaining the favored position of those who control scarce resources (capital), and as a means of undermining the position of those without scarce capital. It focuses on the structural conflicts within society.

In real meaning, the classical variant of the political economy theory views corporate environmental reporting as part of an attempt to legitimize not only individual companies within the capitalist system but the system as a whole. In contrast, the Bourgeois political economy approach generally ignores sectional (class) interests, structural inequity, conflict and the role of the State and is content to perceive the world as essentially pluralistic (Deegan, 2000). The pluralistic view adopted by the bourgeois political economy theory ignores the existence of particularly powerful groups in society but tends to focus on the group interactions within society as a whole (Guthrie & parker, 1989). Proponents of the bourgeois variant of political economy theory argue that disclosure can only be explained in relation to the socio-political environment within which companies operate. Both legitimacy theory and stakeholder theory have derived from 'bourgeois' stream of political economy theory, while it has been argued that legitimacy theory and stakeholder theory should be seen as overlapping perspectives (Deegan, 2006). These two theoretical perspectives have been adopted by several academic researchers in recent years.

Legitimacy theory and stakeholder theory can be used to make clear the role of environmental reporting practices in the relationships between the organizations, the State, individuals and groups. *The key issue that has been recognized by these theories is that an organization is influenced by, and influences, the society in which it operates.* However, this chapter will provide brief discussions of these theories within the context of the political economy paradigm, starting with the introduction of the legitimacy theory.

3.7.2.1 Legitimacy Theory

Legitimacy theory has become one of the most widely utilized theories within the field of environmental accounting research. This theory, offers insights in describing and explaining the changing levels of environmental reporting behaviours of an organization (Magness, 2006; Mobus, 2005). Legitimacy theory introduces a view that the interrelationship between an organization and related social expectations is a fact of social life. Legitimacy theory explains how an organization wishing to maintain its 'license to operate' must comply with the expectations of the community in which it operates (Deegan, 2002). It is not a theory that is used to provide prescriptions regarding what management ought or should do. It appears to be the pre-eminent explanatory theory in this field (Mobus, 2005).

Traditionally, the notion of legitimacy was recognized in terms of economic performance only (Abbott & Monsen, 1979). However, community expectations have undergone dramatic changes in recent decades. Social expectations have shifted from profit maximization to a more environment -oriented focus (Heard Bolce, 1981). They opined that the society became increasingly aware of the adverse consequences of corporate growth. Now-a-days, legitimacy is not synonymous with economic success or legality, because economic success is just one facet of legitimacy and legality is theoretically an enforcer, not a creator, of changes in social values. The portrait of a successful organization is of one that reacts and attends to the environmental consequences of its practices (Heard and Bolce, 1981).

Legitimacy and changing social expectations are interrelated. Social expectations change because the community has long searched for the kind of society in which every human being is entitled to enjoy a decent life, and can access freedom, justice, equality, a pollution-free environment and a variety of other good things seen as proper to human existence (Islam, 2009).

Deegan and Rankin (1996) opined that social expectation no longer rests upon mere generation of profit but has broadened to include health and safety of employees and local communities as well as concern for the natural environment.

Therefore, organizations need to provide voluntary environmental information to meet the wide expectations of society relating to employee welfare, community and the treatment of the natural environment. Legitimacy is a condition or status which exists when an organization's value system is harmonious with the value system of the larger social system of which the organization is a part. Insofar as these two value systems are congruent we can speak of organizational legitimacy (Dowling & Pfeffer, 1975). According to Nasi, Nasi, Phillips & Zyglidopoulos (1997) it is a measure of the attitude of society toward a corporation and its activities, and it is a matter of degree ranging from highly legitimate to highly illegitimate. It is also important to point out that legitimacy is a social construct based on cultural norms for corporate behaviour. Suchman (1995) defined legitimacy as a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs and definitions.

Legitimacy theory has been derived from the political economy paradigm (Deegan, 2002). According to this theory, the survival of an organization is established both by market forces and community expectations, and hence an understanding of the broader concerns of society expressed in community expectations becomes a necessary precondition for an organization's survival.

Within legitimacy theory, 'legitimacy' is considered as a fundamental resource on which an organization is dependent for survival. Unlike many other 'resources', however, it is a 'resource' upon which an organization can be considered to impact or which it can manipulate through various disclosure-related strategies (O'Donovan, 2002).

There are certain actions and events can increase legitimacy whereas some decrease it. Organizations having low legitimacy will have potentially negative consequences "which eventually lead to the forfeiture of their right to operate" (Tilling, 2004). However, the amount of legitimacy is often very subjective. Hybels (1995) argued that good models in legitimacy theory must examine the relevant stakeholders. This is to ensure that how important the stakeholders influence the flow of business resources. Critical organizational stakeholders were identified by

Hybels (1995), such as the state, the public, the financial community and the media. The importance of each stakeholder is different across nations due to cultural differences. Therefore, under this approach, the organizations are assumed to be influenced by their continuing operations, as well as the society where they operate. Companies often try to manage legitimacy because it helps with the continued inflow of capital, labour and market reputation, and provides managers with a degree of autonomy to decide how and where business will be conducted (Neu, Warsame, & Pedwell, 1998).

According to Mathews (1993), legitimacy theory predicts a social contract between the organizations and the society in which they operate. Society provides corporations with their legal standing and attribute and the authority to own and use natural resources and to hire employees. Organizations draw on community resources and output both goods and services and dump waste products to the natural environment. According to legitimacy theory, organizations have no inherent rights to these benefits. Rather, organizations must earn the right to access them. Legitimacy and the right to operate are correlated, and in order to allow their existence; society would expect the benefits to exceed the costs to society (Islam, 2009). Organization must appear to consider the rights of the public at large, not just those of its investors.

Based on the concept derived from the social contract, an organization's survival may be threatened if society perceives that it has broken its social contract. Where the community is not satisfied that an organization is operating in an acceptable, or legitimate manner, then that community will effectively cancel the organization's 'contract' to continue its operations (Deegan, 2002). Thus, a legitimacy gap occurs when corporate performance does not match the expectations of relevant publics or stakeholders. Organizations need to closely monitor the changing social expectations and to adapt to them accordingly (Deegan & Unerman, 2011).

Legitimacy gaps may arise from two main sources. Firstly, social expectations may change, which can lead to a gap arising even though an organization may not have altered its practices. Secondly, legitimacy gap occurs when previously

unknown information about an organization becomes known through news media (Sethi, 1977). On the other hand, Scott, Ruef, Mendel & Caronna (2000).stated that an organization may not be deemed as legitimate if no efforts and accounts have been made when there are new legal and professional requirements by the authorities. Subsequently, legitimacy is different across nations (Islam, 2009)

Various researchers propose different types of legitimating strategies for the organizations that faced with a threat to their legitimacy. The legitimization techniques chosen will differ depending upon whether the organization is trying to gain or extend legitimacy, to maintain its current level of legitimacy, or to recover or to protect its lost or threatened legitimacy (O'Donovan, 2002). Lindblom (1993) suggest four broad legitimating strategies that organizations may adopt when faced with a threat to their legitimacy or a perceived legitimacy gap. They state that in order to restore, maintain or enhance organizational legitimacy an organization may:

- i. change its output, methods or goals to conform with the expectations of it relevant publics, and then inform these relevant publics of the change;
- ii. not change its output, methods or goals, but demonstrate the appropriateness of its output, methods or goals through education and information;
- iii. try to alter the perceptions of relevant publics by associating itself with symbols that have a high legitimate status; and
- iv. try to alter societal expectations by aligning them with the organization's output, goals or methods.

It may argue that, with the first approach, even though the organization may have already changed its activities in line with stakeholder expectations; it still may not have adequately addressed the legitimacy threat unless society is made aware of the actual change. The latter three methods also involve communication or disclosure. However, Lindblom (1994) state that environmental disclosures can be implemented for each of these tactics. So, it can be said that, organizations may still face legitimacy problems even when they will have complied with society's expectations but have failed to communicate or disclose the fact. In this

regard, Newson and Deegan (2002) state that legitimacy is assumed to be influenced by disclosure of information and not simply by (undisclosed) changes in corporate actions.

Deegan (2000) also indicates the notion that legitimacy is about disclosure. Moreover, a growing number of empirical studies have sought to link legitimacy theory to corporate environmental disclosure policies and found that corporate disclosure via annual reports takes place as a reaction to legitimacy threats (Patten, 1992; Hogner, 1982).

In addition, prior studies showed that the legitimacy theory is one of the earliest theoretical frameworks to have been used in environmental accounting discipline (Dowling & Pfeffer (1975). It has been used by several researchers to examine environmental reporting practices of the organizations. In many cases, environmental reporting practices have been considered as forming part of the portfolio of strategies employed to bring legitimacy or maintain the legitimacy of the organization (Campbell, 2000). However, there is no single generally and universally accepted empirical conclusion reached by such studies. Many researchers have found various evidences to support the use of the legitimacy theory to explain corporate environmental reporting practices (Deegan, 2002).

Conversely, many researchers raised questions regarding the eligibility of legitimacy theory for explaining the motivation behind corporate environmental reporting practices. Dowling and Pfeffer (1975) have considered this framework as a partially developed theory for explaining environmental disclosures. Cunningham (2004) argued that the existence of and size of legitimacy gap may be difficult to measure. Bebbington, Gonzalez & Moneva (2008) have proposed alternative theoretical explanations instead of legitimacy theory for explaining the motivation behind corporate environmental reporting practices. They opined that legitimacy theory is based on a bimodal conceptualization, while reputation theory refers to the relative standing of organizations to one another, therefore, reputation theory will likely to be more applicable in explaining the nature of environmental disclosures. According to Bebbington et al. (2008) disclosure of information regarding a negative environmental incidence firstly affects the

organization's reputation, and then on corporate legitimacy. On the other hand, Adams (2008) opposed and rejected the arguments of Bebbington et al. (2008) by stating that reputation theory offers nothing more than legitimacy theory. Adams (2008) further argued that legitimacy theory is more effective and potential than Bebbington et al's (2008) reputation theory, in terms of realizing environmental reporting practices of corporate organizations.

3.7.2.2 Stakeholder Theory

The basic proposition of the stakeholder theory is that firm's success is dependent upon the successful management of all the relationships that a firm has with its stakeholders. There are two branches of stakeholder theory: the normative or ethical branch and the managerial or positive branch (Deegan & Unerman, 2011). In realizing the basic notion of each branch, it is essential to understand the meaning of stakeholder.

Definitions of Stakeholder

The concept of stakeholder is one of the essential elements of stakeholder theory. The term stakeholder was first used in an internal memorandum at the Stanford Research Institute's (SRI) Long Range Planning Service in 1963, where it was being used by various individuals, including Marion Doscher, Ansoff and Rhenman who were working at SRI and at the planning department of Lockheed Inc, US (Freeman, 1984).

Freeman (1984) defines stakeholders as any identifiable group or individual who can affect the achievement of an organization's objectives, or is affected by the achievement of an organization's objectives. Freeman's (1984) definition of stakeholders was based on the concept of who can affect (i.e. help or harm) or be affected (i.e. helped or harmed) by the firm. According to Freeman (1984), organization must deal not only with those groups that can affect it, but also to be responsive to those who are affected by it in order to be effective in long term. Freeman's definition of stakeholders thus includes the most traditional groups (owners, customers, suppliers and financial community) as well as emerging stakeholder groups such as customer advocate group and environmental activists group. Other authors subsequently writing on the subject have defined

stakeholders similarly. Carroll (1993) defined stakeholders as “any individual or group who can affect or is affected by the actions, decisions, policies, practices, or goals of the organization”. Clarkson (1995) identify stakeholders as persons or group of persons that have, or claim ownership, rights or interests in a corporation and its activities of past, present and future. On the other hand, Mitchell, Agle & Wood (1997) argue that stakeholders “may or may not have legitimate claims”, but “may be able to affect or be affected by the firm nevertheless, and thus affect the interests of those who do have legitimate claims”

From the above definitions of stakeholder, it is clear that the meaning of stakeholder is very broad indeed, going beyond those that have purely formal or contractual relations to the organization. The definitions indicate that stakeholders not only can affect organizations, in some way, they can also be affected by organizations’ activities. The identification of stakeholders’ groups is obviously important for a successful organization. With this in mind, many researchers generally identify two classifications (primary stakeholders and secondary stakeholders) of an organization’s stakeholders, and there are numerous definitions which have been proposed for this purpose (Carroll, 1989; Clarkson, 1995; Freeman 1984).

Clarkson (1995) try to categorized stakeholders into primary and secondary groups. He states that primary stakeholders are those “groups that have, or claim, ownership, rights, or interests in a corporation and its activities, past, present, or future”. Clarkson (1995) also argues that continuous participation of primary stakeholder is necessarily essential for survival of the corporation. He has defined secondary stakeholders as those who influence or affect, or are influenced or affected by, the organization, but are not engaged in transactions with the organization and are not essential for its survival.

Clarkson’s classification of primary stakeholders would be similar to the stakeholder’s definition applied from a managerial perspective of stakeholder theory, however, this focus on primary stakeholders has been challenged by many researchers who working within the ethical branch of stakeholder theory (Islam, 2009)

3.7.2.2.1 Normative or Ethical Branch of Stakeholder Theory

Normative or Ethical branch of stakeholder theory resonates with equalizing power relations and enhancing democracy. This branch of stakeholder theory considers that all stakeholder groups have the right to be treated fairly by an organization, and management should consider the interest of all stakeholders when managing the organization. This theory promotes the notion of rights to information and the issues of stakeholders' power are not directly relevant in this case (Goodijk, 2003). In addition, normative researchers believe that stakeholder theory is useful as a theory of organizational ethics when it is supplemented by a theory of moral responsibility. The normative branch of stakeholder theory questions Friedman's (1970) proposition about the organizational objective of profit maximization and argues that this perspective has failed to recognize the groups affected by the organization's decisions (Freeman, 1999). Thus it differs from the agency theory in the sense that organizations have responsibilities to all stakeholders, including shareholders. According to this theory, an organization's responsibility to any particular stakeholder group should be determined by the organization's impact on its life experience, rather than the influential (economic) power the group itself has over the organization (Goodijk, 2003). According to this theory, the interest of one stakeholder (for example, a shareholder) should not be pursued at the expense of other stakeholders' interest such as the community or employees (Clarkson, 1995). The goal of this theory is to obtain an optimal balanced management of all stakeholders' interests, which sometimes may conflict with the shareholders interests (Hasnas, 1998).

According to this theory all stakeholder groups should have the right to demand information about how the organization is affecting them, even if they do not have a direct impact on the organization's survival and even if they choose not to use that information (O'Dwyer et al., 2005). Deegan (2009) opined that the normative branch of stakeholder theory is consistent with the notion of rights to information grounded in an accountability model as outlined by Gray et al. (1996). According to the accountability model, corporate environmental reporting is assumed to be responsibility-driven rather than demand or survival-driven which implies that people in society have a right to be informed about certain facets of an organization's operations (Deegan, 2009)

Besides, normative stakeholder theory suggests that management must not ignore secondary stakeholders. Thus, it would be inappropriate to classify any stakeholders as secondary stakeholders. Because, according to this theory, in the modern day business environment, all stakeholders have a right to be considered equally by the management and have a right to be provided with information about an organization's environmental performance (Deegan, 2009). While the normative branch of stakeholder theory emphasizes that all stakeholders have the right to be treated fairly by an organization, it does not describe the issues of stakeholder power (Deegan, 2009). Therefore, according to this theory management motivations that determine the levels and quality of corporate environmental disclosure should not be driven by stakeholders' power.

Positivist theorists criticized the normative theory (that recognizes the interests of all stakeholders equally) as mismatched with the function of business, where the objective is to focus on the interests of the owner (Ambler & Wilson, 1995). Another key limitation of this theoretical perspective is that it cannot be validated by empirical observation (Deegan, 2009). This branch of the stakeholder theory has also been criticized for not considering that business has true social responsibilities. (Uwalomwa, 2011).

An alternative view of normative stakeholder theory is provided by the managerial branch of stakeholder theory which is discussed in the following section.

3.7.2.2 Managerial Branch of Stakeholder Theory

The managerial branch of stakeholder theory predicts that management is more likely to focus on meeting the expectations of powerful stakeholder groups. (Deegan, 2009). These stakeholder groups control resources that necessary to the organization's operations and would withdraw support from the organization if important responsibilities were unattended (Freeman, 1984). This theory is based on the perspective that an organization and its stakeholders are interdependent upon one another, and managers are responsible for maintaining this exchange relationship for the organization's survival (Islam, 2009).

Deegan (2009) opined that the managerial branch of stakeholder theory recognizes the expectations of the divergent stakeholder groups, who will influence the corporate practices and related disclosure policies of the organizations. This branch of stakeholder theory has also been utilized within environmental accounting literature as a popular explanation of environmental disclosure practices (Roberts, 1992). This theory explains corporate environmental reporting as a way of managing the company's relationship with different stakeholder groups (Ullmann, 1985), where high stakeholder power accounts for the high levels of environmental performance and related disclosure.

In the light of increasing global awareness regarding environmental safety, there appears to many stakeholder groups concerned about environmental issues, such as environmental NGOs or activists, regulators, accounting professionals, employees, consumers, media, scientific community, shareholders, suppliers etc (Islam, 2009). Within managerial branch of stakeholder theory, disclosure of environmental information is considered as a potential element that can be employed by the organization to manage (or manipulate) these stakeholders in order to gain their support and approval (Kolk & Pinkse, 2007). Hence, organizations will be motivated to disclose certain information about their environmental performance to the most powerful stakeholder groups, to establish that they are meeting stakeholders' expectations. While addressing the demands and expectations of powerful stakeholders, it is suggested that organizations should balance the expectations of the various stakeholder groups. Unerman and Bennett (2004) argued that, as these expectations and the relative power balance can change over time, organizations must continually adapt their operating and reporting behaviours accordingly.

3.7.3 Justification of the Theories Underpinning the Current Research.

Despite there are various theories that have significant contributions in environmental reporting literature, present study considers stakeholder theory and legitimacy theory as the most useful theoretical frameworks in explaining environmental reporting practices of the listed manufacturing companies in Bangladesh and identifying the reasons for potential lacks of the reporting practices.

The review of theoretical literature revealed that legitimacy theory and stakeholder theory have been adopted by several academic researchers to explain the environmental reporting practices of corporate organizations. According to Gray et al. (1995b) Legitimacy theory and Stakeholder theory should not be considered as harshly distinct theories. Rather, they have been developed from a similar philosophical background of 'political economy'. They also argued that legitimacy theory and stakeholder theory should be seen as complementary and overlapping perspectives.

In this regard various researchers opined that a joint consideration of these two related theories provides richer insights into the factors that motivate organizational behaviours in relation to the environmental reporting practices of corporate entities. That is why, the researcher think that a joint consideration of these two theories will provide a better and richer explanation in understanding the environmental reporting practices of selected manufacturing companies in Bangladesh and the perceptions of stakeholders regarding the reporting practices.

Legitimacy theory has emerged as the dominant explanatory theory in the voluntary environmental reporting literature (Cunningham & Gadenne; 2003; Deegan 2002; Deegan et al, 2002; Milne & Patten 2002; O'Donovan 2002; O'Dwyer 2002; Deegan & Gordon 1996; Deegan & Rankin 1996; Patten 1991; Guthrie & Parker 1989; Tinker & Neimark 1987; Hogner 1982).

Legitimacy theory mainly focuses on the organization's relationship with society to assess the validity of corporate actions, and to gain legitimacy (Milne & Patten 2002). According to this theory the environmental disclosure strategy of organizations is brought on by the legitimacy gap or a crisis of legitimacy (Deegan 2002). The techniques adopted depend on whether the corporation is attempting to gain, maintain or repair legitimacy and the strategy adopted (O'Donovan 2002).

The stakeholder theory is another theoretical framework which is adopted by this thesis and considered as one of the most useful theories in explaining environmental reporting practices of the listed manufacturing companies in Bangladesh. Because, Clarkson (1995) in his 10-year study on corporate social performance concluded that it was necessary to distinguish between social

issues and stakeholder issues, i.e. issues that concern one or more stakeholder groups. These issues may not necessarily (but quite possibly) be the same concern of the society as a whole. Social issues are those issues of sufficient concern to society and as such should be the subject of legislation and regulation. Clarkson argued for the recognition of the distinction between social and stakeholder issues because corporations and their managers manage their relationships with their stakeholders and not with society. In the context of this study, the stakeholders demand for environmental disclosures is characterized as being stakeholder issues because disclosure of such information is still unregulated in developing economies (especially in Bangladesh).

Besides, applying the stakeholder theory in this study will support in understanding the voluntary environmental reporting practices in Bangladeshi environment. It will also contribute to the literature on international diversity of corporate environmental reporting practices under the wide organization-stakeholders relationships.

Moreover, previous environmental accounting research which used political economy theories including stakeholder and legitimacy theory indicate that organizations operating in developed countries respond to the expectations of stakeholder groups specifically and more generally to those of the broader community in which they operate, through the provision of environmental information within annual reports (Islam, 2009). But very few studies can be found that have examined stakeholders' views and foretold about the environmental disclosures behaviour of organizations operating in a developing country. On the other hand, despite the stakeholder theory focuses on both managerial and non-managerial stakeholders, most previous researches has mainly concentrated on managerial perceptions of corporate environmental disclosure practices. Very few studies are available which examined non-managerial stakeholders' perceptions. In this regard, this thesis intends to contribute to existing literatures in developing countries by responding to the call made by O. Dwyer et al. (2005) on the need to explore both the managerial and non-managerial stakeholders' views, and doing so in the context of developing countries, using Bangladesh as an example. Therefore, it is appropriate to utilize the stakeholder theory and legitimacy theory as the most useful theoretical frameworks in this research.

Chapter Four

Research Methodology

4.1 Introduction

The aim of this chapter is to describe the research methods and procedures that were employed in addressing the objectives of this study. The chapter proceeds with the overview of the research methodology. This is followed by a discussion on the study population, sample size and sampling techniques, the validity and reliability of the instrument and data collection method. A detailed discussion on the content analysis method including the selection of the disclosure medium, coding system and unit of measurement, is also introduced. And finally, an explanation of the statistical techniques utilized in this study is outlined.

4.2 Overview

The study approach is descriptive in nature, and both primary and secondary data have been used in this study. The study used content analysis method to explore the nature and extent of environmental disclosures in the annual reports of the selected listed manufacturing companies in Bangladesh during 2009-2013. Besides, in line with the basic notion of the stakeholder theory (which hypothesized that the organization's success is dependent upon the successful management of all the relationships that an organizations has with its stakeholders), this study employed questionnaire survey method in investigating the manifold perceptions of multiple stakeholder groups regarding various aspects of environmental reporting practices of the listed manufacturing companies in Bangladesh.

4.3 Study Population

One of the basic criteria for including a company in this study population was the listing of the company on the Dhaka Stock Exchange (DSE), because, it is assumed that listed companies would provide readily available information through their annual reports. For the purpose of this study, Cement, Tannery, Textiles and Pharmaceuticals sub-sectors were selected purposively from the

available sub-sectors of DSE. The rationale for selecting these sub-sectors is that these industrial sectors are highly environmentally sensitive (DoE, 2010). Therefore, the population of this study comprises all the manufacturing companies of Cement, Tannery, Textiles and Pharmaceuticals industries which are listed on the Dhaka Stock Exchange (DSE). The total number of listed Cement, Tannery, Textiles and Pharmaceuticals companies on DSE as on December 31st, 2013 were 7, 5, 23 and 12 respectively. In addition, survey population of this research includes all the members of the key stakeholder groups of the listed manufacturing companies including Accounts executives (Chief Financial Officers/Senior accounts executives) and Internal auditors (Head of internal audit/Senior executives-internal audit) of sample companies, Professional accountants/ External auditors (CA/FCA), Member of the Regulatory Bodies (top or mid level officials of the Bangladesh Securities and Exchange Commission, Dhaka Stock Exchange, Ministry of Environment and Forest and National Board of Revenue (NBR) and Environmental activists, who considered crucial to the company. It is noteworthy that at the time of survey (September, 2014-December, 2014) there were 1536 chartered accountants (CA) who have membership of ICAB, but only 368 chartered accountants were working as external auditors (ICAB, 2014). Regarding environmental activists, there was no reliable public information about the total number of individual persons or organizations who were working as environmental activists in Bangladesh. Justifications for including these stakeholder groups in the survey population of this study are stated below:

- **Chief Financial Officer (CFO) or Senior Accounts Executive:** The activities of CFO or senior accounts executives are closely related in preparing the financial reports of the companies, and they are appeared to be more knowledgeable regarding the environmental reporting related policy of the companies. In this regard, Belal and Owen (2007) concluded that employees are the most important stakeholders of the companies in Bangladesh.

- **Head of Internal Audit or Senior Executive (internal audit):** Internal auditors are assumed to be more aware regarding the environmental performance related cost and disclosures of the companies, as their activities are closely related to the verification of all kinds of transactions of the companies. Therefore, their perceptions regarding environmental reporting practices of the organizations could provide significant insights to the present study.
- **Professional Accounts/ External Auditors (CA/FCA):** External auditors play an important role in the verification of disclosures made within the annual report of listed companies in Bangladesh. Moreover, each of them has membership of Institute of Chartered Accountants of Bangladesh (ICAB) which is the statutory accounting professional body in Bangladesh. Consequently, this professional group has influence in national policy making decisions in Bangladesh. So, their perceptions regarding environmental reporting practices of the listed manufacturing companies in Bangladesh are essentially relevant to the present study.
- **Member of the Regulatory Bodies:** Bangladesh Securities and Exchange Commission (BSEC) and Dhaka Stock Exchange (DSE) are the most important regulatory bodies in Bangladesh which are responsible for over-seeing the listed companies. Besides, Ministry of Environment and Forest (MoE) play an important role in implementing the corporate environmental performance related rules and regulations of the country. On the other hand, National Board of Revenue (NBR) is indirectly and to some extent directly involved with the monitoring process of the environmental performance of the corporate organizations for imposing tax. All of these regulatory bodies have influence in framing the disclosure rules in Bangladesh with which companies have to comply. Therefore, perceptions of the officials of these regulatory bodies are important in influencing the future prospect of environmental reporting in Bangladesh.
- **Environmental Activists:** Following the trend of developed countries, various environmental activists (organization or individual) have been

emerging in Bangladesh as pressure groups (Belal, 2006). Pressure groups have an important role to play in the improvement of corporate environmental conditions in Bangladesh (Islam, 2000). Therefore, perceptions of environmental activists are closely relevant for the development of environmental reporting practice in Bangladesh.

4.4 Sample Size and Sampling Techniques

4.4.1 Sample Size and Sampling Technique for Secondary Data

Based on the purposive sampling method, five companies from each of the four selected industrial sectors (Cement, Tannery, Textiles and Pharmaceuticals) were included in this study which were listed on the Dhaka Stock Exchange (DSE) and situated in Dhaka, Gazipur, Narayanganj, Narsingdi, Sylhet and Chittagong districts. The resultant sample size comprised twenty listed manufacturing companies. Sample size for secondary data comprised all the annual reports of twenty sample companies for the study period 2009-2013, which ultimately amounted to a total of 100 annual reports that were analyzed in the course of this study.

4.4.2 Sample Size and Sampling Technique for Primary Data

To achieve the advantage of an in-depth research, respondents for the primary data were taken from five key stakeholder groups of the listed manufacturing companies in Bangladesh. A total number of 85 respondents were taken from five selected stakeholder groups including accounts executives, internal auditors, professional accountants, and member of the regulatory bodies for this study. Chief Financial Officer (CFO) or one senior accounts executive and Head of Internal Audit or one senior executive (internal audit) from each of the sample companies, 20 professional accountants (CA/FCA) who are engaged in the audit activities of manufacturing companies, 15 officials from different regulatory bodies including 3 Deputy Directors and 1 Director (Joint Secretary) of the Department of Environment, 1 Deputy Secretary of the Ministry of Environment & Forest (MoE), 2 Directors and 1 Commissioner of the Bangladesh Securities and Exchange Commission (BSEC), 2 Directors of Dhaka Stock Exchange, 3

Deputy Commissioner of Taxes, one joint Commissioner of Taxes and one Additional Commissioner of Taxes of National Board of Revenue (NBR), and 10 environmental activists were taken into consideration. Respondents were selected on the basis of convenience of data collection and cooperation from them.

Table: 4.1 Details of selected respondents

Strata No.	Category of Respondents	Company wise respondents	Sample respondents
1	Chief financial Officer (CFO)/ Senior Accounts Executive	1	20
2	Head of Internal Audit / Senior Executive (internal audit)	1	20
3	Member of the Regulatory Bodies	-	15
	Officials of Ministry of Environment and Forest (5)		
	BSEC (3)		
	DSE (2)		
	NBR (5)		
4	External Auditors (CA/FCA)	-	20
5	Environmental Activists	-	10
	Total		85

4.5 Procedures of Data Collection

4.5.1 Secondary Data Sources

For the purpose of this study, secondary data have been collected from the annual reports of the sample companies for the study period 2009 to 2013. Because annual reports are readily available and accessible, and annual reports are common and popular means of communication to stakeholders. Moreover, they have enough credibility (Nie, 2009). Besides, annual reports are the main communication media for disclosing the environmental information of the companies to their stakeholders. In addition, the information of annual reports are made and audited under the bounds of corporate law, therefore, annual reports are considered to be more formal, authoritative and accurate data source for researchers. Consequently annual reports of the sample companies for the study period 2009 to 2013 were considered as one of the two sources of data in this study. The annual reports of the sample companies were collected from the DSE library.

4.5.1.1 Measurement of Environmental Disclosures

One of the main objectives of this study is to explore the nature and extent of environmental disclosures in the annual reports of the sample companies during the study period 2009-2013. Content analysis method was employed to measure the nature and extent of environmental disclosures of sample companies.

4.5.1.2 The Content Analysis Method

The content analysis method has been used in this study to examine the extent of environmental disclosures in the annual reports of the sample companies in the associated periods. This method is one of the most systematic, objective and quantitative methods of data analysis which was also employed in other prior researches involving corporate environmental reporting practices. Uwalomwa (2011) explained that content analysis is distinguishable from other textual analysis techniques as it allows the text to be reduced to a quantitative form. This method allows corporate environmental disclosures to be systematically classified and compared. It is also one of the most common or dominant research methods used in measuring and analyzing corporate environmental disclosures in annual reports (Gray, Owen & Mauners, 1991). This systematic and quantitative method is recommended by various researchers like (Deegan C. 2002; Gray et al., 1991; Haque, 2011; Ullah, et al., 2013). However, like all other research methods, content analysis has its own limitations. For instance, content analysis method focuses on quantity rather than quality of disclosure (Guthrie & Parker, 1990).

4.5.1.3 Unit of Analysis

Content analysis is a technique of coding the content of a piece of written work (or other types of documents) to different groups or categories depending on selected criteria (Yaftian, 2011). The central idea in content analysis is that many words of the text are classified into much fewer content categories. In order to quantify the content of documents, the researcher must develop a coding system and decide on the unit of measurement for the analysis (Guthrie & Parker, 1990). The researcher should select a recording and/or measurement unit consistent with the underlying objectives of the content analysis. In environmental reporting

literature, several units of analysis have been used for the purpose of content analysis, such as words, sentences, percentage of page or weighted and un-weighted index (Gray et al., 1995a). Since, this study is concerned with the extent of corporate environmental disclosures as opposed to the company's importance on disclosed items. The study adopted un-weighted disclosure index and considered absence or presence of environmental item to document environmental disclosures. Therefore emphasize in this study was placed to explore the quantity of environmental disclosure of sample companies rather than its actual quality in Bangladesh context.

4.5.1.4 Environmental Disclosure Index

An important task for using content analysis method is the construction of a suitable categorization scheme or a disclosure index to measure the environmental disclosures in corporate annual reports (Haque, 2011; Hossain et al., 2006). A disclosure index is a research instrument comprising a series of pre-selected items which, when scored, provide a measure that indicates a level of disclosure in the specific context for which the index was devised. This involves the selection and development of content-category themes into which content units can be classified (Bebbington et al., 2008; Uwalomwa, 2011).

For the purpose of this study, an un-weighted disclosure index comprising sixty (60) items of environmental information within four testable dimensions was developed. This was mainly based on the ISO 14031 (Environmental management–environmental performance evaluation – guidelines) requirements, GRI G3 Guidelines and other relevant prior literatures such as (Hossain et al., 2006, Uwalomwa, 2011, and Ullah et al., 2013). The following criteria were also considered in case of selecting the items of environmental disclosure index for this study:

- i) Items of environmental information commonly required by the legal status in Bangladesh.
- ii) Items identified in other studies for examining the environmental reporting performance of the organizations in Bangladesh (Hussain et al., 2006).
- iii) Disclosure index generally used in environmental reporting research in developing countries other than Bangladesh (Uwalomwa, 2011).

The developing procedure of our environmental disclosure index was involved with two complimentary phases. Phase 1 was involved in the selection of content-category themes of environmental disclosures. In this Phase, eight content-category themes were selected for our disclosure index, such as Materials, water & energy, Emissions, effluents & wastes, Products security & bio-diversity, Environmental policies & legal compliance, Human resource management, Employees' health & safety, Community & others and Research & development. These content-category themes were developed mainly in accordance with ISO 14031 requirements and relevant previous literatures. It is notable that the study to some extent considered the GRI G3 guidelines (Sustainability Reporting Guidelines) in case of developing the 'themes' of the disclosures index. In this Phase, we also select another three testable dimensions of the environmental items of disclosure index, for instance evidence of disclosures (monetary quantitative, non-monetary quantitative and descriptive), location of disclosure in the annual report and news-type of disclosures, such as good, neutral or bad. Phase 2 was involved in identification of the specific indicators or items under relevant content-category themes.

It is important to note that while most of the previous studies were conducted in the context of developed countries, maximum items of our disclosure index were adopted from relevant studies of Hossain et al., 2006, Uwalomwa, 2011, and Ullah et al., 2013 which were conducted in the context of developing economics. Besides, some items were introduced in the disclosure index of our study on the basis of environmental and corporate related rules and regulations in Bangladesh, such as the Environmental Conservation Act, 1995, the SEC Act, 1993 and the Bangladesh labour Law (Amendment) Bill, 2013. Moreover, it is remarkable that in case of adopting environmental information (from previous studies) in our disclosure index, necessary amendments were made on the basis of ISO 14031 Requirements and GRI G3 guidelines, and with the view point of Bangladeshi corporate culture. In addition, numerous indicators of these relevant studies (Hossain et al., 2006, Uwalomwa, 2011, and Ullah et al., 2013) were ignored in our coding procedure, because, we considered those indicators as inappropriate for the purpose of our study. The final coding items used in this study are outlined in **Appendix Table-B**.

4.5.1.5 Research Coding Method

An un-weighted disclosure index has been used in this study to examine the extent of environmental disclosures. Under an un-weighted disclosure index all items are treated equally important to the average users. The advantage of using the un-weighted index is that it avoids the items being treated unequally, and minimizes the risk of subjectivity created when measuring the actual quantity of environmental disclosures (Yuan, 2007). But this index disregards the importance of the quality of each disclosed item (Dai & Dong, 2010). A dichotomous procedure known as the Kinder Lydenberg Domini (KLD) social environmental performance rating system was used to measure the reporting score (RS). In this rating system, disclosure of each environmental aspect is treated as dichotomous variable. Here, the only consideration is whether a company discloses an item of environmental information in its corporate annual report or not. If a company provides an environmental indicator in its annual report, it is awarded '1' and if not it is awarded '0'. The items of Disclosure Index are added independently to provide total scores for measuring the extent of environmental disclosures by the selected companies. Consequently, a company could score a maximum of sixty (60) points and a minimum of zero (0). The formula used in this study to calculate the reporting score is as follows:

$$TD = \sum_{i=1}^n D_i$$

Where,

TD= Total disclosures,

D= 1 if the item D_i is disclosed and 0 if the item D_i is not disclosed.

n= number of items

i= 1, 2, 3...60.

4.5.1.6 Reliability in Content Analysis

It is necessary to ascertain the reliability of data collected using content analysis to ensure that results may be replicated and any inferences drawn from the results are valid. For the purpose of this study researcher has tried to collect the relevant, accurate, unbiased and representative data from the selected corporate annual reports. Proper care and action has been taken during collection of data.

The researcher himself has collected all the information from the annual reports of the sample companies through the well prepared disclosure index. In order to ensure reliability of coding instruments, the researcher himself was involved in the coding process initially and after a time interval (twenty days). Following the initial sample coding the researcher investigated any differences in later coding results. The coding instrument and instructions were refined until a high level of agreement was achieved.

4.5.2 Primary Data Sources

4.5.2.1 Questionnaire

One of the specific objectives of this study was to investigate the manifold perceptions of multiple stakeholder groups regarding the various aspects of environmental reporting practices of the listed manufacturing companies in Bangladesh. The present study used a structured questionnaire in exploring the perceptions of stakeholders regarding the reporting practices.

The questionnaire was divided into two parts. The first part of the questionnaire contained ten demographic questions. These questions gathered information regarding the age, occupation, educational qualifications, working experience and professional membership of the respondents. The second part of the questionnaire proceeds with a question on the concept of environmental reporting to assess the level of knowledge and awareness of the stakeholders regarding the concept. This is followed by the questions on significance of environmental reporting practices in improving the environmental performance and accountability of the listed manufacturing companies in Bangladesh. Based on the complementary perspectives of 'Stakeholder Theory' and 'Legitimacy Theory', the questionnaire included a question to explore the perceptions of respondents regarding the influence of environmental disclosures on the corporate relationships with various stakeholder groups. Questions on the environmental performance, nature and extent of environmental reporting practices, motives of listed manufacturing companies behind environmental reporting practices, credibility issue and needs of external audit of environmental disclosures of the listed manufacturing companies in Bangladesh were also included in the

questionnaire. Besides, questions related to the sufficiency of existing regulatory frameworks for environmental reporting, role of Government and other regulatory bodies, and challenges involved in the development of environmental reporting practices in Bangladesh were included in the questionnaire. Questionnaire also set a question, with a view to explore the perceptions of multiple stakeholder groups regarding the importance of the eight content-category themes of our 'disclosure index' for establishing ideal environmental reporting practices in Bangladesh. Moreover, questionnaire included another question in order to explore the perceptions of stakeholders regarding the possible ways of minimizing the challenges of environmental reporting practices in Bangladesh. The items of questionnaire were simple enough to avoid ambiguity.

Most of the questions of the questionnaire were designed by using a five-point Likert Scale and last two questions of the questionnaire were developed by using a scale of equal value, where one could identify one or more items. Besides, all of the questions of the questionnaire were close-ended except last three. It was anticipated that the open ended question will help to elicit information that was not covered in the earlier section of the instrument. Qualitative comments which were gathered as replies to open ended questions were transformed into recurring themes. The coding was attained through blind scoring, which denotes that respondents were not informed that their comments or responses to open ended questions would be transformed into quantifiable scores by the researcher. Both close-ended questions and open-ended questions have their advantages (Geer 1991). Close-ended questions are generally less time consuming and thus less expensive to manage. In addition, it was adopted due to the following reasons:

- a) Close-ended questions are easy to analyze. Every answer can be given a number or value so that a statistical interpretation can be assessed.
- b) Close-ended questions can be more specific and thus more likely to communicate the same meaning. Besides, open-ended questions allow respondents to use their own words. It is relatively more difficult to compare the meanings of the responses.

The list of questions was generated from the review of previous environmental reporting literature and the researcher's knowledge about the context of

Bangladesh. All questionnaires were distributed to the respondents with a cover letter including research title and main objectives of the study along with the assurance of their anonymity.

4.5.2.2 Pilot Survey

Prior to commencing the actual field survey, the survey instrument was piloted in face-to-face interviews with 15 respondents (5 professional accountants, 5 CFO of sample companies and 5 officials of different regulatory bodies) to determine the appropriateness and relevance of the questions in the instrument. The feedback from these respondents resulted in some amendments and modifications in the questionnaire.

4.5.2.3 Actual field Work and Administration of Survey Instruments

4.5.2.3.1 Selection of Potential and Appropriate Participants

In order to identify the appropriate participants of the selected stakeholder groups, researcher made various careful efforts. In each case, effort was made to ensure that any respondent who gave consent to take part in the survey would be the appropriate person to participate.

In case of accounts executives and internal auditors groups, initial contact with each of the 20 sample companies was made through formal letter soliciting interviews with Chief Financial Officer (CFO) and head of internal audit department. The letters were addressed to managing directors of the companies and resulted in 20 positive responses being received. For accounts executives group, in eleven cases, the research was referred to senior accounts executives instead of CFO, and in one case it was referred to an assistant manager (Financial reporting). Besides, in case of internal auditors group, in twelve cases, the researcher was referred to senior executives (internal audit) or to assistant general manager (internal audit) instead of head of internal audit department. All interviewees of these two stakeholder groups were closely involved in the compilation of annual reports within which any environmental disclosures are made. Moreover, as part of senior management, they possessed overall knowledge regarding the organization including its strategic objectives which might have implications for environmental reporting. In case of professional accountants

(FCA/CA) group, phone number and official address of respondents were collected from the published documents of ICAB, and phone number and other details of the possible respondents of environmental activists group were collected through internet. A phone call was made to the organizations or individual environmental activists requesting an interview. Most of the initial contacts of external auditors, environmental activists and member of the regulatory bodies groups were made through this process. However in case of environmental activists and member of the regulatory bodies groups, judgments were needed by the researcher for selecting the most potential person of an organization as our respondents. Finally, contacts were eventually made with a person whose job title convey the related responsibility to corporate environmental performance. Moreover, many of the potential participants of environmental activists and member of the regulatory bodies groups provided the contact details of the people (either within their organizations or in other organization) whom they thought would be more relevant to this research. It is also important to note that in case of potential participants of environmental activists and member of the regulatory bodies groups, researcher visited frequently to ensure the interview.

At the end, a total of 85 respondents have been interviewed with due representation from the selected stakeholder groups. Researcher surveyed the views of those 85 stakeholders between mid September 2014 and December 2014.

4.5.2.2 Interview Procedures

The primary data were collected by conducting face-to-face interviews with a structured questionnaire. The interviews took place between mid September 2014 and December 2014. Most of the interviews were held at the respondents' offices, but in case of some environmental activists, it was held in their residence, and lasted between 40 minutes and one hour, depending on the degree of interest and detailed knowledge on the part of the interviewees. All interviews commenced with a brief description of the project and an outline of the objectives of the interview, followed by specific questions revolving round the themes of the questionnaire. In most of the cases, the questions were asked in an open-ended fashion following a conversational style.

To enhance the validity of the participants' responses, the researcher gave repeated assurance about the anonymity of the information collected. Besides, Attempts were made to minimize the effects of all possible biases by careful design and conduct of the interviews.

4.5.3 Statistical Techniques of Analysis

Quantitative data were analyzed by using appropriate statistical techniques such as frequency, mean, median, standard deviation, co-efficient of variance, percentage, etc, through SPSS program (version-15).

4.6 Techniques of Data Presentation

Data collected from the selected annual reports of the listed manufacturing companies and responses from the field survey were presented in tabular forms. However, descriptive statistics were also used to depict the level of corporate environmental disclosure among companies of selected industrial sectors. Moreover, findings of the study were presented by tables, charts and diagrams to make those more meaningful and easily realizable to the readers.

Chapter Five

Present State of Environmental Reporting Practices in the Listed Manufacturing Companies in Bangladesh

5.1 Introduction

This chapter presents analysis on the environmental disclosures in the annual reports of the selected listed manufacturing companies in Cement, Tannery, Textiles and Pharmaceuticals industries in Bangladesh during the study period 2009-2013. The research is based on the assumption that annual report is the most commonly used medium through which companies disclose environmental information to different stakeholder groups. The chapter therefore presents analysis on the secondary data collected from the annual reports of the sample companies by using descriptive statistics to provide the nature and extent of corporate environmental reporting practices of the companies,

A disclosure index comprising sixty (60) items of environmental information within four testable dimensions was developed (**see Appendix B**) in order to explore the nature and extent of environmental disclosures in the corporate annual reports of the sample companies. This was based on the ISO 14031 (Environmental management– environmental performance evaluation-guidelines) and other relevant previous studies. The findings of this chapter will then provide background for further research to be undertaken that will address the manifold perceptions of stakeholders regarding the environmental reporting practices of the listed manufacturing companies in Bangladesh.

The chapter proceeds with a brief discussion on levels of environmental reporting practices of the sample companies in Bangladesh. Analysis on ranges of total environmental disclosures of sample companies was then provided. After that, the extent of environmental reporting in terms of content-category themes was specially analyzed. The chapter also presented descriptive analysis regarding the corporate environmental disclosures in terms of evidence, location and news types of information. The presented data covered details of the summarized environmental disclosures scores of the sample companies.

5.2 Levels of Environmental Reporting Practices of the Sample Companies

Table 5.1 provides a detailed picture of the levels of environmental reporting practices of the sample listed manufacturing companies in Cement, Tannery, Pharmaceuticals and Textiles industries in Bangladesh by presenting relevant descriptive statistics.

Table 5.1 Descriptive Statistics for Environmental Disclosures of Sample Companies in Selected Industries

Types of Industry	Descriptive Statistics						
	Disclosing Period	Mean (Av. No. of Items Disclosed)	Standard deviation	Maximum (No. and %)	Minimum (No. and %)	No. of Disclosing Companies	No. of Non-disclosing Companies
Cement	2010	9.40	3.912	15 (25)	6 (10)	100%	0%
	2011	10.40	4.336	15 (25)	6 (10)	100%	0%
	2012	11.80	6.14	19 (31.67)	8 (13.33)	100%	0%
	2013	13.40	7.02	23 (38.33)	8 (13.33)	100%	0%
	2014	15.40	7.57	25 (41.67)	9 (15)	100%	0%
	2010-2014	12.08	5.88	*25 (41.67)	6 (10)	100%	0%
Tannery	2010	5.60	3.578	10 (16.67)	2 (3.33)	100%	0%
	2011	5.60	3.578	10 (16.67)	2 (3.33)	100%	0%
	2012	6.40	4.278	11 (18.33)	2 (3.33)	100%	0%
	2013	7	4.637	11 (18.33)	2 (3.33)	100%	0%
	2014	7.40	4.98	12 (20)	2 (3.33)	100%	0%
	2010-2014	6.40	3.94	12 (20)	**2 (3.33)	100%	0%
Pharmaceuticals	2010	12.60	2.702	15 (25)	8 (13.33)	100%	0%
	2011	14.40	3.05	16 (26.67)	9 (15)	100%	0%
	2012	15.20	1.483	17 (28.33)	13 (21.67)	100%	0%
	2013	17.20	2.168	21 (35)	16 (26.67)	100%	0%
	2014	18.60	3.5	24 (40)	17 (28.33)	100%	0%
	2010-2014	15.60	3.175	24 (40)	8 (13.33)	100%	0%
Textiles	2010	9.60	4.98	15 (25)	5 (8.33)	100%	0%
	2011	9.80	5.26	16 (26.67)	5 (8.33)	100%	0%
	2012	10.20	5.40	16 (26.67)	5 (8.33)	100%	0%
	2013	11.60	6.35	19 (31.67)	6 (10)	100%	0%
	2014	12	6.12	19 ((31.67)	6 (10)	100%	0%
	2010-2014	10.64	5.25	19 (31.67)	6 (10)	100%	0%

Source: Corporate Annual Reports of the Sample Companies. Note: *= Highest number of environmental disclosures and **= Lowest number of environmental disclosures among sample companies during the study period.

The Table provides a comparison among the companies of selected industrial sectors in terms of mean, standard deviation, maximum and minimum disclosures as well the percentage of disclosing or non-disclosing companies. The mean value refers to the average number of environmental disclosures per company. In respect to the percentage of number of disclosing companies, all sample companies of four selected industrial sectors had hundred percent disclosing rates, that means, each company had contained at least one item of

environmental information in its every corporate annual report during the study period 2009-2013. However, a closer examination of results provided in Table 5.1 revealed that the average environmental disclosures among the companies of Cement, Pharmaceuticals and Textiles sectors had been increasing gradually but in case of Tannery sector, the average disclosures remained typically low. This is because there are 60 disclosing items included in the disclosure index, and average disclosures of Cement companies were 9.40 in 2009 and 15.40 in 2013, Pharmaceuticals sector disclosed on an average 12.60 items in 2009 and 18.60 in 2013, and average disclosures of Textiles companies were 9.80 in 2009 and 12 in 2013, whereas, Tannery sector scored 5.60 and 7.40 in 2009 and 2013 respectively. Moreover, the Table also showed that highest standard deviation, that is, highest variation was found in case of Cement sector.

In addition, the Figure 5.1 shows that ranges of environmental disclosures were 10% (6 out of 60) to 41.67% (25 out of 60) for Cement companies, 3.33% (2 out of 60) to 20% (12 out of 60) for Tannery companies, 13.33% (8 out of 60) to 40% (24 out of 60) for Pharmaceuticals companies and 10% (6 out of 60) to 31.67% (19 out of 60) for Textiles companies during the period of analysis.

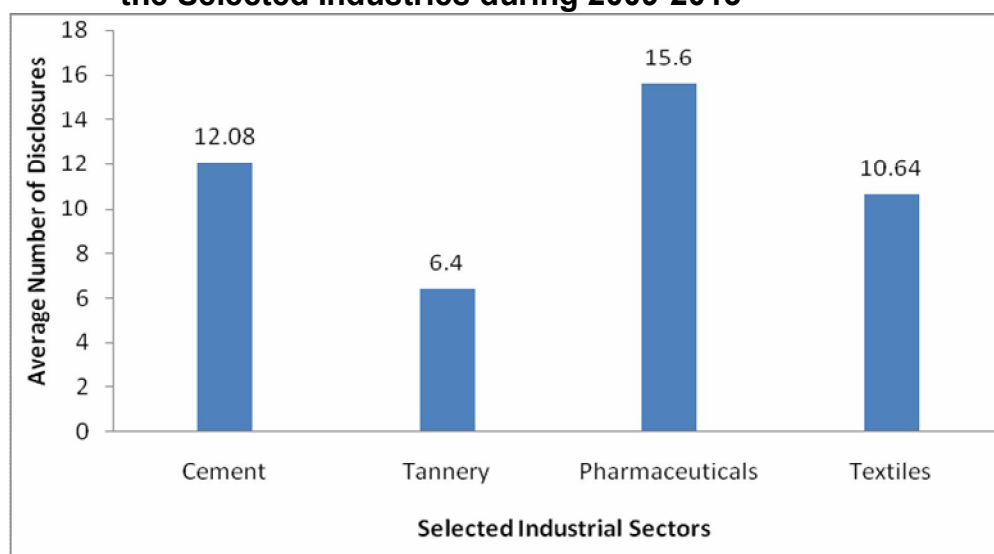
Figure 5.1: Highest and Lowest Number (%) of Environmental Disclosures of the Sample Companies in the Selected Industrial Sectors during 2009-2013



Source: Corporate Annual Reports of the Sample Companies.

These findings indicate that some Cement, Pharmaceuticals and Textiles companies are interested to enhance their environmental reporting and achieved comparatively highest scores of 25, 24 and 19 respectively. It was also found that only Heidelberg Cement Bangladesh Limited disclosed highest 41.67% items of the disclosure index in 2013.

Figure 5.2: Average Environmental Disclosures of Sample Companies in the Selected Industries during 2009-2013



Source: Corporate Annual Reports of the Sample Companies.

On the other hand, Figure 5.2 shows that companies in the Pharmaceuticals sector had the highest level of average environmental disclosures of about 15.60 during the study period 2009-2013. This is followed by the Cement sector, Textiles sector and then Tannery sector, in which 12.08, 10.54 and 6.40 average disclosures were shown in annual reports.

Findings from the Table 5.1, Figure 5.1 and Figure 5.2 provide a clear picture of the fact that despite the increased disclosure level noticed among the sample companies in Bangladesh, the overall environmental reporting performance of the companies appeared to be inconsistent and unregulated. Therefore, the level of environmental reporting practices of sample companies among the selected industries was low in compared with companies of developed countries. This finding is consistency with the studies of Hossain et al. (2006), Ullah et al. (2013) and Assaduzzaman, Hamid & Afrin (2014), which indicated that most of the Bangladeshi companies disclosed very negligible amount of information regarding environmental issues, but quantity of disclosure had been increasing gradually.

5.3 Ranges of Total Environmental Disclosures Scores

Table 5.2 presents the distribution of environmental disclosures scores of the sample companies among the selected industries on the basis of total number of items disclosed in different reporting year of the study period.

Table 5.2: Ranges of Total Environmental Disclosures of the Sample Companies by Year

Range of Items disclosed	Reporting Year									
	2009		2010		2011		2012		2013	
	No. of disclosing companies	% of sample	No. of disclosing companies	% of sample	No. of disclosing companies	% of sample	No. of disclosing companies	% of sample	No. of disclosing companies	% of sample
0-5	3	15%	3	15%	3	15%	2	10%	2	10%
6-10	9	45%	8	40%	7	35%	7	35%	6	30%
11-15	8	40%	5	25%	4	20%	2	10%	3	15%
16-20	0	0	4	20%	6	30%	7	35%	6	30%
21-25	0	0	0	0	0	0	2	10%	3	15%
26- over	0	0	0	0	0	0	0	0	0	0
Total	20	100%	20	100%	20	100%	20	100%	20	100%

Source: Corporate Annual Reports of the Sample Companies.

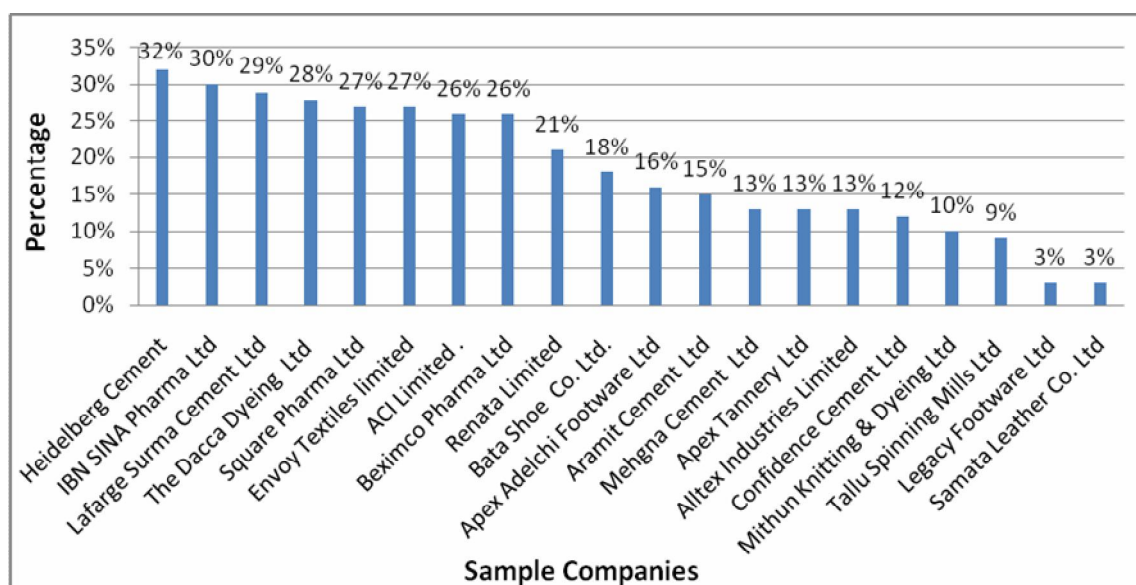
The Table shows that in 2009, maximum 9 sample companies disclosed between 6 to 10 items out of the 60 items of the disclosure index, and 8 sample companies disclosed between 11 to 15 items which was the highest disclosure range of the year. In 2010, maximum 8 sample companies disclosed between 6 to 10 items and only 4 sample companies scored the highest range of 16 to 20 items. In 2011, highest score of between 16 to 20 items was made by 6 sample companies. In 2012, Maximum 7 sample companies disclosed between 6 to 10 items and 16 to 20 items. On the other hand, only 2 of the sample companies achieved the highest disclosure range of 21 to 25 items. The Table further shows that in 2013, maximum 6 sample companies disclosed between 6 to 10 items and 16 to 20 items. Moreover, only 3 sample companies disclosed highest range of 21 to 25 items during the year. It is also observed that none of the sample companies disclosed more than 25 items of the expected 60 items, and maximum sample companies disclosed only between 6 to 10 items during the study period. Findings from Table 5.2 imply that environmental reporting performance of the sample companies among the selected industrial sectors in Bangladesh is negligible.

5.4 Ranking of the Sample Companies Based on Total Environmental Disclosures

Figure 5.3 provides the ranking of the sample companies on the basis of un-weighted average environmental disclosure score of each of the sample companies during the study period 2009-2013 to evaluate their relative position. Besides, Table 5.3 and 5.4 introduce the top and bottom ranked companies by the size of their total environmental disclosure scores and the percentage of disclosures made by the sample companies during the study period. Furthermore, the Figure and Tables provide insights about which industrial sectors contained the companies that disclosed the highest and lowest environmental information in their corporate annual reports.

Figure 5.3 and Table 5.3 show that Heidelberg Cement Bangladesh Limited on an average disclosed about 32% items (19.40) out of expected 60 items of the disclosures index during the study period 2009-2013, and ranked one among twenty sample companies. This is followed by the IBN SINA Pharmaceuticals Limited and Lafarge Surma Cement Ltd which disclosed about 30% and 29% items respectively.

Figure 5.3: Average Environmental Disclosures Positions of the Sample Companies during 2009-2013



Source: Corporate Annual Reports of the Sample Companies.

It is also revealed that none of the top five disclosing companies came from the 'Tannery' industry, where two Cement companies, one Pharmaceuticals company and two Textiles companies were included.

Table 5.3: Top Ranking Companies Based on Total Amount of Environmental Disclosure

Sl. No.	Company Name	Industrial Sector	Total Number of Environmental Items Disclosed by Year						Ranking
			2009	2010	2011	2012	2013	2009-2013	
1	Heidelberg Cement Bangladesh Limited	Cement	15	15	19	23	25	97	1
2	The IBN SINA Pharmaceuticals Limited	Pharmaceuticals	14	16	15	21	24	90	2
3	Lafarge Surma Cement Ltd	Cement	12	15	18	19	22	86	3
4	The Dacca Dyeing & Manufacturing Co. Ltd	Textiles	15	16	16	19	19	85	4
5	Envoy Textiles limited	Textiles	15	15	16	18	18	82	5

Source: Corporate Annual Reports of the Sample Companies.

Table 5.4 introduces the five lowest ranked companies among the selected industrial sectors on the basis of total environmental disclosure scores during the period of analysis. It is observed that the lowest scores were obtained by Legacy Footware Ltd. and Samata Leather Complex Ltd, both of which came from 'Tannery' sector and ranked 18 out of 20 sample companies. These are followed by Tallu Spinning Mills Limited, Mithun Knitting & Dyeing (CEPZ) Limited and Confidence Cement Limited with the ranking position of 17, 16 and 15 respectively.

Table 5.4: Lowest Ranking Companies Based on Total Environmental Disclosures

Sl. No.	Company Name	Industrial Sector	Total Number of Environmental Items Disclosed by Year						Ranking
			2009	2010	2011	2012	2013	2009-2013	
1	Legacy Footware Ltd	Tannery	2	2	2	2	2	10	18
2	Samata Leather Complex Ltd	Tannery	2	2	2	2	2	10	18
3	Tallu Spinning Mills Limited	Textiles	5	5	5	6	6	27	17
4	Mithun Knitting & Dyeing (CEPZ) Limited	Textiles	6	6	6	7	7	32	16
5	Confidence Cement Limited	Cement	6	6	7	8	9	36	15

Source: Corporate Annual Reports of the Sample Companies.

It is important to note that none of these five lowest ranked Bangladeshi companies came from the Pharmaceuticals industrial sector.

5.5 Environmental Disclosure by Content- Category Themes

The disclosure index used in this study contains 60 environmental items which are classified in terms of eight content-category themes. These themes are namely Material, water and energy, Emissions, effluents and wastes, Products, security and bio-diversity, Environmental policies and legal compliance, Human resource management, Employees' health and safety, Community and others, and Research and development. The Table 5.5 presents the average number and percentage of corporate environmental disclosures by content-category themes, and number of disclosing companies for the study period 2009 to 2013 in Cement, Tannery, Pharmaceuticals and Textiles industries in Bangladesh. The average number of disclosures is required to identify the quantity of environmental disclosures by category, and quantity in percentage provides a clear indication of the comparative extent of environmental disclosures of the sample companies by category. Moreover, the number of disclosing companies is important for understanding the choice of the companies in case of disclosing environmental issues.

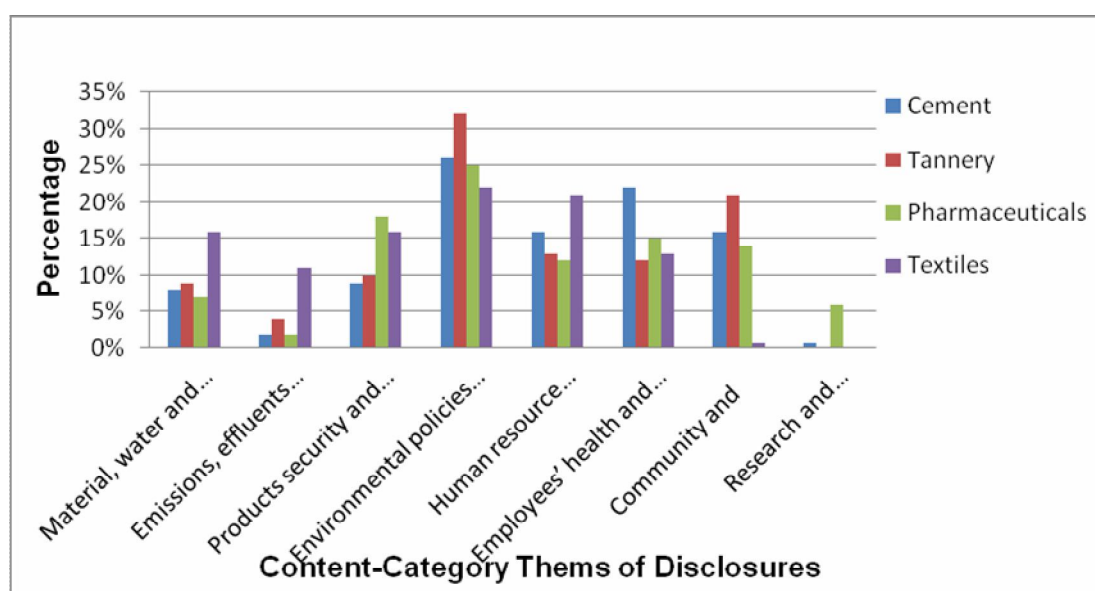
Table 5.5: Total Environmental Disclosures by Content-Category Themes in the Selected Industries during 2009-2013.

Content Category Themes	Types of Industries								Total	
	Cement		Tannery		Pharmaceutics		Textiles			
	Total No. and % of items disclosed	No. of Disclosing companies	Total No. and % of items disclosed	No. of Disclosing companies	Total No. and % of items disclosed	No. of Disclosing companies	Total No. and % of items disclosed	No. of Disclosing companies	Total No. and % of items disclosed	No. of Disclosing companies
Material, water and energy	23 (7.62)	4	15 (9.37)	3	28 (7.18)	5	42 (15.79)	5	108 (9.66)	17
Emissions, effluents and wastes	7 (2.32)	2	6 (3.75)	2	7 (1.79)	2	30 (11.28)	3	50 (4.48)	9
Products security and biodiversity	26 (8.60)	3	16 (10)	2	70 (17.95)	5	42 (15.79)	5	154 (13.77)	15
Environmental Policies and legal compliance	79 (26.15)	5	51 (31.87)	5	100 (25.65)	5	59 (22.18)	5	289 (25.85)	20
Human resource management	49 (16.23)	5	20 (12.50)	3	46 (11.79)	5	57 (21.42)	5	172 (15.38)	16
Employees' health and safety	67 (22.18)	5	19 (11.88)	3	60 (15.38)	5	34 (12.78)	4	180 (16.10)	17
Community and others	49 (16.23)	5	33 (20.63)	3	56 (14.36)	5	2 (.76)	1	140 (12.52)	14
Research & development	2 (.67)	1	0	0	23 (5.90)	4	0	0	25 (2.24)	5
Total	302		160		390		266		1118	

Source: Corporate Annual Reports of the Sample Companies.

The Table shows that all the sample companies in the selected industrial sectors had some form of content-category theme of disclosures. The Table also indicates that content-category theme of Environmental policies and legal compliance was disclosed by the highest number of companies (20 out of 20) among the selected industrial sectors, this is followed by the content-category themes of Material, water and energy, and Employees health and safety, both of which are disclosed by 17 companies during the study period 2009-2013.

Figure 5.4: Total Environmental Disclosures by Content-Category Themes in the Selected Industrial Sectors during 2009-2013

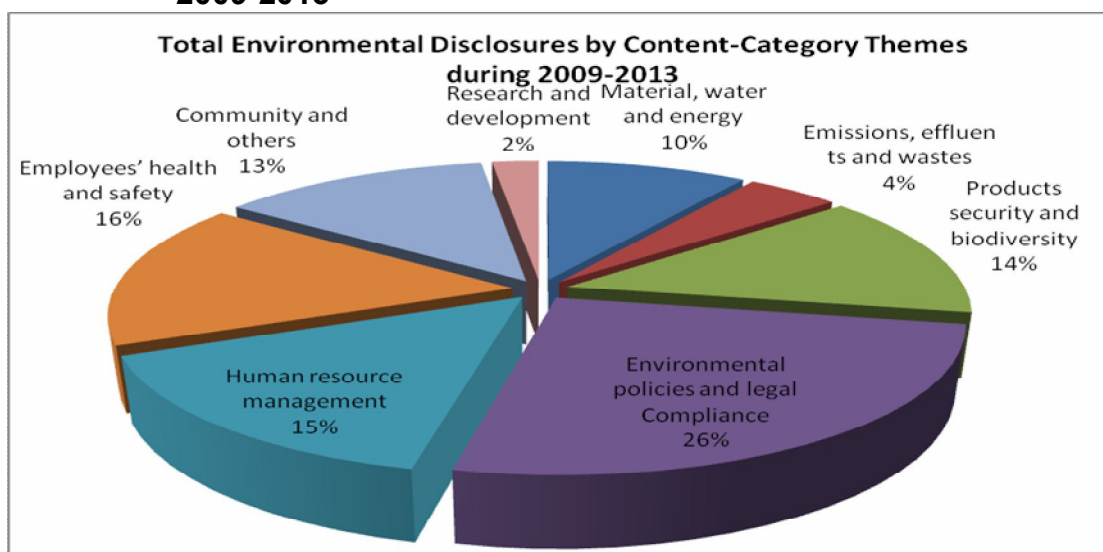


Source: Corporate Annual Reports of the Sample Companies.

Moreover, the Table 5.5 and Figure 5.4 provide a comparative scenario of environmental disclosures by content-category themes among the sample companies of selected industrial sectors in Bangladesh. It is revealed that Cement companies reported 26.16% on Environmental policies and legal compliance, 22.18% on Employees' health and safety and only 0.67% on Research and development theme. On the other hand, Tannery companies disclosed 31.87% of their total environmental disclosures on Environmental policies and legal compliance and 20.63% on Community and others category. It is notable that Tannery companies had no disclosure on content-category theme of Research and development during 2009-2013. But, Pharmaceuticals companies reported 25.65% and 1.79% of their total environmental disclosures

on the themes of Environmental policies and legal compliance and on Emissions, effluents and wastes respectively. Besides, Textiles companies disclosed 22.18% of their total environmental disclosures on Environmental policies and legal compliance and 21.42% on Human resource management, but, they had no disclosure on the theme of Research and development.

Figure 5.5: Percentage Distribution of Total Environmental Disclosures by Content-Category Themes among Sample Industries during 2009-2013



Source: Corporate Annual Reports of the Sample Companies.

Moreover, Figure 5.5 indicates that content-category theme of Environmental policies and legal compliance contained the highest form of disclosures of about 25.85% of total environmental disclosures of the sample companies during the study period 2009-2013. This is followed by the content-category themes of Employee's health and safety, Human resource management and Product security and bio-diversity with percentage distribution score of 16.10%, 15.38% and 13.77% respectively. The Figure also revealed that sample companies disclosed only 4.48% and 2.24% of their total disclosures on the themes of Emissions, effluents and wastes and Research and development respectively. These findings imply that the sample companies in the selected industrial sectors in Bangladesh tend to focus more on Environmental policies and legal Compliance, Employee's health and safety, Community and others and on Human resource management in compared with other content-category themes of environmental disclosures.

Findings from Table 5.5 and Figure 5.5 also imply that there are different patterns in disclosing content category themes among the sample companies of selected industries in Bangladesh. Though all the selected industries reported highest portion of their total environmental disclosures on Environmental policies and legal complacence; there were varieties in percentage in case of other content-category themes of disclosures. These imply that companies are not obligated to report specific types of environmental information and there were no consistent or regulated patterns for content category themes disclosures among the sample companies in Bangladesh.

5.6 Total Environmental Disclosures by Evidence

Table 5.6 and Figure 5.6 provide the analysis of environmental disclosures of sample companies among the selected industrial sectors in Bangladesh in terms of evidence.

Table 5.6 : Total Environmental Disclosures of Sample Companies in Selected Industries by Evidence

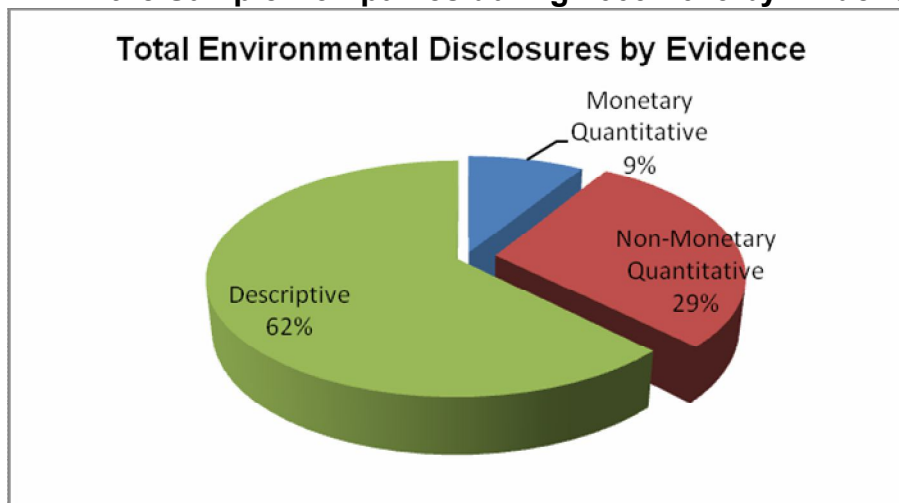
Evidence of Disclosures	Types of Industries							
	Cement		Tannery		Pharmaceuticals		Textiles	
	Total No. of items Disclosed	% of Env. items disclosed	Total No. of items Disclosed	% of Env. items disclosed	Total No. of items Disclosed	% of Env. items disclosed	Total No. of items Disclosed	% of Env. items disclosed
Monetary Quantitative	33	10.93	9	5.63	27	6.92	29	10.90
Non-Monetary Quantitative	80	26.49	53	33.12	89	22.82	97	36.47
Descriptive	189	62.58	98	61.25	274	70.26	140	52.63
Total	302		160		390		266	

Source: Corporate Annual Reports of the Sample Companies.

Table 5.6 presents a comparative analysis of environmental disclosure patterns among the sample companies of selected industrial sectors in Bangladesh. The Table shows that Cement companies reported 10.93% of their total environmental disclosures in terms of monetary quantitative form during the study period 2009-2013. This is followed by Textiles companies and Pharmaceuticals companies and then Tannery companies with a percentage distribution score of 10.90%, 6.92% and 5.63% respectively. The Table further shows that Pharmaceuticals companies disclosed 70.26% of their total environmental disclosures on a descriptive form. This is followed by Cement, Tannery and Textiles companies with percentage distribution value of 62.58%, 61.25% and 52.63% respectively.

Moreover, Figure 5.6 revealed that sample companies among the selected industries disclosed highest 62% of their total environmental disclosures on a descriptive basis during the study period 2009-2013. This is followed by disclosures of information in terms of non-monetary quantitative and monetary quantitative basis with percentage distribution scores of 29% and 9% of their total environmental disclosures respectively.

Figure 5.6 Percentages Distribution of Total Environmental Disclosures of the Sample Companies during 2009-2013 by Evidence



Source: Corporate Annual Reports of the Sample Companies.

The Figure also showed that the sample companies among the selected industries disclosed only about 9% of their total environmental information on a monetary quantitative form. These findings imply that the listed companies among the selected industrial sectors disclosed most of their sustainability information on a descriptive basis rather than other forms of disclosure by evidence.

Findings of this section implied that a consistent pattern of disclosure by evidence do exist among the Cement, Tannery, Pharmaceuticals and Textiles companies in Bangladesh, because each of the selected industrial sectors disclosed highest portion of their total environmental disclosures on a descriptive form and a nominal part of their total environmental disclosures are monetary in nature. This finding is consistent with the findings of Assaduzzaman et al., (2014) which indicates that most of the corporate environmental disclosures in Bangladesh are qualitative in nature.

5.7 Environmental Disclosures of Sample Companies in Terms of Location

Table 5.7 and Figure 5.7 provide details about the location of environmental disclosures within the corporate annual reports of the sample companies in the selected industrial sectors in Bangladesh during the study period 2009-2013.

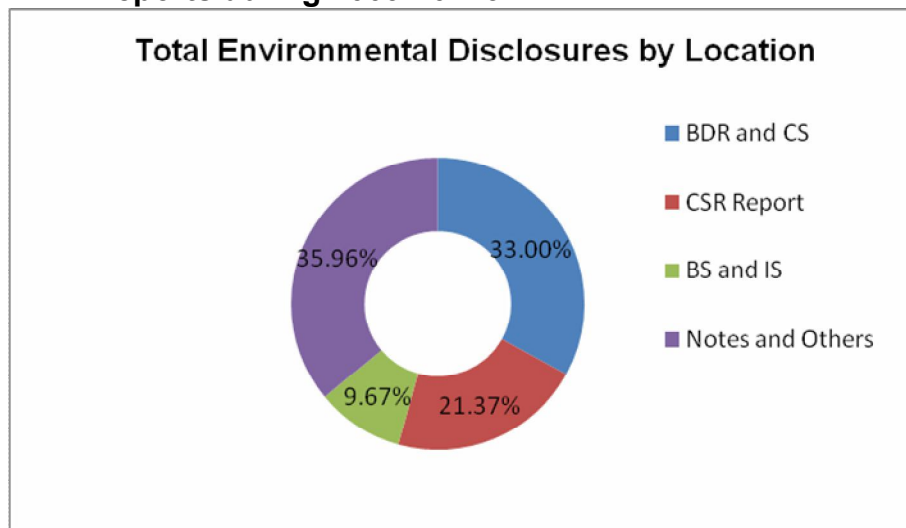
Table 5.7 Total Environmental Disclosures of Sample Companies in the Selected Industries by Location

Location of Disclosures	Types of Industries							
	Cement		Tannery		Pharmaceuticals		Textiles	
	Total No. of items Disclosed	% of Env. items disclosed	Total No. of items Disclosed	% of Env. items disclosed	Total No. of items Disclosed	% of Env. items disclosed	Total No. of items Disclosed	% of Env. items disclosed
BDR and CS	93	30.79	42	26.25	131	33.59	103	38.73
CSR Report	84	27.82	39	24.37	116	29.74	0	0
BS and IS	29	9.60	7	4.38	46	11.80	26	9.77
Notes and Others	96	31.79	72	45	97	24.87	137	51.50
Total	302		160		390		266	

Source: Corporate Annual Reports of the Sample Companies, Note: BDR=Board of Director's Report, CS=Chairman's Statement, CSR report=Corporate Social Responsibility Report, BS=Balance Sheet, IS=Income Statement, and Notes & Others= Notes to the Financial Statements & Annexure and Others Parts of Annual Report.

Table 5.7 shows that Cement companies disclosed highest 31.79% of their total environmental disclosures in the Notes to the Financial Statements & Annexure and only 9.60% in the Balance Sheet and Income Statement. Similarly, Tannery and Textiles companies reported larger part of their total environmental disclosures in the Notes to the Financial Statements & Annexure with a percentage distribution score of 45%, and 51.50% respectively. However, Tannery companies disclosed lowest 4.38% of their total environmental information in the Balance Sheet and Income Statement, but Textiles companies had no disclosures in the CSR Report section of the annual reports. Besides, Pharmaceuticals companies reported highest and lowest portion of their total environmental disclosures in the Board of Director's Report & Chairman's Statement, and in the Balance Sheet and Income Statement respectively with a score of 33.59% and 11.80%. On the other hand, disclosures in CSR Report section of the annual reports contained 27.82%, 24.37% and 29.74% of total environmental disclosures of the Cement, Tannery and Pharmaceuticals companies respectively. These findings imply that companies among the selected industrial sectors did not disclose environmental information in a specific part of their annual reports, and there is no distinct pattern for disclosing corporate environmental information among the sample companies in Bangladesh.

Figure 5.7: Percentage Distribution of Total Environmental Disclosures of the Sample Companies within Different Parts of Annual Reports during 2009-20113



Source: Corporate Annual Reports of the Sample Companies.

Moreover, the Figure 5.7 revealed that sample companies among the selected industries disclosed greater part of their total environmental disclosures in the Notes to the Financial Statements & Annexure with a percentage distribution score of 35.96% during the study period 2009-2013. This is followed by the disclosures in Board of Director's Report and Chairman's Statement, and CSR Report sections of the annual reports of the sample companies that contained 33% and 21.37% of their total environmental disclosures respectively. The Figure also revealed that sample companies disclosed lowest 9.67% of their total environmental disclosures in the Balance Sheet and Income Statement.

5.8 Environmental Disclosures in Terms of News Type

Corporate environmental disclosures of the sample companies have been categorized into positive, negative and neutral information, based on their news-type (see Table 5.8 and Figure 5.8). This approach is used in similar studies to determine the trend and focus of the disclosures (Uwalomwa, 2011; Ullah et al., 2012; Assuzzaman, et al., 2014). This approach is also useful for realizing the motives of the companies behind their environmental reporting practices. Figure 5.8 shows that positive information or the information that reflects credit to the company is the most dominant form of environmental disclosures made by the sample companies among the selected industrial sectors in Bangladesh during

2009-2013. The Table 5.8 revealed that Pharmaceuticals companies reported 88.46% of their total environmental disclosures in terms of positive information. This is followed by the Cement, Textiles and Tannery companies with a percentage distribution score of 86.75%, 82.33% and 81.25% respectively.

Table 5.8: Total Environmental Disclosures of the Sample Companies by News Type in the Selected Industrial Sectors

News types of Environmental Disclosures	Types of Industries							
	Cement		Tannery		Pharmaceuticals		Textiles	
	Total No. of items Disclosed	% of Env. items disclosed	Total No. of items Disclosed	% of Env. items disclosed	Total No. of items Disclosed	% of Env. items disclosed	Total No. of items Disclosed	% of Env. items disclosed
Positive	262	86.75	130	81.25	345	88.46	219	82.33
Negative	3	1	0	0	0	0	0	0
Neutral	37	12.25	30	18.75	45	11.54	47	17.67
Total	302		160		390		266	

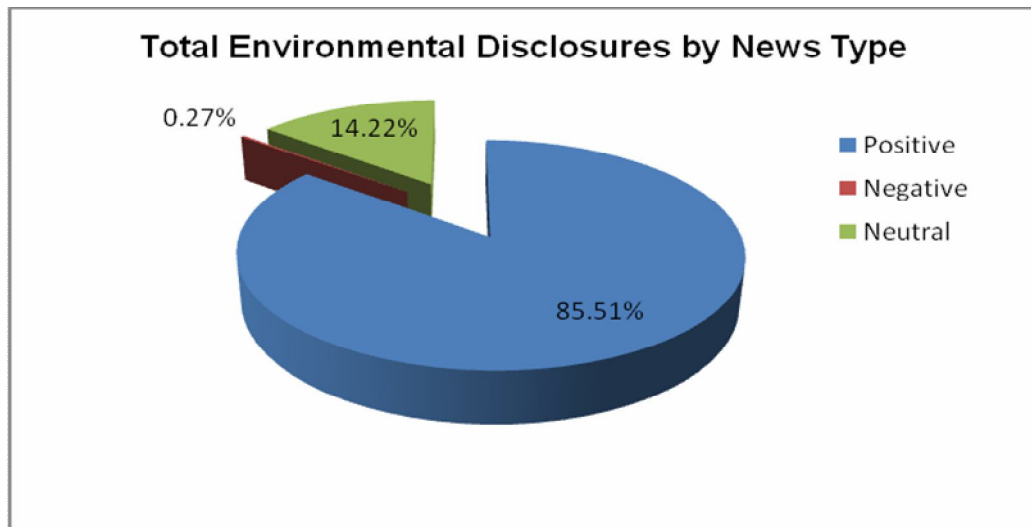
Source: Corporate Annual Reports of the Sample Companies.

The Table also revealed that only the Cement companies reported about 1% of their total environmental disclosures in terms of negative news or in the form of information that reflects discredit to the company, but Tannery, Textiles and Pharmaceuticals companies were fully silent in this regard during the study period. On the other hand, Tannery companies disclosed 18.75% of their total environmental disclosures in the form of neutral news. This is followed by the Textiles, Cement and Pharmaceuticals companies where 17.67%, 12.25% and 11.54% of their total environmental disclosures were also made in the form of neutral news.

Moreover, the Figure 5.8 shows that sample companies disclosed 85.51% and 14.22% of their total environmental disclosures in the form of positive and neutral news respectively. Besides, only 0.27% of their total environmental disclosures were made in the form of negative news during the period of analysis.

Findings from Table 5.8 and Figure 5.8 revealed that most of the sample companies emphasized on reporting of the positive impacts of their products and activities on environment and they were not spontaneous in disclosing negative news or the information that reflects discredit to the company.

Figure 5.8 Percentage Distribution of Total Environmental Disclosures of Selected Companies during 2009-2013 by News Type



Source: Corporate Annual Reports of the Sample Companies.

These findings imply that corporate environmental reporting practices of the sample companies among the selected industrial sectors are merely attempts at improving their image rather than to fulfill stakeholders' needs. The findings also imply that companies wish to be considered as being good corporate citizens by disclosing environmental performance related information.

Chapter Six

Analysis of Perceptions of Stakeholders on Environmental Reporting Practices of Listed Manufacturing Companies in Bangladesh

6.1 Introduction

The aim of this chapter is to provide analysis on manifold perceptions of five selected stakeholder groups regarding environmental reporting practices of the listed manufacturing companies in Bangladesh. A questionnaire survey of the stakeholder population was conducted in order to explore the perceptions of selected stakeholders concerning the various aspects of the reporting practices. The questionnaire was mainly divided into two key parts. The first part of the questionnaire gathered information regarding the age, occupation, educational qualifications, working experience and professional membership of the respondents. The second part is further divided into some sub-sections mainly addressing issues on concept of environmental reporting, significance of environmental reporting, influence of environmental disclosure on the corporate relationships with the stakeholders, motives of listed manufacturing companies behind environmental reporting practices, nature and extent of environmental reporting practices of the listed manufacturing companies, and environmental reporting related rules and regulations in Bangladesh. The questionnaire also set a question, with a view to explore the perceptions of multiple stakeholder groups regarding the importance of the eight content-category themes of our 'disclosure index' for establishing ideal environmental reporting practices in Bangladesh. Besides, questions on the subject of credibility of environmental disclosures and needs of external audit were also included in the questionnaire. In addition, the respondents were asked questions regarding the limiting factors of environmental reporting in Bangladesh. Moreover, the survey participants were also requested to put their suggestions for the development of environmental reporting practices in Bangladesh. The analysis of this chapter was carried out based on the use of SPSS version 15 statistical programme.

6.2 Age and Working Experiences of Respondents

The table 6.1 provides the survey results on age and length of working experience of different respondent groups. The respondent-groups are: Accounts Executives (SG-1) and Internal Auditors (SG-2) of the sample companies, External Auditors (SG-3), Members of the Regulatory Bodies (SG-4) and Environmental Activists (SG-5). The table shows that a large majority of the respondents were within the age brackets of 40 years and above, and within the age range of 25-30 years comprised a least number of respondents among the selected stakeholder groups with a percentage distribution scores of 37.65% and 10.59% respectively.

Table: 6.1: Age and Experiences of Respondents

Variables	Stakeholders Groups											
	SG-1		SG-2		SG-3		SG-4		SG-5		Total	
	F	%	F	%	F	%	F	%	F	%	F	%
Average Age:												
25- 30 years	3	15	4	20	2	10	1	6.66	1	10	9	10.59
31-35 years	4	20	3	15	4	20	4	26.67	1	10	18	21.18
36-40 years	4	20	5	25	8	40	6	40	3	30	26	30.58
40 years and above	9	45	8	40	6	30	4	26.67	5	50	32	37.65
Length of work experience:												
Less than 3 years	3	15%	3	15%	0	0	0	0	1	10%	7	8.24%
3 to 5 years	5	25%	7	35%	1	5%	2	13.33%%	1	10%	16	18.82%
5 to 10 years	5	25%	6	30%	2	10%	4	26.67%	3	30%	20	23.53%
10 years & above	7	35%	4	20%	17	85%	9	60%	5	50%	42	49.41%

Source: Field survey. Note: F=Frequency, SG-1= Accounts Executives Group, SQ-2=Internal Auditors, SG-3=Professional Accountants (CA). SG-4=Member of the Regulatory Bodies, SG-5=Environmental Activists.

In terms of length of working experience, it was revealed that a major part of the entire respondents had more than 10 years of working experience which is at 49.41%, and only 8.24% had less than 3 years of working experience. Within the stakeholder groups, External Auditors (CA) was ranked first (85%) for more than 10 years of professional experience, this is followed by Member of the Regulatory Bodies and Environmental Activist groups with a percentage distribution score of 60% and 50% respectively. But, in case of Accounts Executives and Internal Auditors of the sample companies, this rate was only 35% and 20% respectively.

Table 6.2 introduces qualifications of different stakeholder groups. The questionnaire suggested two possible categories of qualifications for respondents such as academic qualifications and professional qualifications. The academic

qualifications of the respondents range from a Bachelor degree to PhD or equivalent. On the other hand, membership of professional accounting bodies like ICAB, Association of Corporate Chartered Accounts (ACCA) and Institute of Cost and Management Accountants of Bangladesh (ICMAB) is considered as professional qualifications of the respondents.

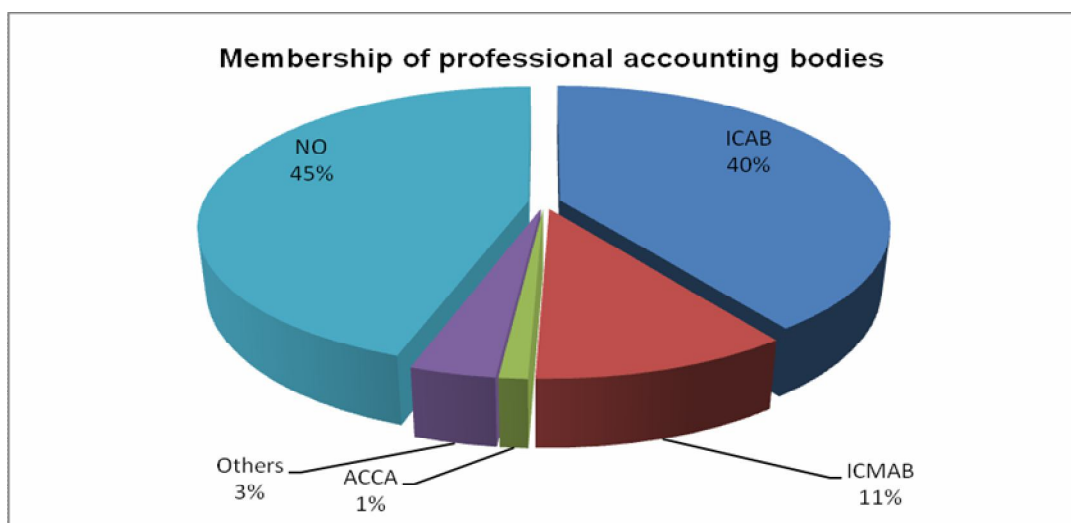
Table: 6.2: Academic and Professional Qualifications of Respondents

Variables	Stakeholders Groups											
	SG-1		SG-2		SG-3		SG-4		SG-5		Total	
	F	%	F	%	F	%	F	%	F	%	F	%
Academic qualification												
Bachelor or equivalent	1	5%	2	10%	5	25%	0	0%	1	10%	9	10.59%
Master degree or equivalent	19	95%	18	90%	15	75%	13	86.67%	9	90%	74	87.06%
PhD. Or equivalent	0	0%	0	0%	0	0%	2	13.13%	0	0%	2	2.35%
Field of Study (for Bachelor Degree)												
Business Studies	20	100%	18	90%	19	90%	5	33.33%	2	20%	64	75.30%
Social Science	0	0%	0	0%	0	0%	7	46.67%	7	70%	14	16.47%
Science & Others	0	0%	2	10%	1	10%	3	20%	1	10%	7	8.23%
Professional Accounting Bodies												
ICAB	9	45%	5	25%	19	95%	1	6.67%	0	0%	34	40%
ICMAB	5	25%	3	15%	0	0%	1	6.67%	0	0%	9	10.59%
ACCA	0	0%	0	0%	1	5%	0	0%	0	0%	1	1.18%
Others	3	15%	0	0%	0	0%	0	0%	0	0%	3	3.52%
NO	3	15%	12	60%	0	0%	13	86.66%	10	100%	38	44.71%

Source: Field survey. Note: F=Frequency, SG-1= Accounts Executives Group, SG-2=Internal Auditors, SG-3=Professional Accountants (CA). SG-4=Member of the Regulatory Bodies, SG-5=Environmental Activists.

The table shows that majority of the total respondents (87.06%) had obtained a Master degree. This is followed by the respondents who acquired only a Bachelor degree with a percentage distribution score of 10.59%, and only two respondents (both from the stakeholders group of Member of the Regulatory Bodies) acquired higher academic qualification such as, Doctor of philosophy (PhD). It is also evident that most of the respondents (75.30%) obtained a Bachelor degree in business studies or related field.

Figure 6.1: Percentage Distribution of Survey Respondents for the Membership of Professional Accounting Bodies



Source: Field survey.

Figure 6.1 demonstrates that 55% of the total respondents had membership with one or more professional accounting bodies. Besides, Table 6.2 shows that 95% participants of the External Auditors group had a membership of ICAB and only one external auditor had a membership of ACCA. Among the Accounts Executives, 45% had a membership of ICAB, and 25% of Internal Auditors had membership of ICAB. Moreover, it is also found that a total of 9 (10.59%) respondents had dual membership of ICAB and ICMAB.

6.3 Perceptions of the Stakeholders Regarding the Concept of Environmental Reporting

The purpose of this section is to address the following research question of this study-

- What are the levels of understanding of different stakeholder groups regarding the concept of environmental reporting?

The respondents were requested to indicate their levels of understanding regarding the concept of environmental reporting based on a 5-point Likert Scale with one representing 'this is an unknown term to me' and five representing 'excellent understanding on environmental reporting and its purpose'. Table 6.3 provides a closer look at the levels of understanding of the selected stakeholder groups on the concept of environmental reporting.

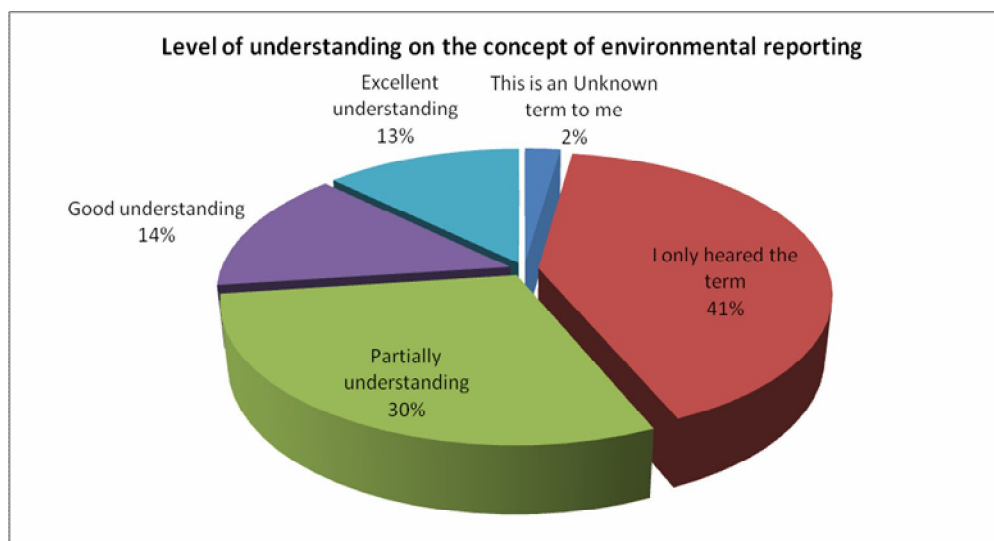
Table: 6.3: Descriptive Statistics on the Levels of Understanding of the Stakeholder Groups on the Concept of Environmental Reporting.

Respondent Groups	Descriptive statistics	
	Mean	std
Accounts Executives	2.90	.94
Internal Auditors	2.55	1.09
Professional Accountants (CA)	3.4	.89
Member of the Regulatory Bodies	2.87	1.12
Environmental Activists	3.00	1.25
Total Respondents	2.94	1.09

Source: Field survey. Note: std =Standard Deviation, SQ 1=Questionnaire's Item No-1.

The table indicates that response on the first item of the questionnaire provides a means score of 2.94 on a 5-point scale, and a standard deviation of 1.09 among the respondents groups. This result indicates low state of understanding of stakeholders regarding the concept of environmental reporting.

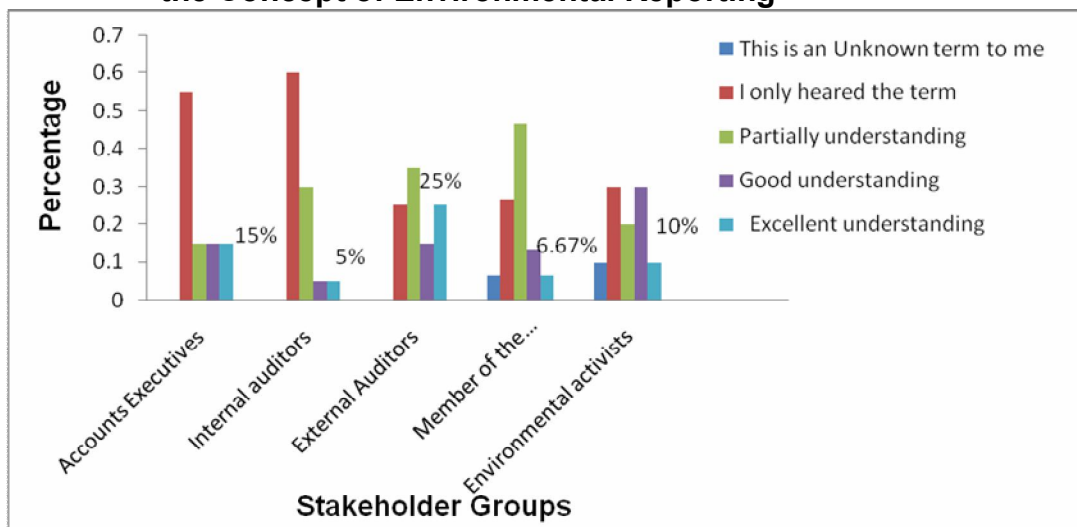
Figure 6.2: Levels of Understanding of Respondents on the Concept of Environmental Reporting



Source: Field survey.

Besides, Figure 6.2 reveals that 12.94% participants of entire respondents had excellent understanding on the concept of environmental reporting, while 41.18% participants claimed that they only heard the term. In addition, 14.12% participants had good understanding and 29.41% participants had partially understanding on the concept. But, about 2% respondents claimed that environmental reporting was an unknown term to them.

Figure 6.3: Levels of Understanding of Selected Stakeholder Groups on the Concept of Environmental Reporting



Source: Field survey.

Moreover, Figure 6.3 shows that 35% of the External Auditors had good understanding on the concept. Besides, 55% of Accounts Executives and 60% of Internal Auditors claimed that they only heard the term. In addition, 30% of the Environmental Activists specified that they had good understanding on the concept, whereas 46.67% participants of the Members of the Regulatory Bodies claimed that they had partially understanding on the concept of environmental reporting. In the light of the above discussion it is revealed that overall understanding level of survey respondents among the selected stakeholder groups is low. This result is consistent with the findings of Belal & Owen, (2004) which also indicate a low state of awareness of stakeholders on the concept of environmental reporting in Bangladesh. The study of Asadozzaman et al. (2014) revealed that most of their interviewees mentioned that there is a need for education on sustainable development to increase the awareness of corporate stakeholders in Bangladesh.

6.4 Responses of the Stakeholders on Significance of Environmental Reporting

With the purpose of exploring the answer of the following research question, the survey participants were requested to rank their perceptions on significance of environmental reporting on a 5-point Likert Scale with one representing strongly disagree and five representing strongly agree-

- What are the perceptions of different stakeholder groups regarding the significance of environmental reporting practices of listed manufacturing companies in Bangladesh?

Table 6.4 introduces the descriptive statistics of responses of survey participants on items SQ2 to SQ4 in the questionnaire as these relate to the significance of environmental reporting practices of the organizations.

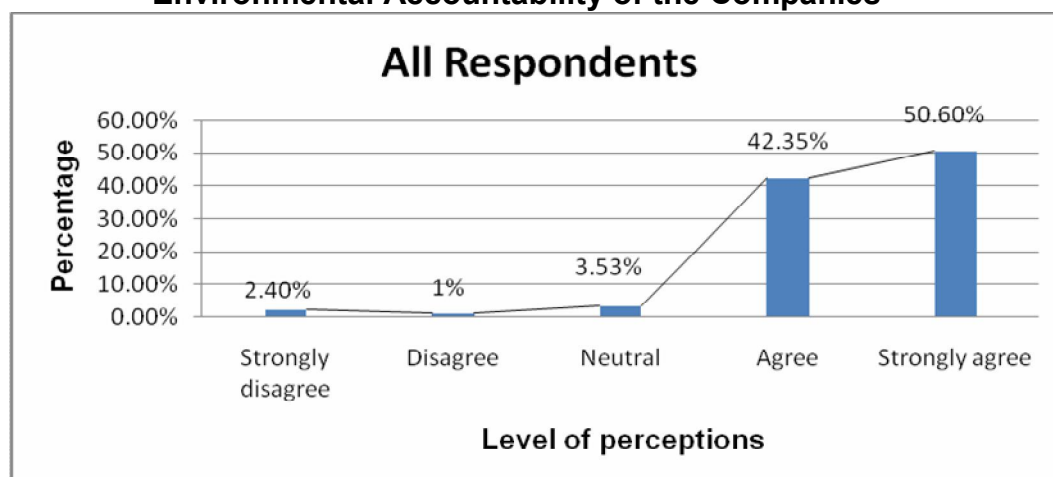
Table 6.4: Descriptive Statistics on Perceptions of Selected Stakeholder Groups Regarding the Significance of Environmental Reporting

Respondent Groups	Descriptive Statistics					
	SQ-2		SQ-3		SQ-4	
	Mean	Std	Mean	std	Mean	std
Accounts Executives	4.65	.49	4.65	.49	4.50	.76
Internal Auditors	4.25	.55	4.25	.84	4.00	.86
Professional Accountants (CA)	4.20	1.00	4.4	.68	4.56	.61
Member of the Regulatory Bodies	4.60	.51	4.53	.52	4.47	.52
Environmental Activists	4.20	1.31	4.20	.92	4.6	.52
Total Respondents	4.39	.79	4.42	.64	4.40	.71

Source: Field survey, Note: std=Standard Deviation, SQ2=Survey Questionnaire's Item No-2, SQ 3= Survey Questionnaire's Item No-3, SQ4= Survey Questionnaire's Item No-4.

Figure 6.4 provides percentage distribution of the levels of perceptions of the respondents on significance of environmental reporting in improving environmental accountability of the companies (item SQ2 of the questionnaire). The result indicates that 93% of the entire respondents were either agreed or strongly agreed with the view that environmental reporting practice can improve the environmental accountability of the companies.

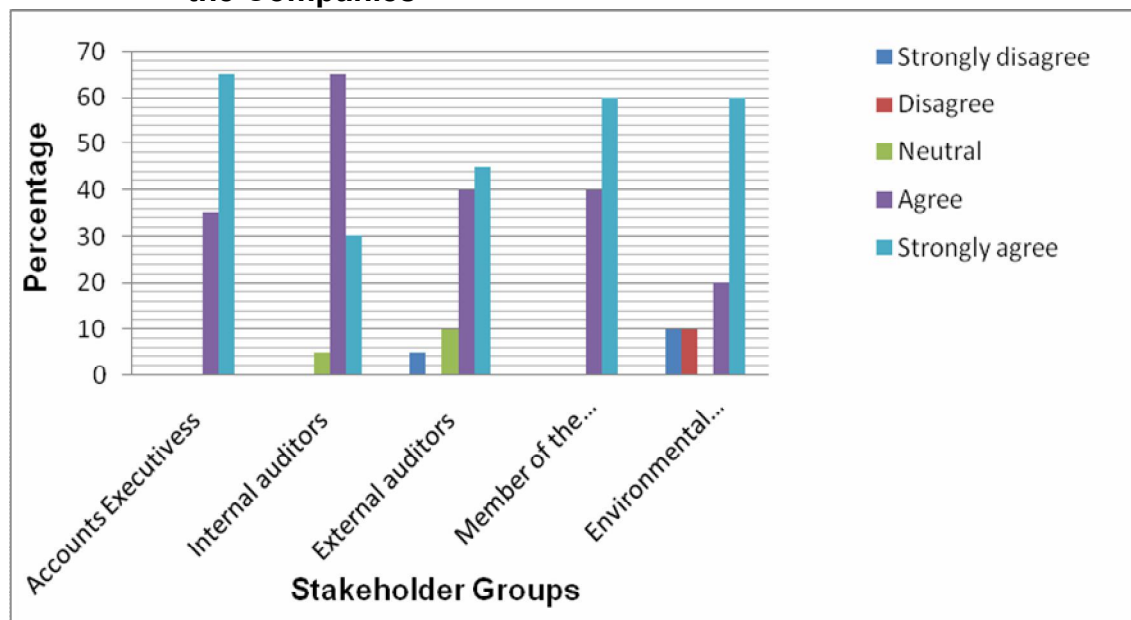
Figure 6.4: Levels of Perceptions of Stakeholders Regarding the Significance of Environmental Reporting in Improving the Environmental Accountability of the Companies



Source: Field survey.

This finding is reflected in the mean and standard deviation value of about 4.39 and .79 respectively (Table 6.4). In this regard,, Figure 6.5 shows the group comparison results which indicate that most of the participants of selected stakeholder groups such as, the Accounts Executives, Internal Auditors, External Auditors, Member of the Regulatory Bodies and Environmental Activists groups were also positive to the concept, which is further reflected in the mean values of the stakeholder groups (means 4.65, 4.25, 4.20, 4.60 and 4.20 respectively).

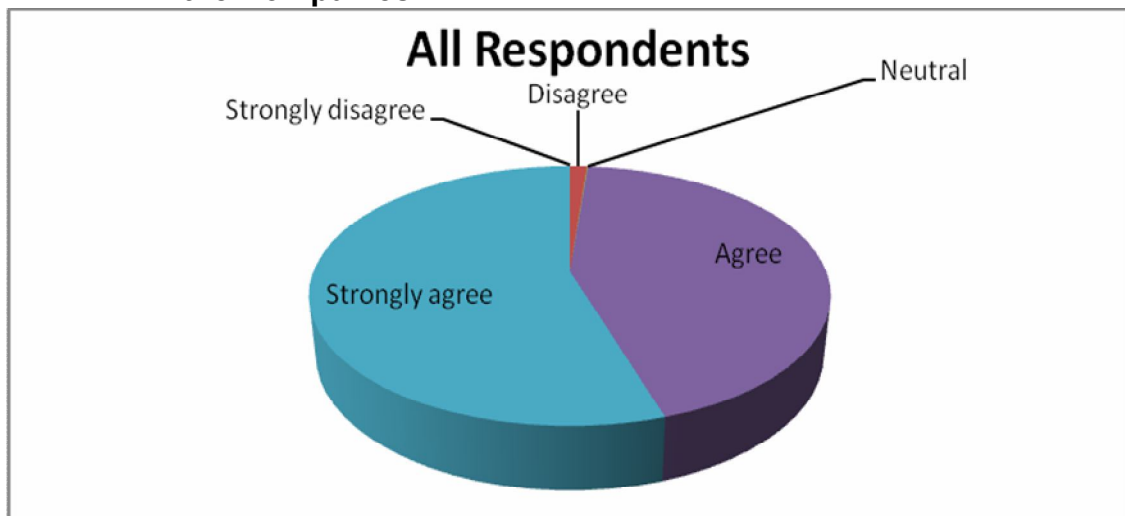
Figure 6.5: Percentage Distribution of Levels of Perceptions of Selected Stakeholder Groups on Significance of Environmental Reporting in Improving the Environmental Accountability of the Companies



Source: Field survey.

On the other hand, Table 6.4 indicates that that response of the participants on SQ3 provides a mean score of 4.42 and a standard deviation result of .64. Besides, Figure 6.6 shows that 92.93% of the total respondents either supported or strongly supported the notion that disclosure of environmental information can improve the corporate image of the manufacturing companies.

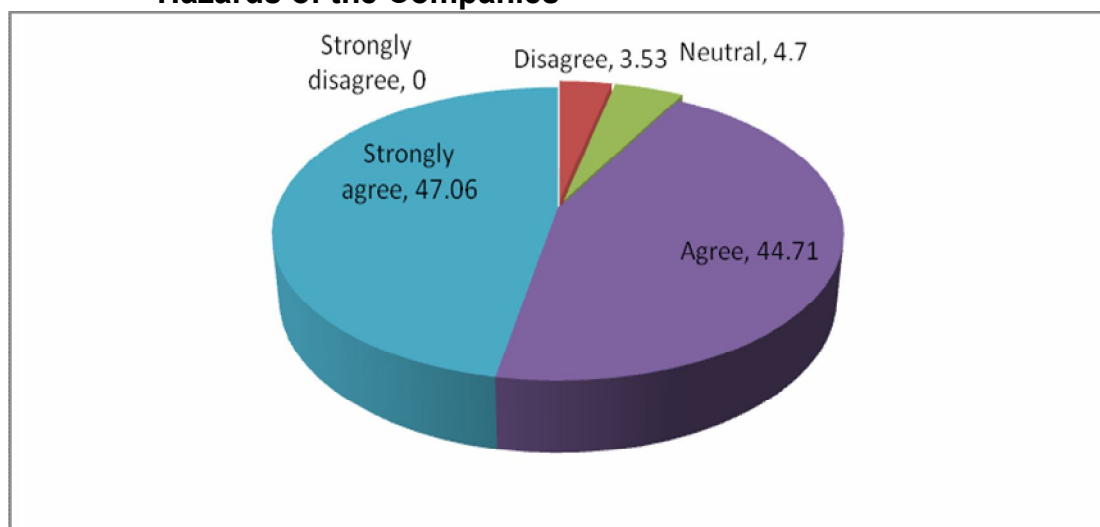
Figure 6.6: Percentage Distribution of Views of Respondents on the Role of Environmental Reporting in Improving Corporate Image of the Companies



Source: Field survey.

Moreover, the group comparison results (Appendices-C) showed that most of the respondents of selected stakeholder groups firmly believed that environmental reporting is an important means for improving the overall environmental performance and image of the corporate organizations. This finding is consistent with the study of Hossain et al. (2014) which concluded that both managerial and non-managerial stakeholders considered environmental reporting as an important way of improving the corporate image of the Bangladeshi companies.

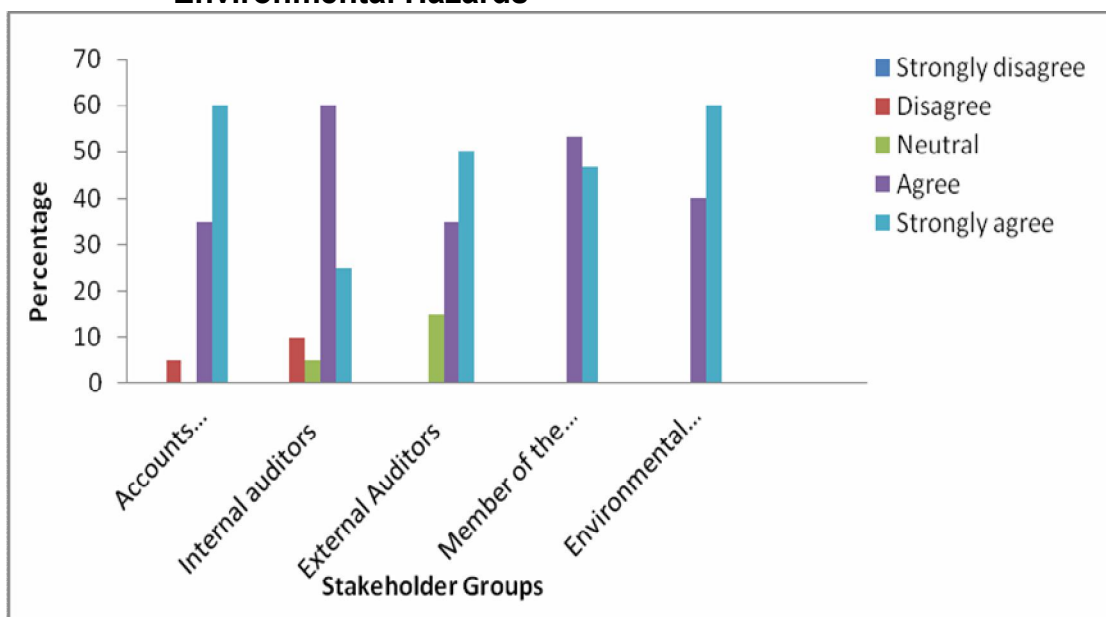
Figure 6.7: Percentage Distribution of Views of Respondents on the Role of Environmental Reporting in Reducing Environmental Hazards of the Companies



Source: Field survey.

Concerning to item SQ4 of the questionnaire, Figure 6.7 indicates that 91.77% of the total survey respondents either agreed or strongly agreed with the view that environmental reporting practice can play a significant role in reducing environmental hazardous activities of the companies. This result is further supported by the mean and standard deviation scores of about 4.40 and .71 respectively (Table 6.4).

Figure 6.8: Percentage Distribution of Views of Different Stakeholder Groups on the Role of Environmental Reporting in Reducing Environmental Hazards



Source: Field survey.

Furthermore, Figure 6.8 revealed that 60% participants of Accounts Executives and Environmental Activists groups were also strongly agreed with the notion.

6.5 Influence of Environmental Disclosures on the Corporate Relationship with the Stakeholders

The aim of this section is to introduce analysis on the perceptions of different stakeholder groups regarding the influence of environmental reporting on the corporate relationships with the stakeholders, as it relates to the following research question of our study-

- To what extent does the disclosure of environmental information influence the corporate relationships with the stakeholders?

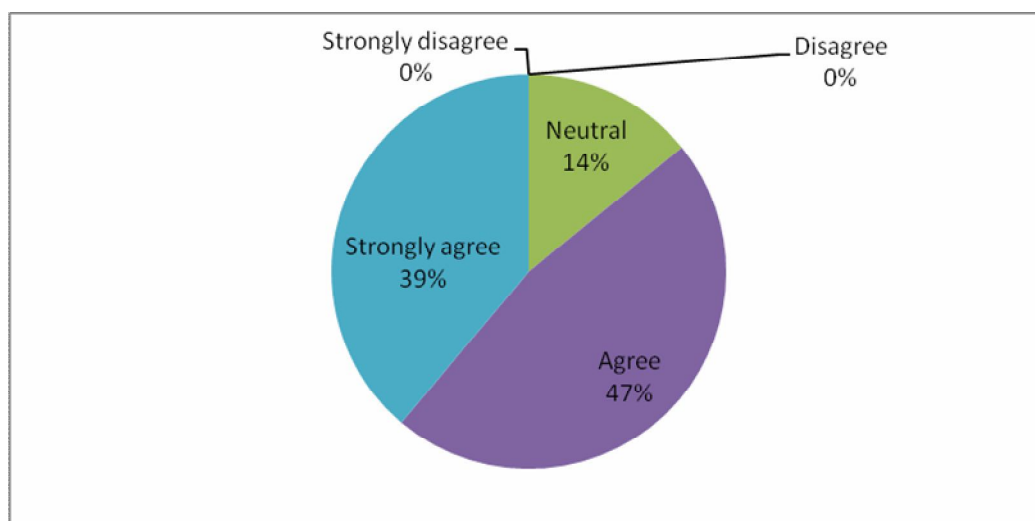
Table 6.5: Descriptive Statistics of Perceptions of Selected Stakeholder Groups Regarding the Influence of Environmental Disclosures on the Corporate Relationship with the Stakeholders

Respondent Groups	Descriptive Statistics	
	SQ-5	
	Mean	std
Accounts Executives	4.50	.61
Internal Auditors	3.90	.79
Professional Accountants (CA)	4.1	.72
Member of the Regulatory Bodies	4.33	.49
Environmental Activists	4.40	.52
Total Respondents	4.22	.68

Source: Field survey. Note: std=Standard Deviation, SQ5=Survey Questionnaire's Item No-5.

Table 6.5 and Figure 6.9 reveal that 85.88% of the survey respondents among the stakeholder groups were either agreed or strongly agreed with the concept that environmental disclosures of the companies can influence the corporate relationship with the stakeholders. This result is reflected in the mean and standard deviation values of 4.22, and .68 respectively.

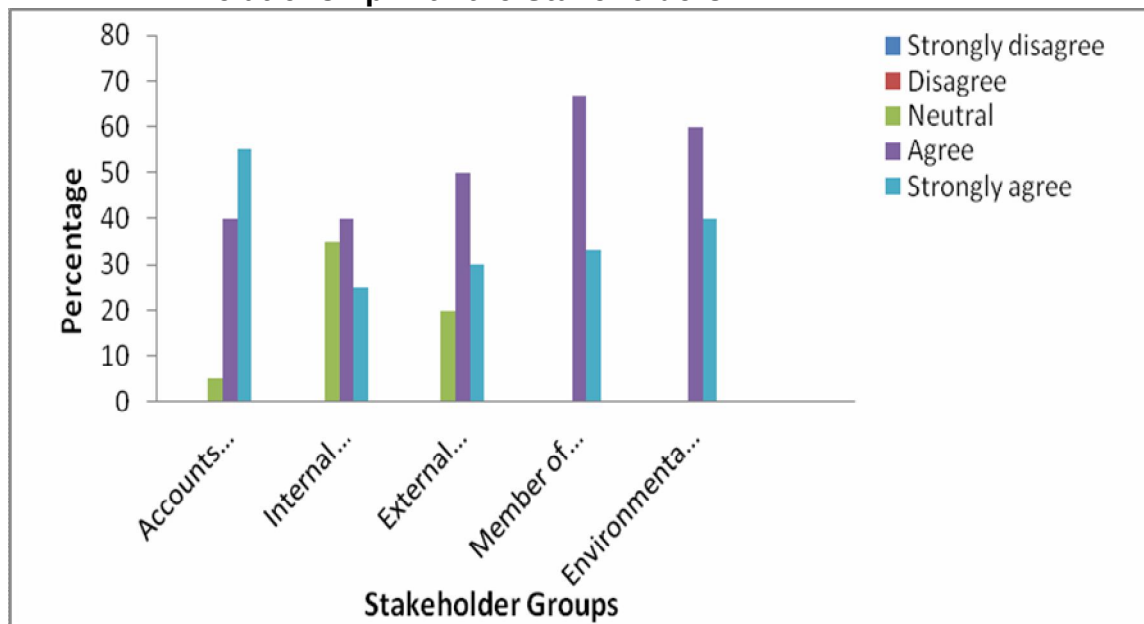
Figure 6.9: Perceptions of Respondents Regarding the Influence of Environmental Reporting on the Corporate Relationship with the Stakeholders



Source: Field survey.

Besides, Figure 6.10 provides the group comparison results, which indicates that most of the participants of Member of the Regulatory Bodies and Environmental Activists groups were only agreed with the concept with a percentage distribution value of 66.67% and 60% respectively, while 55% respondents of Accounts Executives group were strongly positive regarding the notion. These outcomes are consistent with study of Uwalomwa (2011).

Figure 6.10: Perceptions of Different Stakeholder Groups Regarding the Influence of Environmental Reporting on the Corporate Relationship with the Stakeholders



Source: Field survey.

These findings are supported by the basic notion of Stakeholder Theory which states that organization's success is dependent upon the successful management of all the relationship that a organization has with its stakeholders (Clarckson, 1995; Gray et al., 1996). Furthermore, these results are also accorded with the basic concept of Legitimacy Theory, which pronounced that organizations' survival is dependent upon the continuous support of the society in which they operate. So, in order to achieve fair acceptance to the host community, it is essentially necessary for organizations to improve their environmental performance and also disclose such information to the stakeholders, which is must for the existence of the organizations.

6.6 Perceptions Regarding the Environmental Performance of the Listed Manufacturing Companies in Bangladesh

The survey participants were requested to rank their opinions on a 5-point Likert Scale regarding the environmental performance of the listed manufacturing companies in Bangladesh.

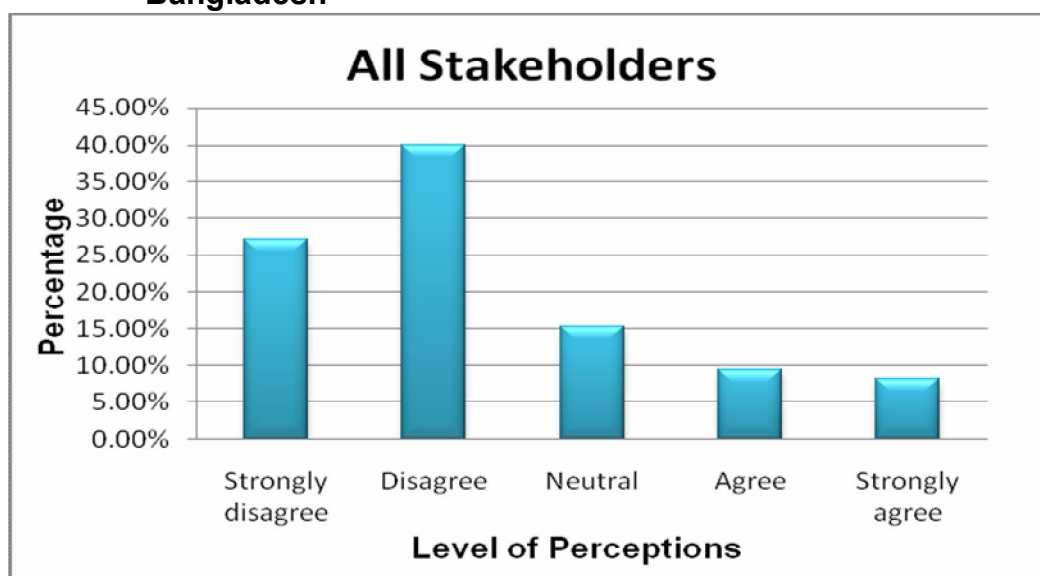
Table 6.6: Descriptive Statistics of Perceptions of Survey Participants on the Environmental Performance of the Listed Manufacturing Companies in Bangladesh

Respondent Groups	Descriptive Statistics of SQ-6	
	Mean	std
Accounts Executives	1.85	.671
Internal Auditors	1.85	.813
Professional Accountants (CA)	2.15	.933
Member of the Regulatory Bodies	2.20	1.082
Environmental Activists	4.70	.483
Total Respondents	2.32	1.207

Source: Field survey. Note: std=Standard Deviation, SQ6=Survey Questionnaire's Item No-6,

Table 6.6 and Figure 6.11 reveal that a larger part of the respondents were either disagreed or strongly disagreed with the notion that the activities of Bangladeshi listed manufacturing companies are environment friendly. This is reflected in the mean and percentage distribution value of 2.32 and 67.06% respectively.

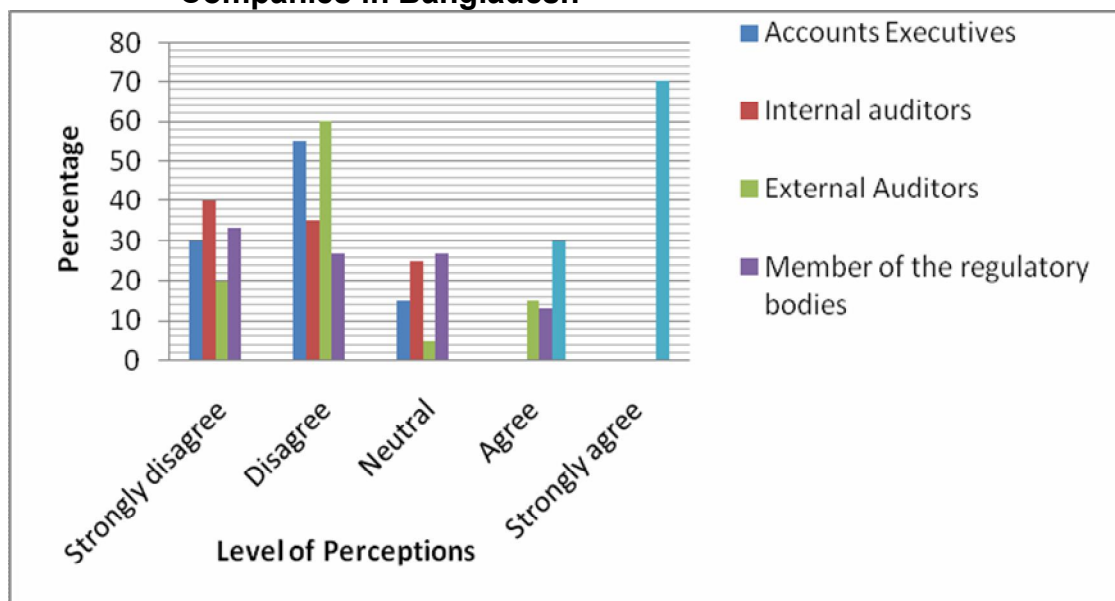
Figure 6.11: Perceptions of Stakeholders Regarding the Environmental Performance of Listed Manufacturing Companies in Bangladesh



Source: Field survey.

Figure 6.12 indicates that most of the participants of Accounts Executives, External Auditors and Environmental Activists groups were also negative in their opinions regarding the notion with a percentage distribution score of 55%, 60% and 50% respectively.

Figure 6.12: Perceptions of Stakeholder Groups Regarding the Environmental Performance of Listed Manufacturing Companies in Bangladesh



Source: Field survey.

Similar views were revealed in the recent study of Belal and Owen (2006) and Asaduzzaman et al (2014).

6.7 Nature and Extent of Environmental Reporting Practices of Listed Manufacturing Companies in Bangladesh

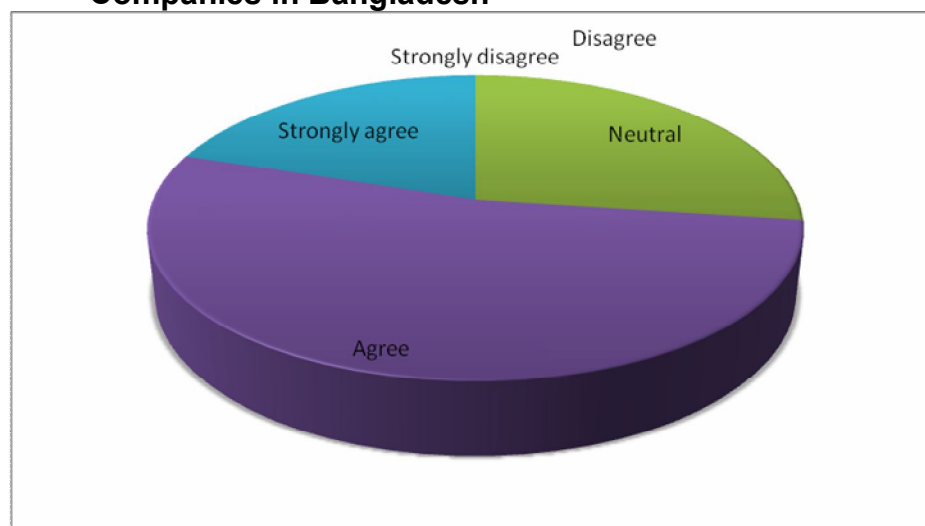
The aim of this section is to address the following research question of the present study-

- What are the perceptions of different stakeholder groups regarding the nature and extent of environmental reporting practices of listed manufacturing companies in Bangladesh?

Table 6.7 presents the descriptive statistics for the perceptions of the survey respondents on items SQ7 to SQ8 of the questionnaire, which are related to the nature and extent of environmental reporting practices of listed manufacturing companies in Bangladesh. Figure 6.13 reveals that 72.90% of entire survey

participants were positive in their opinions concerning the concept that the extent of environmental reporting practices of the listed manufacturing companies in Bangladesh is negligible.

Figure 6.13: Perceptions of Stakeholders Regarding the Extent of Environmental Reporting Practices in Listed Manufacturing Companies in Bangladesh



Source: Field survey.

This result is further reflected in the mean and standard deviation scores of 3.93 and .69 respectively. Accordingly, most of the participants of selected stakeholder groups were also supported the notion. It is noteworthy that perceptions of stakeholders regarding the extent of environmental disclosures of the sample companies are accorded with the actual environmental disclosures scenario of the sample companies (introduced in Figure 5.5 of chapter five). Moreover, this result is consistent with the findings of Belal (2006) which concluded that Bangladeshi companies are doing little or no environmental reporting.

Table 6.7: Perceptions of Stakeholder Groups Regarding the Nature and Extent of Environmental Reporting Practices of Listed Manufacturing Companies in Bangladesh

Respondent Groups	Descriptive Statistics			
	SQ-7		SQ-8	
	Mean	std	Mean	std
Accounts Executives	3.90	.53	3.70	.73
Internal Auditors	3.85	.67	3.75	.64
Professional Accountants (CA)	3.90	.72	3.25	.79
Member of the Regulatory Bodies	3.73	.70	3.00	1.19
Environmental Activists	4.50	.71	4.40	.84
Total Respondents	3.93	.69	3.56	.92

Source: Field survey. Note: std=Standard Deviation, SQ7=Survey Questionnaire's Item No-7, SQ8=Survey Questionnaire's Item No-8,

Similarly, response to item SQ8 of the questionnaire revealed that majority of the respondents were agreed with notion that Bangladeshi manufacturing companies disclose highest portion of their environmental information on a descriptive manner. This finding is supported by the mean and percentage distribution value of 3.56 and 56.47% respectively. This result is accorded with the findings of Ullah et al. (2012) and Hossain et al. (2006).

6.8 Motives of Listed Manufacturing Companies behind Environmental Reporting Practices

The purpose of this section is to address the following research question of the present study-

- What are the perceptions of stakeholders regarding the motives of listed manufacturing companies in Bangladesh behind environmental reporting practices?

Table 6.8 presents the descriptive statistics of the perceptions of the survey respondents on items SQ9 and SQ10 of the questionnaire, which are related to the motives of listed manufacturing companies behind environmental reporting practices.

Table 6.8: Descriptive Statistics of Perceptions of Selected Stakeholder Groups Regarding the Motives of Listed Manufacturing Companies behind Environmental Reporting Practices

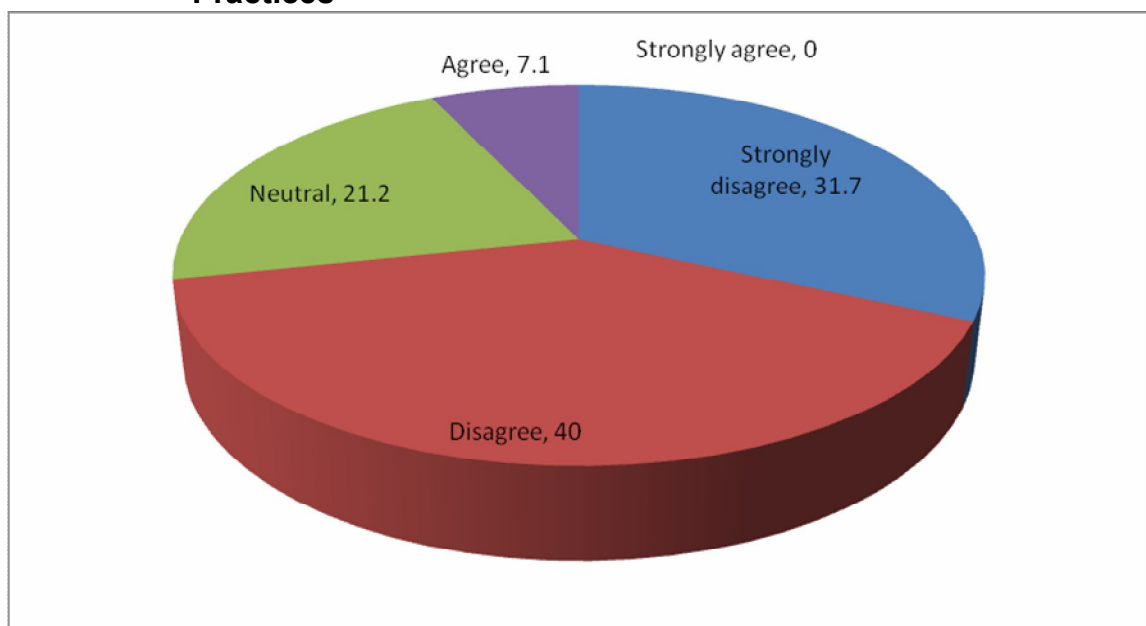
Respondent Groups	Descriptive Statistics			
	SQ-9		SQ-10	
	Mean	std	Mean	std
Accounts Executives	2.20	.951	3.80	.834
Internal Auditors	1.90	1.02	3.85	.671
Professional Accountants (CA)	2.35	.745	3.80	1.005
Member of the Regulatory Bodies	1.67	.724	4.07	.704
Environmental Activists	1.90	.994	3.30	1.059
All Respondents	2.04	.906	3.80	.856

Source: Field survey. Note: std =Standard Deviation, SQ9=Survey Questionnaire's Item No-9, SQ10=Survey Questionnaire's Item No-10.

To determine the levels of perceptions of respondents regarding the motives of listed manufacturing companies in Bangladesh behind environmental reporting practices, the participants were requested to rank their opinions on a 5-point Likert Scale with one representing strongly disagree and five representing strongly agree.

Figure 6.14 shows that 71.70% of the entire survey respondents were either disagreed or strongly disagreed with the notion that most of the Bangladeshi manufacturing companies disclose environmental information for demonstrating transparency of their operations, while, only 7.10% participants were agreed with the idea. This is reflected in the mean and standard deviation value of 2.04 and .906 respectively.

Figure 6.14: Perceptions of Stakeholders Regarding the Motives of Listed Manufacturing Companies behind Environmental Reporting Practices



Source: Field survey.

The analysis (Appendix-C) also revealed that a large majority of the survey participants were positive in their opinions to the concept that Bangladeshi listed manufacturing companies disclose environmental information for improving corporate image rather than to fulfil stakeholders' needs. This result is supported by the mean and percentage distribution value of 3.80 and 68.24% respectively. It is further revealed that most of the respondents of the selected stakeholder groups were also agreed with the notion. Similarly, Belal and Owen (2006) concluded that Bangladeshi companies report environmental information with a view to improve their corporate image.

6.9 Credibility Issue and Needs of External Audit of Environmental Disclosures

This section will provide analysis with the aim of addressing the following research question-

- What are the perceptions of different stakeholder groups regarding the credibility and needs of external audit of environmental disclosures in the Annual Reports of selected listed manufacturing companies in Bangladesh?

Table 6.9 introduces the descriptive statistics for the responses of survey participants on the items SQ11 and SQ12 in the questionnaire, as these relate to the credibility issue and needs of external audit of the environmental disclosures of listed manufacturing companies in Bangladesh.

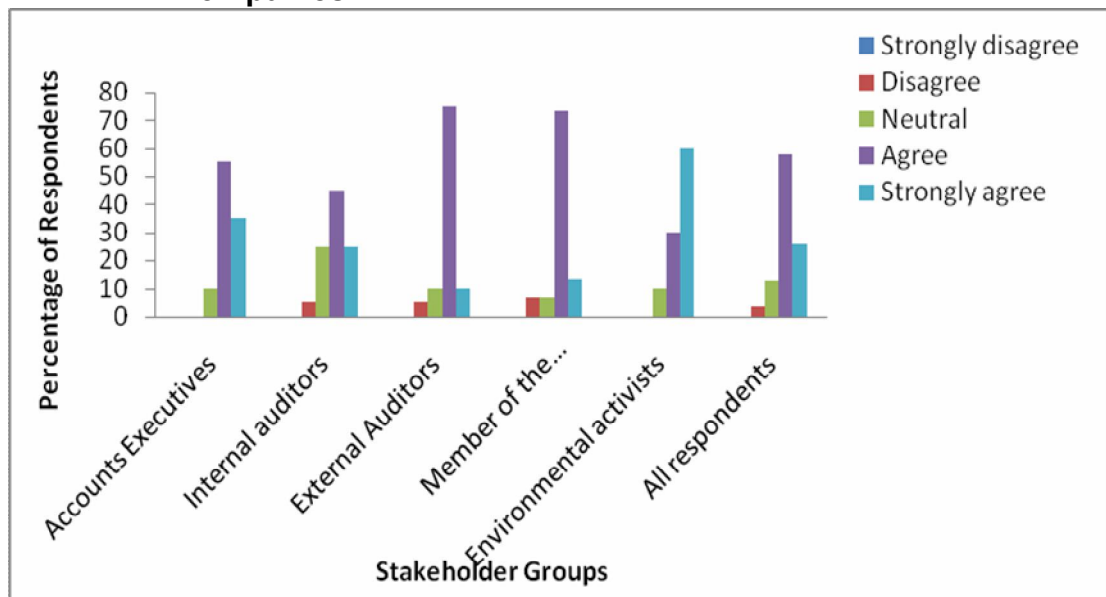
Table 6.9: Perceptions of Stakeholder Groups Regarding the Credibility and Needs of External Audit of Environmental Reports

Respondent Groups	Item of the questionnaire			
	SQ-11		SQ-112	
	Mean	std	Mean	std
Accounts Executives	4.25	.639	4.05	.686
Internal Auditors	3.90	.852	3.85	.671
Professional Accountants (CA)	3.90	.641	4.10	.641
Member of the Regulatory Bodies	3.93	.704	4.33	.724
Environmental Activists	4.50	.707	4.60	.699
All Respondents	4.06	.730	4.13	.704

Source: Field survey. Note: std =Standard Deviation, SQ11=Survey Questionnaire's Item No-11, SQ12=Survey Questionnaire's Item No-12.

To determine the level of perceptions of respondents concerning the credibility of environmental disclosures of the listed manufacturing companies in Bangladesh, the participants were requested to rank their opinions on a 5-point Likert Scale with one representing strongly disagree and five representing strongly agree. Table 6.9 and Figure 6.15 reveal that majority of the survey respondents either agreed or strongly agreed with the notion that environmental disclosures of the listed manufacturing companies in Bangladesh do not reflect the real environmental performance of the companies. These outcomes are reflected in the percentage and mean values of about 83.52% and 4.06 respectively.

Figure 6.15: Perceptions of Different Stakeholder Groups Regarding the Credibility of Environmental Disclosures of the Listed Companies

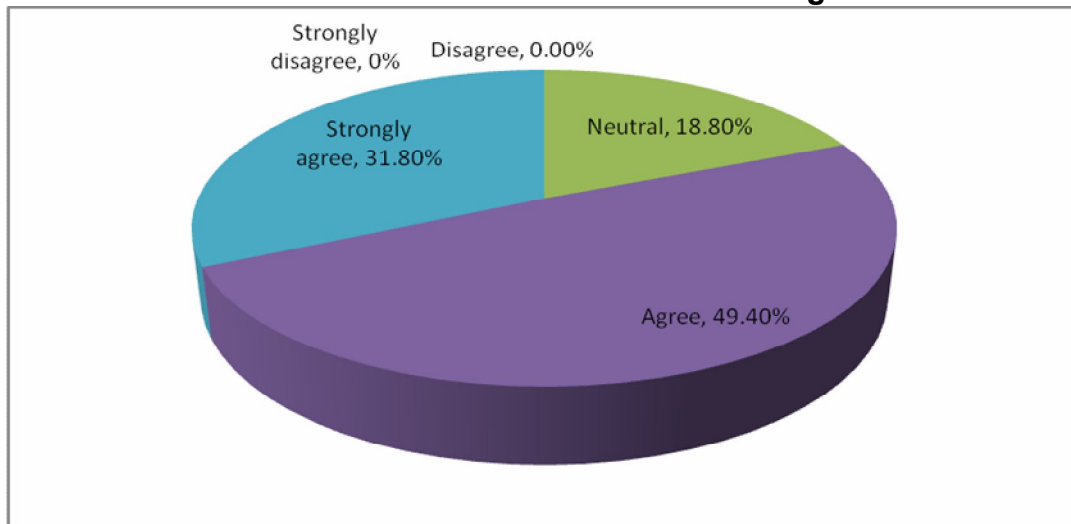


Source: Field survey.

Figure 6.15 further reveals that a larger part of Accounts Executives, External Auditors and Member of the Regulatory Bodies were only agreed with the notion with a percentage distribution score of 55%, 75% and 73.30% respectively, while, 60% respondents of Environmental Activists group were strongly agreed with the concept. These findings indicate that environmental disclosures of the listed manufacturing companies in Bangladesh were not considered credible to the stakeholders.

Table 6.9 and Figure 6.16 provide descriptive statistics on the responses of survey participants to item SQ12 of the questionnaire. Figure 6.16 shows that 81.20% of the survey participants either agreed or strongly agreed with the view that environmental disclosures of the listed manufacturing companies should be externally verified. This position is reflected in the mean and standard deviation value of about 4.13 and .704 respectively (Table 6.9).

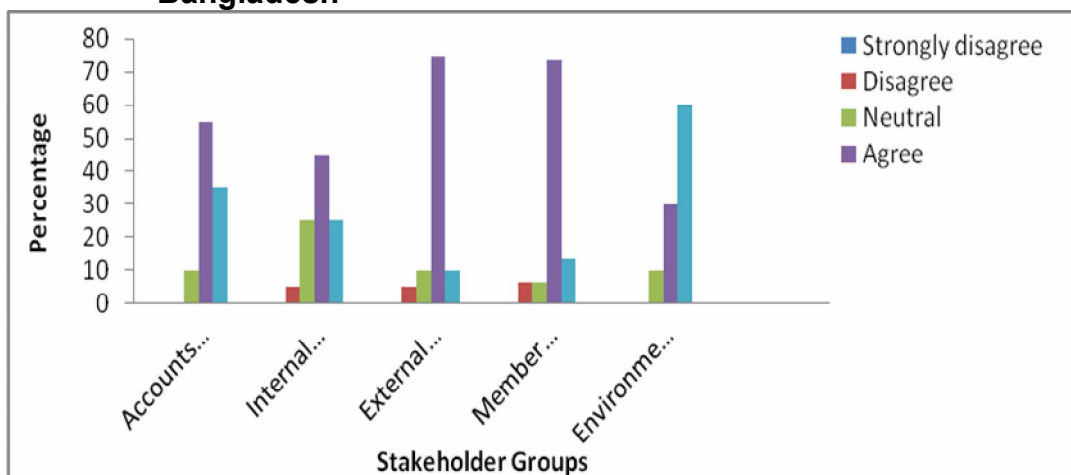
Figure 6.16: Perceptions of Stakeholders Regarding the Needs of External Audit of Environmental Disclosures in Bangladesh



Source: Field survey.

Besides, it is also observed from the Figure 6.17 that 55% participants of Accounts Executives and Internal Auditors groups and 60% respondents of External Auditors group were only agreed with the concept, while 70% participants of Environmental Activists group were strongly positive in their opinions concerning the idea.

Figure 6.17: Perceptions of Multiple Stakeholder Groups Regarding the Needs of External Audit of Environmental Disclosures in Bangladesh



Source: Field survey.

Similarly, in a recent study of Asaduzzaman et al. (2014) revealed that 90% of their interviewees were opined that there should be scope of external verification of social, ethical and environmental disclosures of Bangladeshi companies.

The respondents were then asked (item SQ13 in the questionnaire) to choose one or more applicable auditors groups between the companies' financial auditors and specialist environmental auditors to perform the audit activities of the environmental disclosures of the listed manufacturing companies in Bangladesh. A summary of their response is provided in Table 6.10.

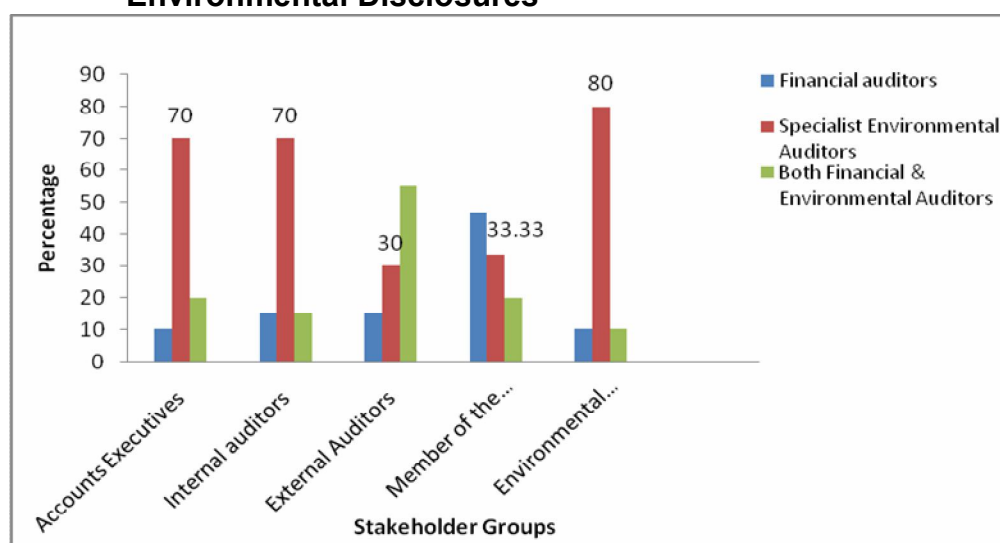
Table 6.10: Descriptive Statistics on Choices of Respondents Regarding Auditors Group for the Audit Activities of Environmental Disclosures

Respondent Group	Auditors Group		
	Financial Auditors	Environmental Auditors	Both Financial & Environmental Auditors
Accounts Executives	10%	70%	20%
Internal Auditors	15%	70%	15%
External Auditors (CA)	15%	30%	55%
Member of the Regulatory Bodies	46.67%	33.33%	20%
Environmental Activists	10%	80%	10%
All Respondents	18.82%	55.30%	25.88%

Source: Field survey.

Table 6.10 reveals that 55.30% of the entire survey respondents preferred the specialist environmental auditors and 18.82% of the respondent chose the companies' financial auditors. While 25.88% of the total respondents opined that both financial and environmental auditors should perform the audit activities of environmental disclosures.

Figure 6.18: Percentage Distribution of Different Respondent Groups' Choices Regarding Auditors group for the Audit Activities of Environmental Disclosures



Source: Field survey.

As well, Figure 6.18 shows the group comparison result which indicates that 70% participants of Accounts Executives and Internal Auditors and 80% respondents of Environmental Activists groups showed positive concern to environmental auditors. Conversely, 46.67% respondents of Member of the Regulatory Bodies preferred financial auditors, while, 55% of the External Auditors supported both financial and environmental auditors for this purpose. The finding revealed that most of our survey participants considered environmental auditors as necessarily relevant in establishing ideal environmental reporting practices among the listed manufacturing companies in Bangladesh. This finding is consistent with the recommendation of International Organization for Standardization (ISO, 2004)

6.10 Perceptions of Respondents on Environmental Reporting Related Rules and Regulations in Bangladesh.

This section will deal with the following research question of this study by providing analysis on the perceptions of stakeholders concerning the regulatory frameworks of environmental reporting in Bangladesh-

- What are the perceptions of different stakeholder groups regarding the regulatory frameworks of environmental reporting practices of the listed manufacturing companies in Bangladesh?

Table 6.11 introduces the descriptive statistics for the responses of the survey participants on items SQ14 to SQ17 in the questionnaire which are related to the rules and regulations of environmental reporting in Bangladesh.

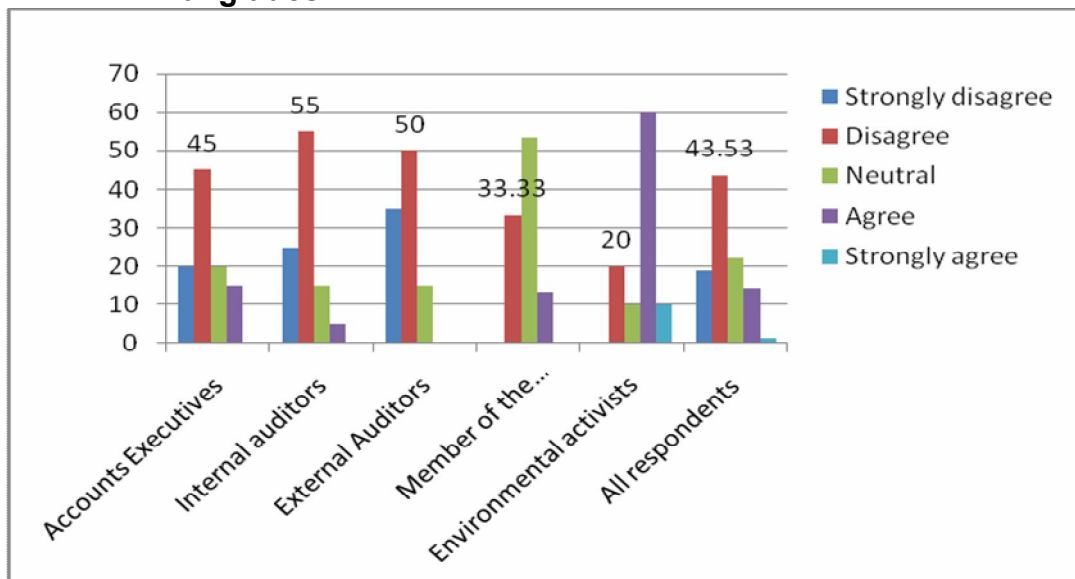
Table 6.11: Descriptive Statistics of Perceptions of Respondents Regarding Environmental Reporting Related Regulatory Frameworks in Bangladesh

Respondent Groups	Descriptive Statistics							
	SQ-14		SQ-15		SQ-16		SQ-17	
	Mean	std	Mean	std	Mean	std	Mean	std
Accounts Executives	2.30	.979	2.10	.788	4.65	.587	3.75	.851
Internal Auditors	2.00	.795	2.35	.933	4.35	.813	3.75	.910
Professional Accountants (CA)	1.80	.696	2.20	.894	4.20	.894	3.65	.87
Member of the Regulatory Bodies	2.80	.676	2.40	1.056	4.73	.458	3.60	.91
Environmental Activists	4.10	1.287	2.60	1.075	4.80	.422	3.5	.71
Total Respondents	2.41	1.105	2.29	.924	4.51	.718	3.67	.851

Source: Field survey. Note: std=Standard Deviation, SQ14=Survey Questionnaire's Item No-14, SQ15= Survey Questionnaire's Item No-15, SQ16=Survey Questionnaire's Item No-16, SQ17= Survey Questionnaire's Item No-17.

In case of item SQ14, Table 6.11 and Figure 6.19 reveal that 62.35% of survey respondents either believed or strongly believed that existing regulatory frameworks are not sufficient enough in establishing ideal environment reporting practices among the listed manufacturing companies in Bangladesh. This result is reflected in the mean score of 2.41.

Figure 6.19: Perceptions of Stakeholder Groups Regarding the Sufficiency of Regulatory Frameworks for Environmental Reporting in Bangladesh



Source: Field survey.

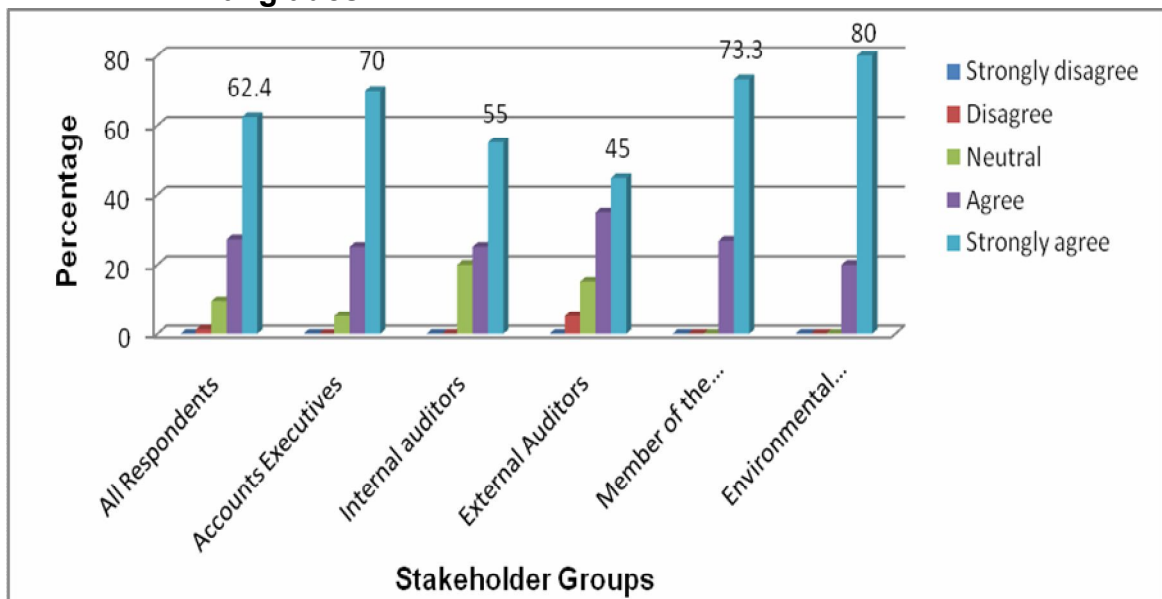
Figure 6.19 further indicates that 45% respondents of Accounts Executives, 55% of Internal Auditors and 50% of external Auditors were also disagreed with the notion. But 60% participants of the Environmental Activists group believed that existing environmental and corporate related laws are sufficient enough for the establishment of ideal environmental reporting practices among the listed manufacturing companies in Bangladesh. Besides, 53.33% participants of Member of the Regulatory Bodies group were neutral regarding the concept.

Regarding the item SQ15 of the questionnaire, responses of the entire survey participants provided the mean score of 2.29 (Table 6.11). In this regard, the descriptive statistics (Appendix-C) revealed that 76.54% of the survey respondents were either disagreed or strongly disagreed with the concept that environmental reports of the listed manufacturing companies should be separate stand-alone

document from their annual report. The analysis also revealed that most of the participants of selected stakeholder groups were also negative in their opinions concerning the idea. This finding is supported by the study of Belal (2006).

Moreover, the analysis of item SQ-16 of the questionnaire (Appendix-C) also revealed that 89.5% of the survey participants were either agreed or strongly agreed with the concept that environmental reporting should be a mandatory task for the listed manufacturing companies in Bangladesh. This result is reflected in the mean and standard deviation scores of the entire survey respondents of 4.51 and .718 respectively. Besides, Figure 6.20 indicates that most of participants of the selected stakeholder groups were also strongly agreed with the idea.

Figure 6.20: Perceptions of Stakeholders Regarding the Mandatory Regulatory Requirements for Environmental Reporting in Bangladesh.



Source: Field survey.

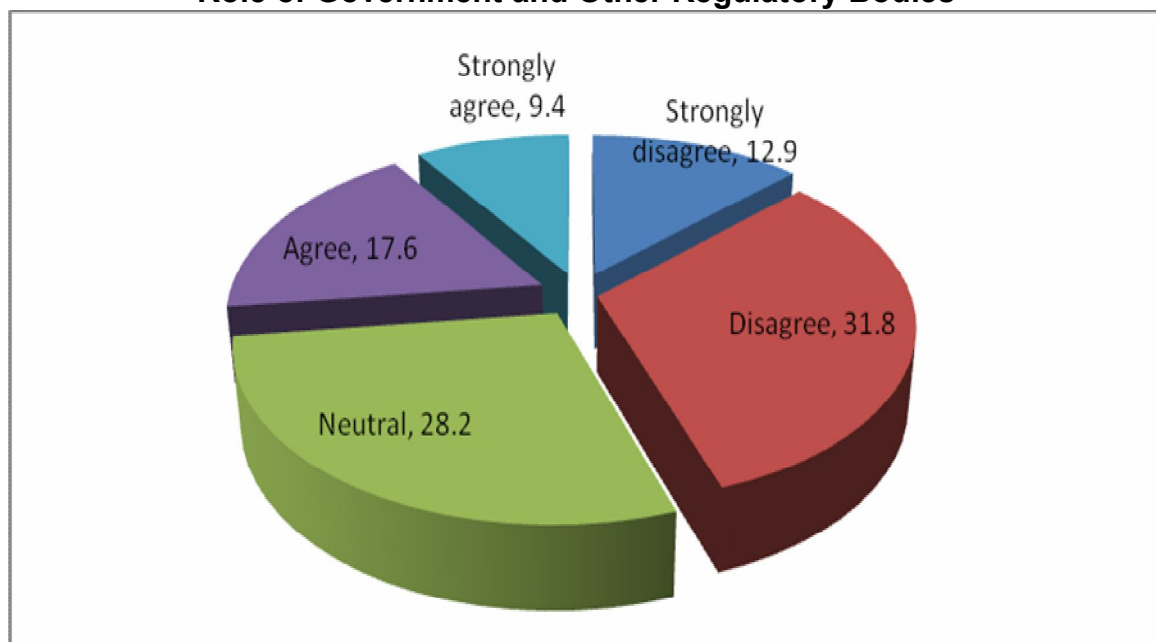
These findings indicate strong consensus among survey participants regarding mandatory legal requirements for environmental reporting in Bangladesh. Similar views were explored in the recent study of Asaduzzaman et al. (2014) and Belal (2004) which indicated that the main reason for not disclosing environmental information is the absence of mandatory legal requirements in Bangladesh. In this regard, recent Libyan study of Ahmed and Ishwerf (2013) concluded that the prevailing managerial attitude is: 'we will only comply if we are legally bound to do so'.

Regarding SQ17 of the questionnaire, analysis on response of the survey participants provides mean and standard deviation scores of 3.67 and .851 respectively (Table 6.11). The findings indicate that 62.34% (Appendix-C) of entire respondents were positive in their opinion to the concept that the existing Financial Reporting Standards (BAS/BFRS) are not sufficient enough for the establishment of ideal environmental reporting practices among the listed manufacturing companies in Bangladesh. It is important to note that most of the participants of external auditors and accounts executives groups were strongly agreed with notion with a percentage distribution score of 75% and 55% respectively. These findings are very important to consider, because, all the participants of External Auditors group and 45% of selected Accounts Executives are the member of ICAB, which is the statutory accounting professional body of the country.

6.11 Role of Government and Other Regulatory Bodies

In order to explore the perceptions of stakeholders regarding the role of government in the development of policy guidelines for environmental reporting practices in Bangladesh, the survey participants were asked (SQ18 of the questionnaire) to rank their opinions on a 5-point Likert Scale.

Figure 6.21: Percentage Distribution of Perceptions of Respondents on Role of Government and Other Regulatory Bodies



Source: Field survey.

Table 6.12 and Figure 6.21 reveal that 44.70% of the survey participants were either negative or strongly negative in their opinions regarding the role of Government and other regulatory bodies in Bangladesh in the development of policy guidelines that encourages environmental reporting practices of listed manufacturing companies. This result is reflected in the mean and standard deviation scores of 2.79 and 1.16 respectively. The analysis also showed that 28.20% respondents were neutral In this regard.

Table 6.12: Descriptive Statistics of Perceptions of Stakeholders on the Role of Government and Other Regulatory Bodies

Respondent Groups	Descriptive Statistics of SQ-18	
	Mean	std
Accounts Executives	3.05	1.09
Internal Auditors	2.80	1.19
Professional Accountants (CA)	2.60	.99
Member of the Regulatory Bodies	2.67	1.17
Environmental Activists	2.80	1.62
Total Respondents	2.79	1.16

Source: Field survey. Note: std=Standard Deviation, SQ18= Survey Questionnaire's Item No-18.

In addition, Table 6.12 provides the group comparison result which indicated that most of the respondents of Internal Auditors, External Auditors, Member of the Regulatory Bodies and Environmental Activists groups were also negative in their opinions concerning the idea. But, most of the participants of Accounts Executives group were positive in their opinion to the notion with a mean score of 3.05.

6.12 Perceptions of Stakeholders Regarding the Content-category Themes of Ideal Environmental Reporting in Bangladesh Context

Previous studies revealed that environmental reporting practices of Bangladeshi companies are unregulated (Belal and Cooper, 2011; Belal and Owen, 2004). Some other studies also indicated that the content and the extent of environmental reporting of Bangladeshi companies is characterized by much variation (Ullah et al., 2013; Ahmed,2008). The chapter five of the present study also revealed that the extent of environmental reporting practices of listed manufacturing companies in Bangladesh is negligible. These findings imply that current environmental performance and reporting practice of Bangladeshi manufacturing companies have largely failed to meet the expectations of stakeholders.

Besides, Reverte (2009) opined that according to the complementary perspectives of Legitimacy theory and Stakeholder theory, it is to the companies' interest to provide information that supports stakeholders on which the companies depend. Better understanding of stakeholder preferences will help companies in attaining more stakeholders centered reporting. Therefore, it is essential to know the expectations of stakeholders regarding the content-category themes of ideal environmental reporting.

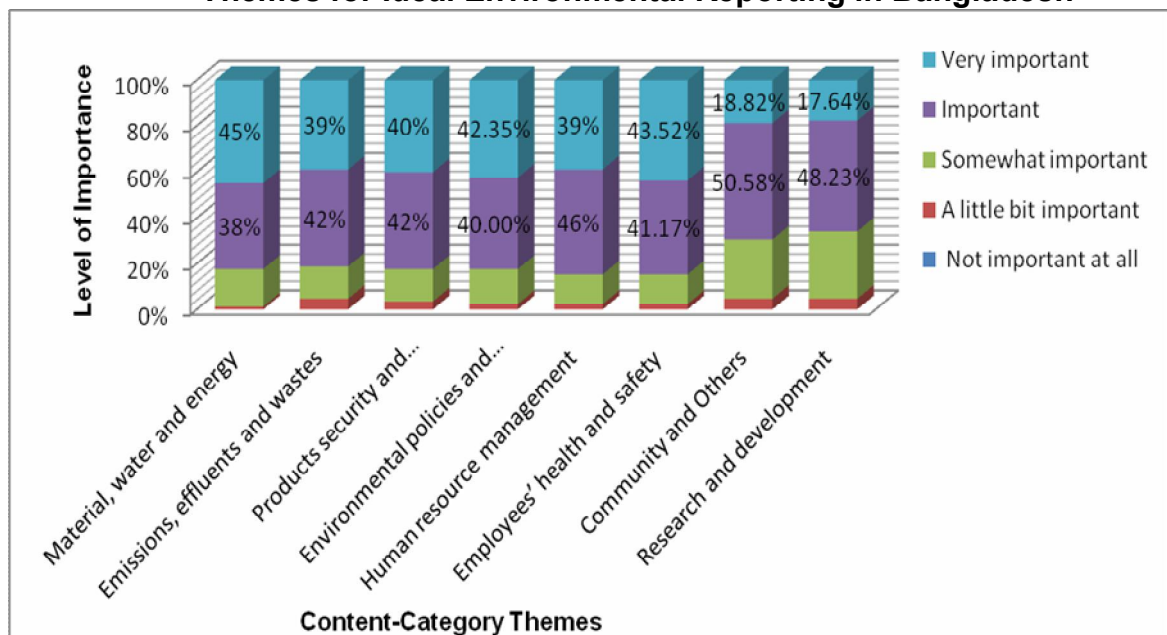
That is why, the aim of this section is to introduce analysis on the perceptions of multiple stakeholder groups regarding the importance of content-category themes of our disclosure index (Appendix-B) for establishing ideal environmental reporting practices in Bangladesh context, as it relates to the following research question of our study-

1. What are the perceptions of different stakeholder groups regarding the content-category themes of ideal environmental reporting in Bangladesh context?

For the purpose of this study, eight content-category themes were included in our disclosure index, such as Materials, water & energy, Emissions, effluents & wastes, Products security & bio-diversity, Environmental policies & legal compliance, Human resource management, Employees' health & safety, Community & others and Research & development. These content-category themes were developed mainly in accordance with ISO 14031 requirements, GRI G3 Guidelines and relevant previous studies. The study explored the nature and extent of environmental disclosures in the corporate annual reports of the sample companies during 2009-2013 by using this disclosure index (outlined in chapter five).

The survey respondents were requested to rate each of the eight content-category themes of our environmental disclosures index on a five-point Likert-Scale with one representing not important at all, and five representing very important. In addition, the survey questionnaire also had an open-ended section that allows respondents to provide a "response or opinion in their own words" about what other important specific themes they believe organizations need to address. Any additional important issue cited by two or more respondents has been included in the index.

Figure 6.22: Perceptions of Stakeholders Regarding the Content-category Themes for Ideal Environmental Reporting in Bangladesh



Source: Field Survey

The descriptive statistics of the perceptions of respondents' regarding the eight contentment-category themes of our disclosure index are presented in Figure 6.22 and Table 19.1 of Appendix-C. The analysis revealed that all the eight content-category themes of environmental disclosures index are perceived as important by the survey participants with no mean less than 3.79. In most cases (7 out of 8) the standard deviation was smaller than 1.

Figure 6.22 revealed that Materials, water & energy and Employees' health & safety themes were identified as either important or very important themes for ideal environmental reporting by 82.34% and 84.69% of entire survey participants respectively with a mean score of 4.26. However, comparison of these results with the actual environmental disclosures scenario of the sample companies (introduced in Figure 5.5 of chapter five) indicates a large gap between expectations of stakeholders and quantity of reported information of the companies on these themes.

Besides, 82.75% of total respondents among the selected stakeholder groups considered Environmental policies & legal compliance as either important or very important theme for ideal environmental reporting with a mean score of 4.22. In

this regard Figure 5.5 of chapter five indicates that content-category theme of Environmental policies and legal compliance contained the highest form of environmental disclosures of about 25.85% of total environmental disclosures of the sample companies during the study period 2009-2013. The analysis further revealed that 84.71% of survey participants believed that the theme of Human resource management is either important or very important for environmental reporting, but Figure 5.5 of chapter five revealed that sample companies reported 15.38% of their total environmental information on this theme.

The analysis also revealed that Products' security & bio-diversity and Emissions, effluents & wastes were considered either important or very important themes for ideal environmental reporting by 82.35% and 81.17% of entire survey respondents among the selected stakeholder groups respectively. In this regard Figure 5.5 of chapter five showed that sample companies disclosed 14% and 4.48% of their total environmental information on the themes of Products' security & bio-diversity and Emissions, effluents & wastes respectively.

Moreover, Community & others and Research & development themes were considered either important or very important themes for demonstrating environmental performance related information by 69.4% and 65.87% of total respondents with mean scores of 3.79 and 3.84 respectively. In this regard the actual reporting scenario of sample companies revealed that (Figure 5.5 of chapter five) Community & others theme contained 13% of total environmental disclosures, whereas, Research & development theme contained only 2% of total environmental disclosures of the sample companies during the study period.

The analysis revealed that Materials, water & energy, Employees' health & safety, Human resource management, Emissions, effluents & wastes, Products, services & bio-diversity, Environmental policies & legal compliance, (mean score ranged from 4.15 to 4.26) were considered relatively more important to the stakeholders compared to the themes related to Community & others and Research & development (mean score ranged from 3.79 to 3.84).

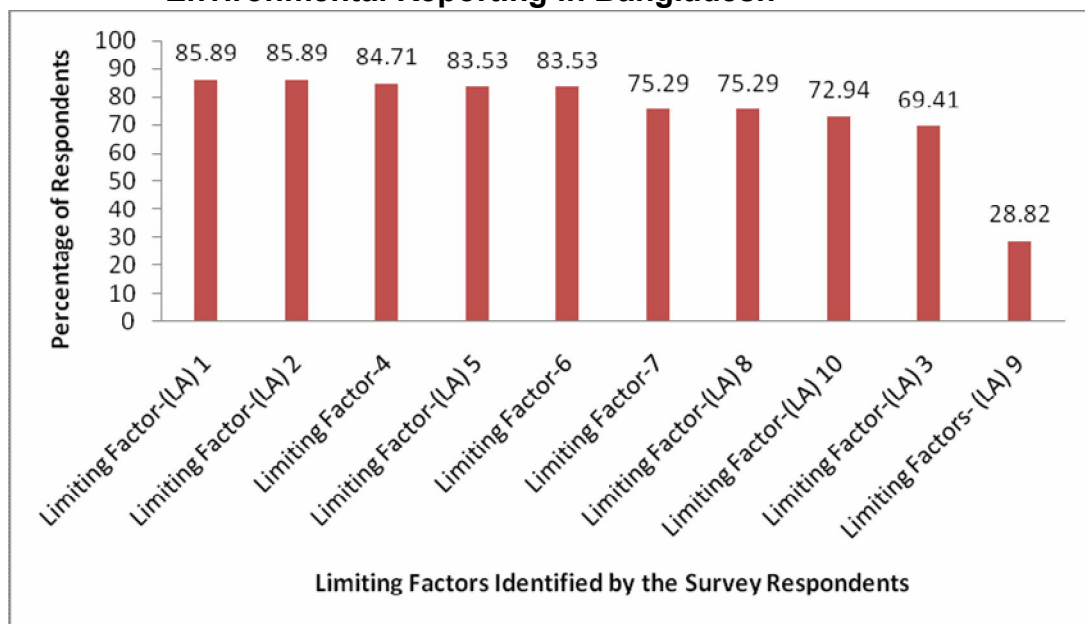
The analysis revealed that there was much consistency in the responses among the stakeholder groups regarding the importance of the content-category themes of the disclosure index. It was interesting to observe that there appeared to be little difference in the ratings provided by the different stakeholder groups. In short, it can be concluded that respondents considered all the themes of our disclosure index as at least 'important' for establishing ideal environmental reporting practices in Bangladesh. On the whole, the results indicate a high level of homogeneity among the stakeholders' opinions regarding each content-category theme.

Besides, the respondents were also asked to provide any additional themes they perceive as important for ideal environmental reporting. The analysis revealed that only two respondents out of 85 provided alternative suggestions. Consequently, the additional issues cited by two respondents have not been included in the disclosure index.

6.13 Limiting Factors of Environmental Reporting Practices in Bangladesh

One of the important objectives of our study is to identify the major limiting factors involved in environmental reporting practices in Bangladesh. In order to explore the perceptions of stakeholders regarding the constraints of environmental reporting practices in Bangladesh, survey respondents were requested to identify the limiting factors according to their perceptions on a scale of equal value, where one can identify one or more items. Figure 6.23 reveals that the limiting factors: 'Lack of established guidelines for environmental reporting practices in Bangladesh (LF-1)' and 'Lack of proper enforcement of existing rules and regulations (LF-2)' were identified by the 85,89% of total respondents, which have also been ranked as one out of eleven identified limiting factors.

Figure 6.23: Perceptions of Stakeholders Regarding the Limiting Factors of Environmental Reporting in Bangladesh



Source: Field survey. Note: Limiting Factor (LF) No= Serial number of limiting factors in the questionnaire.

The next problem identified by the stakeholders is: 'Insufficient provision in the corporate related rules and regulations such as, in the Companies Act-1994, the Income Tax Ordinance-1984 and SEC Act.-1993 regarding environmental reporting of the organizations (LF-4)'. This limiting factor was supported by 84.71% of entire respondents among the stakeholder groups. This result is consistent with the findings of Asaduzzaman et al. (2014), which indicated that most of their interviewees expressed the view that the main reason for not disclosing the environmental information of the Bangladeshi organizations is the absence of a legal requirement. Similar views were also found by Hossain et al. (2011) regarding the potential obstacles of environmental reporting practices of Bangladeshi companies. Belal and Owen (2007) also found similar results regarding the barriers of environmental reporting practices of companies operating in Bangladesh. Findings of the study predominantly mentioned the lack of adequate regulatory framework coupled with Lack of proper enforcement of existing rules and regulations in Bangladesh.

Besides, 'Lack of proper awareness regarding the benefits of Environmental Reporting among the stakeholders (LF-5)' and 'Lack of educational facilities

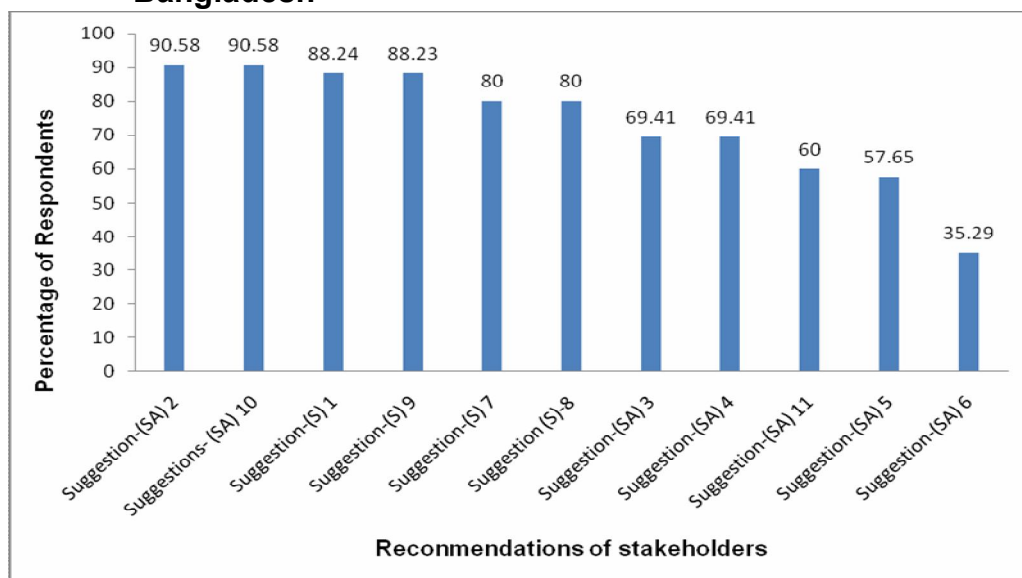
regarding environmental reporting (LF-6)' were supported by 83.53% of entire respondents across the stakeholder groups and ranked as third important limiting factors. This result is accorded with the study of Hossain et al. (2011) which concluded that education systems should incorporate social and environmental awareness related issues. The analysis also revealed that 'Lack of stakeholders' needs for organization's environmental performance related information by corporate reporting (LF-8)' and 'Inadequate corporate strategies and commitment to sustainable development (LF-7)' were ranked as fourth important problems of environmental reporting in Bangladesh, which were supported by 75.29% of entire survey participants. Besides, 'poor environmental performance of the companies and fear of decreasing corporate image (LF-10)' was also identified as obstacle of environmental reporting in Bangladesh by the 72.94% of total respondents. Moreover, 'Inadequate technical skills and professional competence of accounting and auditing professionals (LF-3)' and 'Conservative mindset of the stakeholders averse to new initiatives (LF-9)' were identified as the important barriers for environmental reporting practices of the manufacturing companies in Bangladesh by 69.41% and 28.82% of survey participants respectively. This finding is also accorded with the study of Belal (2006) and Asaduzzaman et al. (2014).

6.14 Suggestions of Stakeholders for the Development of Environmental Reporting Practices in Bangladesh

Various studies revealed that the volume of environmental disclosure of Bangladeshi companies is low and poor in terms of quality and quantity compared to developed countries (Belal and Cooper, 2011; Belal and Owen, 2004). The chapter five of the present study also revealed that the current environmental reporting practices of listed manufacturing companies in Bangladesh is far from satisfactory level. The previous section explains the reasons which are provided by our survey respondents for doing little environmental reporting of corporate organizations in Bangladesh. The aim of this section is to provide the possible ways of minimizing the challenges of environmental reporting practices in Bangladesh based on views and comments of survey respondents.

The survey participants were requested to put their suggestions for solving the problems of environmental reporting in Bangladesh. Figure 6.24 reveals that 90.56% of the entire respondents supported the suggestions of 'Amendment of the Companies Act-1994, the Income Tax Ordinance -1984 and the SEC Act. 1993 (SA-2)' by incorporating necessary provisions regarding environmental reporting of the organizations' and 'Ensuring proper enforcement of environmental reporting related rules and regulations (SA-10)' which were ranked as one.

Figure 6.24: Recommendations of Stakeholders for Minimizing the Challenges of Environmental Reporting Practices in Bangladesh



Source: Field survey. Note: Suggestion (S) No= Serial number of suggestions in the questionnaire.

Similar views were found in the studies of Belal (2006) which concluded that in the absence of an effective law enforcement mechanism there is no guarantee that legal requirements will necessarily lead to compliance.

Besides, 'Incorporation of sustainable development related issues in the academic curriculum for developing adequate awareness concerning environmental reporting (SA-1)' was suggested by 88.24% of survey participants across the stakeholder groups. This is consistent with the findings of recent Libyan study of Ahmad and Ishwerf (2014) which concluded that education on sustainable development could help the stakeholders of the organizations in realizing the significance of environmental reporting practices. Moreover, 81.23% of total respondents were at one with the suggestion of 'Developing industrial unit

wise regulatory frameworks on the basis of our corporate and national culture for environmental reporting (SA-9)'. This suggestion was ranked as third. In addition, 80% of total participants put suggestion for 'Introducing best environmental reporting awards (SA-7)'. Besides, the suggestion of 'Formation of special Taskforce- Representation from Professional Bodies, Regulators and Chambers for implementation of Environmental Reporting in Bangladesh within a stipulated timeframe (5-10 years)' (SA-8)' was also supported by 80% of total respondents for the development of environmental reporting practices in Bangladesh. This suggestion was ranked as fourth.

The Figure also shows that both the suggestions of 'Strengthening advocacy role of BSEC, ICAB and other regulatory bodies for the development of environmental reporting practices among the listed companies (SA-3)' and 'Taking initiatives for Increasing skills & competence of accounting professionals regarding Environmental Reporting SA-4),' were proposed by 69.41% participants of total respondents. Furthermore, 'Adopting internationally recognized guidelines for environmental reporting (SA-6)' was suggested by only 35.29% of entire survey participants, which was ranked as eighth among the eleven recommendations.

Chapter Seven

Summary of Findings, Conclusion, Implications and Suggestions for Future Studies

7.1 Introduction

The purpose of this chapter is to provide the concluding issues of the present study in the light of the research objectives. The chapter begins with a discussion of major findings and continues with discussion that addressing the conclusion and policy implications of the research. The chapter also provides limitations of the study and comes to an end with potential directions for further studies within this area of research.

7.2 Discussion of Major Findings

The following sections discussed the main findings of this research:

7.2.1 Nature and Extent of Environmental Reporting Practices of the Sample Companies

Chapter five of this thesis introduced relevant analysis on the nature and extent of environmental disclosures in the annual reports of sample Cement, Tannery, Textiles and Pharmaceuticals companies during the study period 2009-2013. **The findings of secondary data analysis addressed the first objective of this study.**

The findings showed that the level of environmental disclosures of sample companies among the selected industries was very negligible, but quantity of disclosure had been increasing gradually during the study period 2009-2013. In respect to the percentage of number of disclosing companies, all sample companies of four selected industrial sectors had hundred percent disclosing rates, that means, each company had contained at least one item of environmental information in its every corporate annual report during the study period.

It is observed that amounts of environmental disclosures among the selected industrial sectors were slightly different. Average environmental disclosures of Cement, Tannery, Textiles and Pharmaceuticals companies were 12.08

(20.13%), 6.40 (10.67%), 10.64 (17.73) and 15.50 (25.83%) respectively during the study period. It is also found that overall environmental reporting performance of the Pharmaceuticals companies was best among the sample companies of selected industrial sectors during the study period 2009-2013

The findings further indicated that companies of Cement and Textiles sectors were nearly at the same extent of environmental reporting, whereas Tannery companies reported the least number of environmental disclosures. It is also observed that average environmental disclosures of Cement, Pharmaceuticals and Textiles companies had been increasing gradually over the period of analysis, but in case of Tannery sector, the average disclosures remained typically low. The findings also showed that none of the top five disclosing companies (on the basis of their total environmental disclosure scores during the study period) came from the 'Tannery' industry, where two Cement companies, one Pharmaceuticals company and two Textiles companies were included. Furthermore, it is noteworthy that although selected companies are different in terms of business products and operational processes, they belong to the environment sensitive sectors and from a pollution point of view all these industries are the major contributors in Bangladesh (DoE, 2010). Moreover, in 2008, United Nations Industrial Development Organization recognized that pollution derived from Tannery sector is a serious threat for the environment of Bangladesh (Chowdhury, 2011). Therefore, Tannery companies had least environmental disclosures in quantity among the companies of selected industrial sectors. The study also showed that the reporting rates for all sample companies were hundred percent and ranges of environmental disclosures were 3.33% to 41.67% among the companies of selected industrial sectors. These reporting rates and ranges of disclosures suggested that environmental information may have one of the important concerns for all selected industries, and companies were willing to disclose some environmental information, although the amount of disclosed environmental information was considerably little. The findings implied that the overall environmental reporting performance of the sample companies appeared to be inconsistent and unregulated. These findings are consistent with the findings of Assaduzzaman et al. (2014), Ullah et al. (2013) and Hossain et al.

(2006) which concluded that most of the Bangladeshi companies disclosing very negligible amount of information regarding environmental issues.

It is mentioned earlier that the present study used a disclosure index in exploring the nature and extent of environmental disclosures in corporate annual reports of the sample companies, and items included in the disclosure index have four testable dimensions. The following sub-sections presented the findings on the nature of environmental reporting practices of the sample companies in accordance with the dimensions of the environmental information.

i) Content-Category Themes of Environmental Disclosures

Descriptive statistics results on content-category themes of environmental disclosures revealed that Environmental policy and legal compliance was the most reported theme among the companies of selected industries, and this theme was reported by the hundred percent (20 out of 20) sample companies. Most (14 out of 20) of the sample companies disclosed their environmental goals and objectives, and only eight companies (3 Cement, 1 Tannery, 1 Textiles and 3 Pharmaceuticals companies) claimed that they had achieved the membership of the UN Global Compact, which is the world's largest voluntary corporate citizenship initiative for organizations that are committed to align their operations with 10 principles in the areas of human rights, labor, environment and anti-corruption. Besides, twelve sample companies (3 Cement, 2 Tannery, 3 Textiles and 4 Pharmaceuticals companies) claimed that they had acquired ISO certification on environmental management. The analysis also showed that content category themes of Material, water and energy, and Employees health and safety were disclosed by 85% of sample companies (17 out of 20), which contained 9.66% and 16.10% of their total environmental disclosures during the study period 2009-2013, and these themes were identified as the second most disclosed themes in the ranking. It is also revealed that Cement, Textiles and Pharmaceuticals companies disclosed 22.18%, 12.78% and 15.38% of their total environmental disclosures respectively on how they managed employees' health and safety, but most of the Tannery companies were reluctant in disclosing such

information. Though various study revealed that the acidic emissions from Tannery effluents had the potential to cause serious respiratory disorders to the employees and residents (Shikder, 2009; Chowdhury, 2011). A study of Bangladesh Society for Environment and Human Development (BSEHD, 2001) showed that 58% of the tannery workers suffer from gastrointestinal disease (VS .24% for the country as a whole), 31% from dermatological disease (VS 0.9%), 12% from hypertension (VS 0.07%). The study concluded that dermatological and other diseases could be related to the pollution of Tannery industry.

The analysis further showed that content-category themes of Human resource management, Products security & bio-diversity and Community & others were also received significance attention, because these themes were disclosed by 80%, 75% and 70% of sample companies respectively. On the other hand, 45% of sample companies (9 out of 20) reported on the theme of Emissions, effluents and wastes, which was only 4.48% of their total environmental disclosures. While Cement, Tannery and Textiles companies are the major contributor for air pollution in Bangladesh, and Pharmaceuticals, Textiles and Tannery sectors have the significant role in air and water pollution (DoE, 2010). According to Alam (2009), everyday approximately 6,000 cubic meters of liquid effluents and 10 tons of solid toxic wastes are discharging by Tannery units. It is also observed that only 30% of the sample companies (4 Cement companies, 1 Textiles company and 1 Pharmaceuticals company) reported 2.24% of their total environmental disclosures on the theme of Research and development, and Tannery companies were fully silent concerning this theme over the period of study.

It is observed that though all the sample companies of selected industries reported highest portion of their total environmental disclosures on Environmental policies and legal complacence; there were varieties in percentage in case of other content-category themes of disclosures. These findings imply that companies were not obligated to report specific types of environmental information and there were no consistent or regulated patterns for

content category themes disclosures among the companies of selected industries in Bangladesh.

ii) Environmental Disclosures by Evidence

The results showed that sample companies among the selected industries disclosed highest 62% of their total environmental disclosures on a descriptive basis during the study period 2009-2013. This is followed by disclosures of environmental information in terms of non-monetary quantitative and monetary quantitative basis with percentage distribution scores of 29% and 9% of their total environmental disclosures respectively. These results imply that sample companies mainly disclosed descriptive information regarding their environmental performance.

iii) Environmental Disclosures by News Type

Corporate environmental disclosures of the sample companies have been categorized into positive, negative and neutral information, based on their news-type. The result showed that sample companies disclosed 85.51% and 14.22% of their total environmental disclosures in the form of positive and neutral news respectively. Besides, only 0.27% of their total environmental disclosures were made in the form of negative news during the study period. These imply that sample companies considered corporate environmental reporting as ways and means for improving their corporate image rather than to fulfil the needs of stakeholders, and companies wish to be appeared legitimate in the eyes of the society by disclosing environmental information.

iv) Environmental Disclosures by Location

The analysis revealed that 90.33% of total environmental disclosures of the sample companies were accommodated in the Notes to the Financial Statements & Annexure, Board of Director's Report, Chairman's Statement, and CSR Report sections of the annual reports of the sample companies. The findings further showed that sample companies did not prefer income statement and balance sheet sections of the annual reports for disclosing environmental information. These findings imply that there is no distinct regulated pattern for disclosing corporate environmental information in the annual reports of the

companies of selected industries in Bangladesh. This finding is consistent with the result of Assuzzaman et al (2014) which concluded that most of the Bangladeshi companies disclose a little portion of their total environmental information in the financial statements sections of annual reports.

7.2.2 Analysis of Perceptions of Stakeholders

The study investigates the manifold perceptions of five selected stakeholder groups regarding the various aspects of environmental reporting practices of the listed manufacturing companies in Cement, Tannery, Textiles and Pharmaceuticals sectors in Bangladesh by using questionnaire survey method. **The findings of the primary data analysis are introduced in the following sub-sections that addressed the second, third and fourth objectives of this study:**

- **Understanding of Stakeholders on the Concept of Environmental Reporting**

Findings showed that 12.94% participants of entire respondents had excellent understanding on the concept of environmental reporting, while 41.18% participants claimed that they only heard the term. In addition, 14.12% participants had good understanding and 29.41% participants had partially understanding on the concept. But, about 2% respondents claimed that environmental reporting was an unknown term to them. On the other hand, 55% and 60% respondents of accounts executives and internal auditors groups claimed that they had only heard the term. In addition, 30% participants of the Environmental Activists group specify that they had good understanding on the concept, whereas 46.67% participants of the Members of the Regulatory Bodies claimed that they had partially understanding on the concept of environmental reporting. These results implied that overall understanding level of the corporate stakeholders regarding the concept of environmental reporting is low, though some respondents claimed that they are relatively knowledgeable on the concept. Such low level of understanding of stakeholders regarding the concept of environmental reporting may be the cause of little environmental reporting practices among the Bangladeshi companies.

- **Significance of Environmental Reporting**

Analysis revealed that 93% of the entire respondents believed that environmental reporting practices can improve the environmental accountability of the manufacturing companies in Bangladesh, while 91.77% participants of the total survey respondents were either agreed or strongly agreed with the view that environmental reporting practice can play a significant role in reducing environmental hazardous activities of the companies. Besides, 92.93% of the total respondents supported the notion that disclosure of environmental information can improve the corporate image of the manufacturing companies. These findings imply that most of the corporate stakeholders considered environmental reporting as a significant tool for improving the environmental performance and corporate image of the manufacturing companies in Bangladesh.

- **Influence of Environmental Disclosures on the Corporate Relationship with the Stakeholders**

Findings further showed that 85.88% of the survey respondents among the selected stakeholder groups were either agreed or strongly agreed with the concept that environmental disclosures of the companies can influence the corporate relationship with the stakeholders. These findings are supported by the basic notion of Stakeholder Theory which states that organization's success is largely dependent upon the successful management of all the relationship that an organization has with its stakeholders (Clarckson, 1995; Gray et al., 1996). These results are also accorded with the basic concept of Legitimacy Theory, which pronounced that organizations' survival is dependent upon the continuous support of the society in which they operate. These findings imply that it is essentially necessary for organizations to improve their environmental performance and also disclose such information to the stakeholders in order to achieve fair acceptance of the host community.

- **Environmental Performance of the Listed Manufacturing Companies in Bangladesh**

In addition, the findings indicated that about three fourth of entire respondents among the selected stakeholder groups believed that the activities of Bangladeshi listed manufacturing companies are not environment friendly. Similar views were explored in the recent study of Belal and Owen (2006) and Asaduzzaman et al. (2014).

- **Nature and Extent of Environmental Reporting Practices of the Listed Manufacturing Companies in Bangladesh**

The findings showed that the extent of environmental reporting practices of the listed manufacturing companies in Bangladesh was considered negligible to 72.90% of entire survey participants. It is further revealed that 56.47% of the total respondents were agreed with notion that Bangladeshi manufacturing companies disclose highest portion of their environmental information on a descriptive manner.

These results are consistent with the findings of secondary data analysis section of this study (outlined in chapter five). These findings implied that current environmental reporting practices of Bangladeshi manufacturing companies have largely failed to meet the expectations of stakeholders.

- **Motives of Listed Manufacturing Companies behind Environmental Reporting Practices**

Moreover, 71.70% of selected stakeholders believed that companies emphasized on reporting of the positive impacts of their products and activities on environment and wish to be considered as being good corporate citizens by disclosing environmental information, but not for demonstrating transparency of their operations. The analysis also revealed that 68.24% of the survey participants were positive in their opinions to the concept that Bangladeshi listed manufacturing companies disclose environmental information for improving corporate image rather than to fulfill stakeholders' needs. These findings are consistent with the findings of secondary data analysis of this study (introduced in chapter five).

- **Credibility Issue and Needs of External Audit of Environmental Disclosures**

It is observed that, environmental disclosures of the listed manufacturing companies in Bangladesh were not considered credible to the respondents. Because, 83.52% of entire respondents believed that environmental disclosures of the listed manufacturing companies in Bangladesh did not reflect the real environmental performance of the companies. In addition, 81.20% of the survey participants either agreed or strongly agreed with the view that environmental disclosures of the listed manufacturing companies should be externally verified. It is also found that 55.30% of the entire survey respondents preferred the specialist environmental auditors and 18.82% respondents chose the companies' financial auditors, while 25.88% of the total respondents opined that both financial and environmental auditors should perform the audit activities of environmental disclosures of the listed manufacturing companies in Bangladesh. It is important to note that 70% participants of Accounts Executives and Internal Auditors and 80% respondents of Environmental Activists groups showed positive concern to environmental auditors. Conversely, 46.67% respondents of Member of the Regulatory Bodies preferred financial auditors, while, 55% of the External Auditors supported both financial and environmental auditors for this purpose. The findings imply that environmental disclosures of the listed manufacturing companies in Bangladesh were not considered credible to the stakeholders without any external verification. And most of our survey participants considered environmental auditors as necessarily relevant in establishing ideal environmental reporting practices among the listed manufacturing companies in Bangladesh. These results have significant regulatory implications, because 55% of the total respondents had membership with one or more professional accounting bodies. The findings are also consistent with the recommendation of International Organization for Standardization (ISO, 2004). The findings of Asaduzzaman et al. (2014) also supported these results which concluded that 90% of their interviewees opined that there should be a scope of external verification for environmental disclosures of Bangladeshi companies.

- **Environmental Reporting Related Rules and Regulations in Bangladesh.**
The results showed that existing Accounting Standards (BAS/BFRS) were considered insufficient to the 62.34% of entire respondents for the establishment of ideal environmental reporting practices among the listed manufacturing companies in Bangladesh. It is important to note that 80% participants of External Auditors group and 70% respondents of Accounts Executive group were also negative in their opinion regarding the sufficiency of existing Accounting Standards (BAS/BFRS). These findings are very important to consider, because, all the participants of external auditors group and 45% of accounts executives are the member of ICAB, which is the statutory accounting professional body of the country.

Besides, 89.50% of the survey participants think that environmental reporting should be a mandatory task for the listed manufacturing companies in Bangladesh, but they did not support the concept of stand-alone environmental report. In addition, hundred percent respondents of Member of the Regulatory Bodies and Environmental Activists groups were also positive in their opinions, while only one external auditor opposed the mandatory status of environmental reporting in Bangladesh. These findings implied that there is a strong consensus among the survey participants regarding mandatory legal requirements for environmental reporting in Bangladesh. Similar views were explored in the recent Libyan study of Ahmed and Ishwerf (2013) which concluded that the prevailing managerial attitude is: we will only comply if we are legally bound to do so. These findings have some policy implication for the regulators and corporate leaders.

- **Role of Government and Other Regulatory Bodies**
Moreover, 44.70% of entire respondents believed that Government and other regulatory bodies in Bangladesh could not play expected role for the development of policy guidelines that encourages environmental reporting practices of listed manufacturing companies. In this regard, 26.67% and 20% participants of Member of the Regulatory Bodies and External Auditors groups respectively were positive in their opinions.

- **Perceptions of Stakeholders Regarding the Content-category Themes of Environmental Reports**

The survey participants were requested to rate each of the eight content-category themes of our environmental disclosure index on a 5-point Likert Scale. The findings revealed that all of the eight content-category themes received mean scores between 3.79 and 4.26 (out of 5, where 1 represented for not important at all and 5 for very important). This result indicated that stakeholders considered each of the eight content-category themes of the disclosure index as important for assessing the environmental performance of the listed manufacturing companies in Bangladesh. Therefore, these findings verify the validity and importance of the eight content-category themes of the disclosure index. Thus, this study provides expected 'Themes' of disclosure for ideal environmental reporting.

The finding is important for the management of the companies for properly demonstrating their environmental performance to the stakeholders through annual reports and gaining the acceptance of the society. Besides, the findings have some implications for regulators and standard setting bodies in developing corporate environmental reporting related standards and regulations. This finding will also assist users of the environmental information who want to assess the environmental reporting performance of the companies by comparing the companies' disclosed information against the 'themes' of disclosure index.

- **Perceptions Regarding the Limiting Factors of Environmental Reporting Practices in Bangladesh**

The findings of this research revealed a range of limiting factors of environmental reporting practices in Bangladesh on the basis of perceptions of multiple stakeholder groups. The findings revealed that 85.89% of the survey participants considered 'Lack of established guidelines for environmental reporting' and 'Lack of proper enforcement of existing rules and regulations' as

the most important barriers for environmental reporting in Bangladesh. Besides, 84.71% of the survey participants believed that 'Insufficient provision in the corporate related rules and regulations such as, in the Companies Act-1994, the Income Tax Ordinance -1984 and SEC ACT-1993 regarding environmental reporting of the organizations is another important limiting factor for the reporting practices in Bangladesh. Besides, 'Lack of proper awareness regarding the benefits of Environmental Reporting among the stakeholders' and 'Lack of educational facilities regarding environmental reporting' were also considered as important limiting factors by the 83.53% of the respondents. In this regard, Belal and Cooper (2007) concluded that absence of environmental disclosure due to lack of awareness and knowledge seems to be a plausible explanation in the context of developing countries.

The analysis also showed that 'Lack of stakeholders' needs for organization's environmental performance related information by corporate reporting (LF-8)' and 'Inadequate corporate strategies and commitment to sustainable development (LF-7)' were ranked as fourth important problems of environmental reporting in Bangladesh, which were supported by 75.29% of entire survey participants. Besides, 'poor environmental performance of the companies and fear of decreasing corporate image (LF-10)' was also identified as obstacle of environmental reporting in Bangladesh by the 72.94% of total respondents. Moreover, 'Inadequate technical skills and professional competence of accounting and auditing professionals (LF-3)' and 'Conservative mindset of the stakeholders averse to new initiatives (LF-9)' were identified as the important barriers to environmental reporting practices of the listed manufacturing companies in Bangladesh by 69.41% and 28.82% of survey participants respectively

- **Suggestions of Stakeholders for the Development of Environmental Reporting Practices of the Organizations in Bangladesh**

The study explored the possible ways of minimizing the challenges of environmental reporting practices in Bangladesh based on views and comments of respondents.

About 91% of the survey respondents believed that to overcome the barriers of environmental reporting practices of listed manufacturing companies in Bangladesh, Government should incorporate necessary provisions regarding environmental reporting of the organizations in the Companies Act-1994, the Income Tax Ordinance -1984 and the SEC Act-1993. They also emphasized on the proper enforcement of existing environmental reporting related rules and regulations.

Besides, 88.24% of the survey participants also believed that 'Incorporation of sustainable development related issues in the academic curriculum' can be one of the effective means and ways for increasing the awareness of stakeholders regarding the benefits of environmental reporting in Bangladesh. Similarly, the findings of recent Libyan study of Ahmad and Ishwerf (2014) which concluded that education on sustainable development could help the stakeholders of the organizations in realizing the significance of environmental reporting practices.

Moreover, 'Developing industry wise regulatory frameworks for environmental reporting on the basis of our corporate and national culture', 'Introducing best environmental reporting awards' and 'Formation of special Taskforce-Representation from Professional Bodies, Regulators and Chambers for implementation of Environmental Reporting in Bangladesh within a stipulated timeframe (5-10 years) were also suggested by 81.17%, 80% and 78.82% of total respondents respectively. The respondents also put emphasis on strengthening advocacy role of BSEC, ICAB and other regulatory bodies, and taking initiatives for Increasing skills & competence of accounting professionals regarding Environmental Reporting for the development of environmental reporting practices in Bangladesh.

7.3 Conclusions

The level of environmental disclosures of sample companies among the selected industries in Bangladesh was not satisfactory, but quantity of disclosure had been increasing gradually during the study period 2009-2013. It is observed that companies introduced most of their environmental information in the annual reports in such a manner that described credit to the company, and a larger part (62%) of the reported environmental information was descriptive in nature. Besides, companies were still reluctant in disclosing environmental information in details. These findings imply that there is no distinct regulated pattern for disclosing corporate environmental information in the selected industries in Bangladesh.

It is observed that overall understanding level of the corporate stakeholders regarding the concept of environmental reporting was low, though some (12.94%) respondents claimed that they were relatively knowledgeable on the concept. Such low level of awareness of stakeholders regarding the concept of environmental reporting may be one of the important causes of little environmental reporting practices among the listed manufacturing companies in Bangladesh. It is noteworthy that most of the corporate stakeholders considered environmental reporting as a significant tool for improving environmental performance and corporate image of the manufacturing companies. The respondents also believed that environmental disclosures of the manufacturing companies can influence the corporate relationship with the stakeholders, but listed manufacturing companies in Bangladesh disclose environmental information for improving corporate image rather than to fulfill stakeholders' needs. Besides, it is also revealed that environmental disclosures of the listed manufacturing companies in Bangladesh were not considered credible to the stakeholders without any external verification. In addition, most of the survey participants considered environmental audit as necessarily relevant in establishing ideal environmental reporting practices among the listed manufacturing companies in Bangladesh. These results have

significant regulatory implications, because 55% of the total respondents had membership with one or more professional accounting bodies like ICAB and ICMAB. Moreover, the respondents believed that the existing regulatory frameworks were not sufficient enough for the establishment of ideal environmental reporting practices among the listed manufacturing companies in Bangladesh. In addition, larger part (89.50) of the survey participants opined that environmental reporting should be a mandatory task for the listed manufacturing companies in Bangladesh. Thus, present study has made significant contributions to the existing body of literature in several ways. For instance, this study dedicated to identify the limiting factors of environmental reporting practices in Bangladesh context and explored the possible ways of minimizing the challenges of the reporting practices based on the perceptions of key stakeholder groups of the listed manufacturing companies. The study also contributes to the existing environmental reporting literature by developing a well detailed environmental disclosure index on the basis of ISO 14031 requirements, GRI G3 guidelines and other relevant studies to assess and analyze the environmental reporting performance of the companies in Bangladesh context. Moreover, so far as researcher's knowledge goes, it is the first known study that provided the expected 'Themes' of multiple key stakeholder groups of the listed manufacturing companies for ideal environmental reporting in Bangladesh context, These 'Themes' are important for report users together with report producer and regulators.

7.4 Policy Implications

Findings of this research bear some implications for regulatory bodies, corporate managers and other stakeholders of the listed manufacturing companies in Bangladesh. The study sketched the following recommendations on the basis of the findings for the consideration of the stakeholders:

1. Based on the findings, this study calls for BSEC and other relevant regulatory authority to impose mandatory legal requirements on listed companies to provide real environmental performance in the annual reports. The findings of this research further suggest that legislators may wish to take into consideration the information needs of stakeholder and the expected 'Themes' of stakeholders for ideal environmental reporting, when relevant regulations are being revised or formulated in the future. Regulators should consider the issues that are related to the potential costs and benefits of mandatorily environmental reporting to companies, as well as to the community in general.
2. Moreover, considering the relevant findings, this study demands that ICAB should develop industry wise guidelines or Accounting and Reporting Standards for environmental reporting of the organizations on the basis of our corporate and national culture, and introduce best environmental reporting awards among the listed companies to accelerate their environmental reporting performance.
3. Corporate managers and organizers of chambers/business associations, namely FBCCI and BGMEA should initiate training and awareness program for the employees of the listed companies to increase their awareness and skills on environmental reporting practices in Bangladesh context.
4. Based on the empirical findings on perceptions of stakeholders on credibility issue of environmental disclosure, this study demands that ICAB and other relevant regulatory bodies should develop necessary guidelines or Auditing

Standards for external verification of corporate environmental information (corporate environmental audit) as well take proper initiatives to encourage the listed companies to adopt the culture of environmental audit in order to enhance transparency of their environmental performance and disclosures.

5. Taking into consideration the findings on awareness level of stakeholders regarding the concept of environmental reporting, this study demands that Government of Bangladesh should take necessary initiatives to incorporate sustainable development related issues like environmental accounting and reporting in the academic curriculum.
6. Regulatory Bodies should emphasize on proper enforcement of existing environmental reporting related rules and regulations. Because, in absence of an effective law enforcement mechanism there is no guarantee that legal requirements will necessarily lead for compliance.

7.5 Limitations of the Research

The findings of this research have specific academic, regulatory and managerial implications. However, the following limitations should keep in mind when considering the findings of this study:

Due to time and resources constraints, the study was limited to the Cement, Tannery, Textiles and Pharmaceuticals industries in Bangladesh and only twenty listed companies from these sectors were taken as sample. Therefore, it could not provide a generalized overview on the overall environmental reporting performance of the listed manufacturing companies in Bangladesh.

The study used annual reports of the sample companies as the single source of disclosed environmental information. But, there is no regulatory requirement or guidelines for the listed companies in Bangladesh to report environmental information through annual reports. Consequently, some companies disclosed environmental information through web-sites and media announcement and disclosures volume of environmental information in the annual report depends

mainly upon the desire of company management. Therefore, information disclosed in the annual reports of the companies does not represent the whole environmental reporting performance of the companies.

Present study was limited to cover a five year period (2009-2013) in evaluating the environmental reporting performance of the selected manufacturing companies in Bangladesh. But, due to the dynamic nature of business culture and environment, it is difficult to explore the actual trend of environmental reporting practices of the organizations accurately within a short period of time.

This study used an un-weighted disclosure index to examine the extent of environmental disclosures of the sample companies. A dichotomous procedure known as the Kinder Lydenberg Domini (KLD) environmental performance rating system was used to measure the reporting score (RS). Under this method, a company is awarded '1', if it provides an environmental item in its annual report, and if not it is awarded '0'. This method considers all disclosed items as equally important, and disregards the importance of the quality of disclosures. The results of this study should be considered in the light of this issue.

Due to resource and time constraints, only eighty five respondents from five stakeholder groups were included in this study. The selected stakeholder groups were slightly different in sample sizes; a more similar sample size among the selected stakeholder groups would have been preferred. Moreover, the study did not include the shareholders, consumers and bankers in the list of selected stakeholder groups. Lack of inclusion such stakeholder groups was also a limitation of this study.

Because of the limited time period within which this research was conducted, the study could not investigate the causal relationship between the extent of environmental reporting practices and various corporate attributes, such as profitability, ownership, financial leverage and age of the company etc.

7.6 Suggestions for Future Research

Due to the lack of research in the field of environmental reporting practices in Bangladesh, there are many potential avenues for future research. In the light of the limitations of this study, the researcher introduced the following issues which are worthy of further research:

1. While present study analyzed the environmental reporting practices of only 20 companies of four industrial sectors, future studies on environmental reporting should be extended by including more industrial sectors and increasing the number of sample companies to demonstrate and explain the overall nature and extend of environmental reporting practices of the listed manufacturing companies in Bangladesh more specifically.
2. Future research can consider both annual reports and corporate web-sites in exploring the environmental reporting performance of the listed manufacturing companies in Bangladesh by using both quantitative and qualitative approaches.
3. Present study was limited to cover a five year period (2009-2013) in evaluating the environmental reporting performance of the sample companies. This study would encourage other researchers to pursue this avenue of research by extending the length of research period covering several years to explore the trend of the reporting practices more accurately. Because, environmental reporting is a growing area of research that is still in embryo stage in Bangladesh, and extensive longitudinal data will help to reveal the real trends and possibly patterns of environmental reporting performance of the Bangladeshi companies.
4. While present study surveyed the perceptions of only eighty five respondents from five stakeholder groups, the researcher calls for future research to initiate similar survey by inclusion of Shareholders, Consumers and Bankers in the list of stakeholder groups and increasing the number of respondents. In this regard, stakeholder groups should be similar in size. The researcher believed that a better informed picture of stakeholders' perceptions on environmental

reporting practices in Bangladesh can be painted in this way, and it may expand the knowledge about views of stakeholders on environmental reporting.

5. While this study explored the perceptions of stakeholders regarding the importance of the content-category “Themes” of the disclosure index used in this research, The study calls for future researchers to initiate similar studies that could continue to evolve this index and more ‘Themes’ might be relevant and useful to stakeholders for the assessment of the environmental reporting performance of the organizations in Bangladesh. In such an approach, the ‘Themes’ explored from this study could be utilized as starting stage. Furthermore, future research could also explore the perceptions of multiple stakeholder groups concerning each of the sixty environmental items of the disclosure index in order to verify their importance for evaluating the corporate environmental reporting performance in Bangladesh context, Such investigation would also help to extend the robustness and applicability of this environmental disclosure index. In addition, future research could utilize this index on a large number of companies, both in manufacturing and non-manufacturing sectors. Utilization of this index for comparing the environmental disclosure practices of the companies in different contexts (for example, manufacturing vs. non-manufacturing), can also be another avenue of future research.
6. This study calls for extensive future research in the field of environmental reporting in order to investigate the extent of environmental reporting practices of the companies and their possible relationship with various corporate attributes, such as profitability, financial leverage, ownership, industry type, size and age of the company.
7. While present study concentrated on environmental reporting practices in Bangladesh, an international comparative study across the countries of Indian sub-continent, such as Bangladesh, India and Pakistan may become a focus of future researchers.

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Appendices

Appendix – A List of the Sample Companies

Sl.No.	Industrial Sector	Company Name
1	Pharmaceuticals	Advanced Chemical Industries Limited (ACI).
2		Beximco Pharmaceuticals Limited
3		The Ibn Sina Pharmaceuticals Limited
4		Renata Limited
5		Square Pharmaceuticals Limited
6	Cement	Aramit Cement Ltd
7		Confidence Cement Limited
8		Heidelberg Cement Bangladesh Limited
9		Lafarge Surmacement Cement Ltd
10		Mehgna Cement Mills Limited
11	Tannery	Apex Tannery Limited
12		Apex Adelchi Footware Ltd
13		Bata Shoe Company (Bangladesh) Ltd.
14		Legacy Footware Ltd
15		Samata Leather Complex Ltd
16	Textiles	Alltex Industries Limited
17		The Dacca Dyeing & Manufacturing Co. Ltd
18		Envoy Textiles limited
19		Mithun Knitting & Dyeing (CEPZ) Limited
20		Tallu Spinning Mills Limited

Appendix – B

Environmental Disclosure Index

☐ Materials, Water & Energy

- ENI 1. Quantity of raw materials used in the production process (per year); (ISO/GRI)
- ENI 2. Percentage of total raw materials used that are recycled (per year); (ISO)
- ENI 3. Total volume of water used by sources, such as purchased water, abstracted water, rainwater (by year); (ISO).
- ENI 4. Total volume of water recycled and reused (per year); (ISO)
- ENI 5. Initiatives to reduce water consumption and reduction in water consumption as a result of water saving initiatives; (ISO)
- ENI 6. Quantity of Energy consumption per year; (ISO)
- ENI 7. Sources of energy used such as direct, indirect or renewable; (ISO)
- ENI 8. Quantity of energy generated with by-products or process streams; (ISO/GRI)
- ENI 9. Initiatives to reduce energy consumption and reduction in energy consumption as a result of energy saving initiatives; (ISO).

☐ Emissions, Effluents & Wastes

- ENI10. Quantity of hazardous, recyclable or reusable waste produced per year; ISO< Hussain et al., 2006)
- ENI 11. Solid waste disposal information (per year); (ISO)
- ENI 12. Liquid waste disposal information (per year); (ISO)
- ENI 13. Air emission information; (ISO/Hussain et al.,2006)
- ENI 14. Installation of Pollution Control Equipment (ETP and/or APC or other); (Hussain et al., 2006; Uwalomwa, 2011)
- ENI 15. Past and current investment for pollution control equipment and facilities; (Uwalomwa, 2011; Ullah et a.,l 2013)
- ENI 16. Past and current operating cost of pollution control equipment and facilities; (Ullah et al., 2013)
- ENI 17. Contribution for tree plantation program; (Uwalomwa, 2011).

❑ **Product Security & Biodiversity**

- ENI 18. Statement indicates that processing and preparation procedures of product have been improved. (ISO, Uwalomwa, 2011)
- ENI 19. Disclosing that products meet applicable safety standards; (GRI/ISO)
- ENI 20. Verifiable information that ensures the quality of firms' products (e.g. ISO 9,000) (ISO)
- ENI 21. Description of significant impacts of activities, products and services on biodiversity; (GRI)
- ENI 22. Initiatives to mitigate environmental impacts of products and services; (GRI/ISO)

❑ **Environmental Policies & Legal Compliance**

- ENI 23. Environmental goals and targets (Qualitative and/or Quantitative); (Hussain et al, 2006; Uwalomwa, 2011; Ullah et al., 2013).
- ENI 24. Number of environmental programs implemented in the organization (per year). (GRI)
- ENI 25. Statement indicating that firm adopted any international guidelines on sustainability issues; (Hussain et al, 2006; Uwalomwa, 2011; Ullah et al., 2013).
- ENI 26. Compliance status with legal and regulatory requirements;. (GRI/ISO) (Hussain et al., 2006; Uwalomwa, 2011; Ullah et al., 2013).
- ENI 27. Any information like court cases, compounds fines that describes violation of environmental laws. (Uwalomwa, 2011; Ullah et al 2013)
- ENI 28. Information regarding Workers Profit Participation Fund (WPPF); (Labour law).
- ENI 29. Certification on Compliance with Corporate Governance Guideline of BSEC. (BSEC, 2006);

❑ **Human Resource Management**

- ENI 30. Total workforce by employment type; (GRI)
- ENI 31. Benefit provided to full-time employees that are not provided to temporary or part-time employees; (GRI)

- ENI 32. Ratio of basic salary of men and women; (GRI)
- ENI 33. Information regarding employee satisfaction; (GRI)
- ENI 34. Percentage of employees covered by collective bargaining agreements; (GRI & Labour law)
- ENI .35. Total number and rate of employee turnover (per year). (Hussain et al., 2006; Ullah et al., 2013)
- ENI 36. Number of persons who taken specific environmental training; (ISO/ GRI) (Uwalomwa, 2011; Ullah et al., 2013).
- ENI 37. Number of employees participating in environmental programmes (e.g. suggestion, recycle, clean-up initiatives or others); (GRI/ISO0)

☐ Employees' Health & Safety

- ENI 38. Disclosing accident statistics; (Hussain et al., 2006; Uwalomwa, 2011; Ullah et al., 2013)
- ENI 39. Initiatives for promoting employees health and safety; (Uwalomwa, 2011; Ullah et al., 2013)
- ENI 40. Statement indicates the status of complying with employee's health and safety standards and regulations; (GRI/ISO) (Uwalomwa, 2011.,; Ullah et al., 2013).
- ENI 41. Operations identified that having significant risk for child labour and measures taken for eliminating child labour. Hussain et al.,2006; Uwalomwa, 2011/ISO/GRI)
- ENI 42. Initiatives for reducing or eliminating pollution in the work environment; (Hussain et al.,2006; Uwalomwa, 2011)
- ENI 43. Initiatives for the establishment of day-core centre; (Hussain et al,2006; Uwalomwa, 2011)
- ENI 44. Providing information about maternity and paternity leave of the employees; (Hussain et al., 2006; Uwalomwa, 2011; Ullah et al., 2013)

☐ Community & others

- ENI 45. Number of local cleanup or recycling initiatives, sponsored or self-implemented; (Hussain et a.l, 2006; Uwalomwa, 2011)

- ENI 46. Number of environmental educational programmes or materials provided for the community; (Uwalomwa, 2011)
- ENI 47. Donation of cash, product or employees services to support community activities, events and organizations; (Hussain et al., 2006; Uwalomwa, 2011; Ullah et al., 2013)
- ENI 48. Sponsoring public health projects; (Hussain et al., 2006; Uwalomwa, 2011) (GRI/ISO).
- ENI 49. Transportation, recreation facilities, educational support for the employees' children and family members; (Hussain et al., 2006; Uwalomwa, 2011; Ullah et a.,l 2013)
- ENI 50. Establishment of educational institutions; (Hussain et al., 2006; Uwalomwa, 2011; Ullah et al., 2013)
- ENI 51. Education, training counselling and risk-control programs to assist workforce members, their families or community members regarding serious diseases; (Hussain et al., 2006; Uwalomwa, 2011; Ullah et al., 2013)
- ENI 52. Initiatives for women empowerment & gender equity; (Hussain et al., 2006; Uwalomwa, 2011) (GRI)
- ENI 53. Practices related to customer satisfaction; ((Hussain et al., 2006; Uwalomwa, 2011).

□ Research & Development

- ENI 54. Research and development funds applied to projects with environmental significance; GRI/ISO/ Hussain et al., 2006; Uwalomwa, 2011).
- ENI 55. Investment in research for improving environment friendly technology to reduce pollution; (ISO/GRI/(Hussain et al., 2006; Uwalomwa, 2011)
- ENI 56. Conducting safety research on the company's products; (GRI/ISO/ Uwalomwa, 2011)
- ENI 57. Conducting research to improve worker's job satisfaction; Uwalomwa, 2011)
- ENI 58. Conducting environmental impact studies to monitor the impact of firm's activities on the environment; (ISO/ Uwalomwa, 2011)

ENI 59. Conducting research to improve worker's safety; (GRI/ISO/ Uwalomwa, 2011)

EN 60. Conducting research to reduce energy and/or water consumption; (GRI/ISO/ Hussain et al., 2006; Uwalomwa, 2011)

The four testable dimensions of environmental information are content-category themes, evidence, location and news-type of disclosures;

❑ Content-Category Themes of Environmental Disclosures Index:

1. Materials, Water & Energy
2. Emissions, Effluents & Wastes
3. Product Security & Biodiversity
4. Environmental Policies & Legal Compliance.
5. Human Resource Management.
6. Employee Health & Safety.
7. Community & others
8. Research & Development

❑ Disclosure in terms of Evidence

1. Monetary Quantitative;
2. Non-monetary Quantitative;
3. Descriptive;

❑ Disclosure in terms of Location

1. Board of Director's Report and Chairman's Statement;
2. Corporate Social Responsibility Report (CSR Report);
3. Balance Sheet and Income Statement.
4. Notes to the Income Statement & Annexures.

❑ Disclosure in terms of News type

1. **Good:** Statement that reflects credit to the company;
2. **Bad:** Statement that reflects discredit to the company;
3. **Neutral:** Statements whose credit or discredit for the company is not obvious.

Source: ISO 14031:1999 (E); Hossain et al., 2006; Uwalomwa, 2011 and Ajibolade and Uwuigbe, 2013.

Appendix-C

Descriptive Statistics of Responses of the Survey Participants

Table 1.1: Response to SQ-1 of the Questionnaire

	Mean	Std.	CV	Skewness	Kurtosis
SG=1	2.90	.94	23.92	-.726	-.031
SG=2	2.55	1.09	32.21	.149	-1.220
SG=3	3.4	.89	21.29	-.922	.224
SG=4	2.87	1.12	34.49	.299	.617
SG=5	3.00	1.25	41.57	.000	-.912
All Group	2.94	1.09	31.20	-.302	-.889

Table 1.2: Response to SQ-1 of the Questionnaire

Scal	Percentage of response					
	Respondents groups					
	All respondents	Accounts Executives	Internal auditors	External Auditors	Member of the regulatory bodies	Environmental activists
This is an Unknown term to me	2 (2.35%)	0	0	0	1 (6.67%)	1 (10%)
I only heard the term	35 (41.18%)	11 (55%)	12 (60%)	5 (25%)	4 (26.67%)	3 (30%)
Partially understanding	25 (29.41%)	3 (15%)	6 (30%)	7 (35%)	7 (46.66%)	2 (20%)
Good understanding	12 (14.12%)	3 (15%)	1 (5%)	3 (15%)	2 (13.33%)	3 (30%)
Excellent understanding	11 (12.94%)	3 (15%)	1 (5%)	5 (25%)	1 (6.67%)	1 (10%)
Total (Number of Respondents)	85	20	20	20	15	10

Table 2.1: Response to SQ-2 of the Questionnaire

	Mean	Std.	CV	Skewness	Kurtosis
SG=1	4.65	.489	10.52	-.681	-1.719
SG=2	4.25	.550	12.94	.132	-.076
SG=3	4.20	1.005	23.93	-1.824	4.434
SG=4	4.60	.507	11.02	-.455	-2.094
SG=5	4.10	1.449	35.34	-1.583	1.389
All Group	4.38	.816	18.63	-2.012	5.818

Table 2.2: Response to SQ-2 of the Questionnaire

Scal	Percentage of response					
	Respondents groups					
	All respondents	Accounts Executives	Internal auditors	External Auditors	Member of the regulatory bodies	Environmental activists
Strongly disagree	2 (2.40%)	0	0	5	0	1 (10%)
Disagree	1 (1.17%)	0	0	0	0	1 (10%)
Neutral	3 (3.53%)	0	1 (5%)	2 (10%)	0	0
Agree	36 (42.35%)	7 (35%)	13 (65%)	8 (40%)	6 (40%)	2 (20%)
Strongly agree	43 (50.60%)	13 (65%)	6 (30%)	9 (45%)	9 (60%)	6 (60%)
Total number of Respondents	85	20	20	20	15	10

Table 3.1: Response to SQ-3 of the Questionnaire

	Mean	Std.	CV	Skewness	Kurtosis
SG=1	4.65	.489	10.52	-.681	-1.719
SG=2	4.25	.639	15.04	-.253	-.439
SG=3	4.40	.681	15.48	-.712	-.446
SG=4	4.53	.516	11.39	-.149	-2.308
SG=5	4.30	1.059	24.63	-1.444	1.258
All Group	4.44	.663	14.93	-1.013	1.007

Table 3.2: Response to SQ-3 of the Questionnaire

Scal	Percentage of response					
	Respondents groups					
	All respondents	Accounts Executives	Internal auditors	External Auditors	Member of the regulatory bodies	Environmental activists
Strongly disagree	0	0	0	0	0	0
Disagree	1 (1.20%)	0	0	0	0	1 (10%)
Neutral	5 (5.87%)	0	2 (10%)	2 (10%)	0	1 (10%)
Agree	35 (41.18%)	7 (35%)	11 (55%)	8 (40%)	7 (46.7%)	2 (20%)
Strongly agree	44 (51.75%)	13 (65%)	7 (35%)	10 (50%)	8 (53.3%)	6 (60%)

Table 4.1: Response to SQ-4 of the Questionnaire

	Mean	Std.	CV	Skewness	Kurtosis
SG=1	1.85	.671	36.27	.177	-.548
SG=2	1.85	.813	43.95	.296	-1.399
SG=3	2.15	.933	43.40	.970	.523
SG=4	2.20	1.082	49.18	.328	-1.126
SG=5	4.60	.516	11.22	-.484	-2.277
All Group	4.40	.710	16.14	-1.371	2.592

Table 4.2: Response to SQ-4 of the Questionnaire

Scal	Percentage of response					
	Respondents groups					
	All respondents	Accounts Executives	Internal auditors	External Auditors	Member of the regulatory bodies	Environmental activists
Strongly disagree	0	0	0	0	0	0
Disagree	3 (3.53%)	1 (5%)	2 (10%)	0	0	0
Neutral	4 (4.70%)	0	1 (5%)	3 (15%)	0	0
Agree	38 (44.71%)	7 (35%)	12 (60%)	7 (35%)	8 (53.3%)	4 (40%)
Strongly agree	40 (47.06%)	12 (60%)	5 (25%)	10 (50%)	7 (46.7%)	6 (60%)

Table 5.1: Response to SQ-5 of the Questionnaire

	Mean	Std.	CV	Skewness	Kurtosis
SG=1	4.50	.607	13.49	-.785	-.213
SG=2	3.90	.788	20.21	.186	-1.308
SG=3	4.10	.718	17.51	-.152	-.880
SG=4	4.47	.516	11.54	.149	-2.308
SG=5	4.40	.516	11.73	.484	-2.277
All Group	4.25	.688	16.19	-.366	-.846

Table 5.2: Response to SQ-5 of the Questionnaire

Scal	Percentage of response					
	Respondents groups					
	All respondents	Accounts Executives	Internal auditors	External Auditors	Member of the regulatory bodies	Environmental activists
Strongly disagree	0	0	0	0	0	0
Disagree	0	0	0	0	0	0
Neutral	12 (14.12)	1 (5%)	7 (35%)	4 (20%)	0	0
Agree	40 (47.06)	8 (40%)	8 (40%)	10 (50%)	8 (53.7%)	6 (60%)
Strongly agree	33 (38.82)	11 (55%)	5 (25%)	6 (30%)	7 (46.7%)	4 (40%)

Table 6.1: Response to SQ-6 of the Questionnaire

	Mean	Std.	CV	Skewness	Kurtosis
SG=1	1.85	.671	36.27	.177	-.548
SG=2	1.85	.813	43.95	.296	-1.399
SG=3	2.15	.933	43.40	.970	.523
SG=4	2.20	1.082	49.18	.328	-1.126
SG=5	4.70	.483	10.28	-1.035	-1.224
All Group	2.32	1.207	52.03	.857	-.107

Table 6.2: Response to SQ-6 of the Questionnaire

Scal	Percentage of response					
	Respondents groups					
	All respondents	Accounts Executives	Internal auditors	External Auditors	Member of the regulatory bodies	Environmental activists
Strongly disagree	23 (27.06%)	6 (30%)	8 (40%)	4 (20%)	5 (33.3%)	0
Disagree	34 (40%)	11 (55%)	7 (35%)	12 (60%)	4 (26.7%)	0
Neutral	13 (15.3%)	3 (15%)	5 (25%)	1 (5%)	4 (26.7%)	0
Agree	8 (9.41%)	0	0	3 (15%)	2 (13.3%)	3 (30%)
Strongly agree	7 (8.23%)	0	0	0	0	7 (70%)

Table 7.1: Response to SQ-7 of the Questionnaire

	Mean	Std.	CV	Skewness	Kurtosis
SG=1	3.90	.553	14.18	-.083	.766
SG=2	3.85	.671	17.43	.177	-.548
SG=3	3.90	.718	18.41	.152	-.880
SG=4	3.73	.704	18.87	.433	-.669
SG=5	4.50	.707	15.71	-1.179	-.571
All Group	4.22	.679	16.09	-.309	-.811

Table 7.2: Response to SQ-7 of the Questionnaire

Scal	Percentage of response					
	Respondents groups					
	All respondents	Accounts Executives	Internal auditors	External Auditors	Member of the regulatory bodies	Environmental activists
Strongly disagree	0	0	0	0	0	0
Disagree	0	0	0	0	0	0
Neutral	27.06/23	20	30	30	40	10
Agree	52.94/45	70	55	50	46.7/7	30
Strongly agree	20/17	10	15	20	13.3/2	60

Table 8.1: Response to SQ-8 of the Questionnaire

	Mean	Std.	CV	Skewness	Kurtosis
SG=1	3.70	.733	19.81	.553	-.834
SG=2	3.75	.639	17.04	.253	-.439
SG=3	3.25	.786	24.18	-.496	-1.152
SG=4	3.00	1.195	39.83	-.869	-.754
SG=5	4.40	.843	19.16	-1.001	-.665
All Group	3.56	.919	25.81	-.620	.673

Table 8.2: Response to SQ-8 of the Questionnaire

Scal	Percentage of response					
	Respondents groups					
	All respondents	Accounts Executives	Internal auditors	External Auditors	Member of the regulatory bodies	Environmental activists
Strongly disagree	3.53/3	0	0	0	20	0
Disagree	5.88/5	0	0	20	6.7/1	0
Neutral	34.12/29	45	35	35	26.7/4	20
Agree	43.53/37	40	55	45	46.7/7	20
Strongly agree	12.94/11	15	10	0	0	60

Table 9.1: Response to SQ-9 of the Questionnaire

	Mean	Std.	CV	Skewness	Kurtosis
SG=1	2.20	.951	43.23	.375	-.593
SG=2	1.90	1.021	53.74	.877	-.267
SG=3	2.35	.745	31.70	.151	.082
SG=4	1.67	.724	43.35	.628	-.654
SG=5	1.90	.994	52.32	1.085	.914
All Group	2.04	.906	44.41	.520	-.525

Table 9.2: Response to SQ-9 of the Questionnaire

Scal	Percentage of response					
	Respondents groups					
	All respondents	Accounts Executives	Internal auditors	External Auditors	Member of the regulatory bodies	Environmental activists
Strongly disagree	31.7/27	5/25	9/45	2/10	46.7/7	4/40
Disagree	40/34	8/40	6/30	10/50	40/6	4/40
Neutral	21.2/18	5/25	3/15	7/35	13.3/2	1/10
Agree	7.1/6	2/10	2/10	1/5	0	1/10
Strongly agree	0	0	0	0	0	0

Table 10.1: Response to SQ-10 of the Questionnaire

	Mean	Std.	CV	Skewness	Kurtosis
SG=1	3.80	.834	21.95	-.194	-.357
SG=2	3.85	.671	17.43	.177	-.548
SG=3	3.80	1.005	26.45	-.594	-.490
SG=4	4.07	.704	17.30	-.092	-.669
SG=5	3.30	1.059	32.09	-.042	-1.238
All Group	3.80	.856	22.53	-.415	-.329

Table 10.2: Response to SQ-10 of the Questionnaire

Scal	Percentage of response					
	Respondents groups					
	All respondents	Accounts Executives	Internal auditors	External Auditors	Member of the regulatory bodies	Environmental activists
Strongly disagree	0	0	0	0	0	0
Disagree	8.23/7	1/5	0	3/15	0	3/30
Neutral	23.53/20	6/30	6/30	3/15	20/3	2/20
Agree	48.24/41	9/45	11/55	9/45	53.3/8	4/40
Strongly agree	20/17	4/20	3/15	5/25	26.67/4	1/10

Table 11.1: Response to SQ-11 of the Questionnaire

	Mean	Std.	CV	Skewness	Kurtosis
SG=1	4.25	.639	15.04	-.253	-.439
SG=2	3.90	.852	21.85	-.363	-.303
SG=3	3.90	.641	16.44	-.1254	3.865
SG=4	3.93	.704	17.91	-1.326	3.991
SG=5	4.50	.707	15.71	-1.779	.571
All Group	4.06	.730	17.98	-.656	.726

Table 11.2: Response to SQ-11 of the Questionnaire

Scal	Percentage of response					
	Respondents groups					
	All respondents	Accounts Executives	Internal auditors	External Auditors	Member of the regulatory bodies	Environmental activists
Strongly disagree	0	0	0	0	0	0
Disagree	3.5/3	0	1/5	1/5	6.7/1	0
Neutral	12.9/11	1/10	5/25	2/10	6.7/1	1/10
Agree	57.7/49	11/55	9/45	15/75	73.3/11	3/30
Strongly agree	25.9/22	7/35	5/25	2/10	13.3/2	6/60

Table 12.1: Response to SQ-12 of the Questionnaire

	Mean	Std.	CV	Skewness	Kurtosis
SG=1	4.05	.686	16.94	-.062	-.630
SG=2	3.85	.671	17.43	.177	-.548
SG=3	4.10	.641	15.63	-.080	-.250
SG=4	4.30	.724	16.84	-.628	-.654
SG=5	4.60	.699	15.20	-1.658	2.045
All Group	4.13	.704	17.05	-.186	-.941

Table 12.2: Response to SQ-12 of the Questionnaire

Scal	Percentage of response					
	Respondents groups					
	All respondents	Accounts Executives	Internal auditors	External Auditors	Member of the regulatory bodies	Environmental activists
Strongly disagree	0	0	0	0	0	0
Disagree	0	0	0	0	0	0
Neutral	18.8/16	2/20	6/30	3/15	13.3/2	1/10
Agree	49.4/42	11/55	11/55	12/60	40/6	2/20
Strongly agree	31.8/27	5/25	3/15	5/25	46.7/7	7/70

Table 13.1: Response to SQ-13of the Questionnaire

	Mean	Std.	CV	Skewness	Kurtosis
SG=1	2.10	.553	26.33	.083	.766
SG=2	2.00	.562	28.10	.000	.807
SG=3	2.40	.754	31.42	-.851	-.609
SG=4	1.73	.799	46.18	.555	-1.132
SG=5	2.00	.471	23.55	.000	4.500
All Group	2.07	.669	32.32	-.081	-.718

Table 13.2: Response to SQ-13 of the Questionnaire

Scal	Percentage of response					
	Respondents groups					
	All respondents	Accounts Executives	Internal auditors	External Auditors	Member of the regulatory bodies	Environmental activists
Financial auditors	18.82/16	2/10	3/15	3/15	46.67/7	1/10
Specialist Environmental Auditors	55.29/47	14/70	14/70	6/30	33.33/5	8/80
Both financial & environmental auditors	25.89/22	4/20	3/15	11/55	20/3	1/10

Table 14.1: Response to SQ-14 of the Questionnaire

	Mean	Std.	CV	Skewness	Kurtosis
SG=1	2.30	.979	42.57	.442	-.586
SG=2	2.00	.795	39.75	.699	.807
SG=3	1.80	.696	38.67	.292	-.734
SG=4	2.80	.676	24.14	.256	-.505
SG=5	4.10	1.287	31.39	-1.009	-.812
All Group	2.41	1.105	45.85	.798	.153

Table 14.2: Response to SQ-14 of the Questionnaire

Scal	Percentage of response					
	Respondents groups					
	All respondents	Accounts Executives	Internal auditors	External Auditors	Member of the regulatory bodies	Environmental activists
Strongly disagree	18.82/16	4/20	5/25	7/35	0	0
Disagree	43.53/37	9/45	11/55	10/50	33.33/5	2/20
Neutral	22.35/19	4/20	3/15	3/15	53.33/8	1/10
Agree	8.24/7	3/15	5	0	13.13/2	1/10
Strongly agree	7.06/6	0	0	0	0	6/60

Table 15.1: Response to SQ-15 of the Questionnaire

	Mean	Std.	CV	Skewness	Kurtosis
SG=1	2.10	.788	37.52	1.247	2.288
SG=2	2.35	.933	39.70	.918	-.048
SG=3	2.20	.894	40.64	1.040	.766
SG=4	2.40	1.056	44.00	.723	-.749
SG=5	2.60	1.075	41.35	.349	-1.274
All Group	2.29	.924	40.35	.861	-.162

Table 15.2: Response to SQ-15 of the Questionnaire

Scal	Percentage of response					
	Respondents groups					
	All respondents	Accounts Executives	Internal auditors	External Auditors	Member of the regulatory bodies	Environmental activists
Strongly disagree	12.94/11	3/15	2/10	3/15	13.33/2	1/10
Disagree	63.6/54	14/70	13/65	13/65	60/9	5/50
Neutral	4.7/4	1/5	1/5	1/5	0	1/10
Agree	18.8/16	2/10	4/20	3/15	26.67/4	3/30
Strongly agree	0	0	0	0	0	0

Table 16.1: Response to SQ-16 of the Questionnaire

	Mean	Std.	CV	Skewness	Kurtosis
SG=1	4.65	.587	12.62	-1.521	1.636
SG=2	4.35	.813	18.69	-.766	-1.002
SG=3	4.20	.894	21.29	-.922	.224
SG=4	4.73	.458	9.68	-1.176	-.734
SG=5	4.80	.422	8.79	-1.779	1.406
All Group	4.51	.718	15.92	-1.308	1.001

Table 16.2: Response to SQ-16 of the Questionnaire

Scal	Percentage of response					
	Respondents groups					
	All respondents	Accounts Executives	Internal auditors	External Auditors	Member of the regulatory bodies	Environmental activists
Strongly disagree	0	0	0	0	0	0
Disagree	1.2/1	0	0	1/5	0	0
Neutral	9.4/8	1/5	4/20	3/15	0	0
Agree	27.1/23	5/25	5/25	7/35	26.7/4	2/20
Strongly agree	62.4/53	14/70	11/55	9/45	73.3/11	8/80

Table 17.1: Response to SQ-17 of the Questionnaire

	Mean	Std.	CV	Skewness	Kurtosis
SG=1	3.75	.851	22.69	-.606	.239
SG=2	3.75	.910	24.27	-.378	-.371
SG=3	3.65	.875	23.97	-1.821	3.950
SG=4	3.60	.910	25.28	.315	-.714
SG=5	3.50	.707	20.20	1.179	.571
All Group	3.67	.851	23.19	-.493	.324

Table 17.2: Response to SQ-17 of the Questionnaire

Scal	Percentage of response					
	Respondents groups					
	All respondents	Accounts Executives	Internal auditors	External Auditors	Member of the regulatory bodies	Environmental activists
Strongly disagree	1.2/1	0	0	1/5	0	0
Disagree	7.1/6	1/10	1/10	1/5	6.6/1	0
Neutral	29.4/25	2/20	5/25	3/15	46.7/7	6/60
Agree	48.2/41	11/55	9/45	14/70	26.7/4	3/30
Strongly agree	14.1/12	3/15	4/20	1/5	20/3	1/10

Table 18.1: Response to SQ-18 of the Questionnaire

	Mean	Std.	CV	Skewness	Kurtosis
SG=1	3.05	1.099	36.03	.685	-.789
SG=2	2.80	1.196	42.71	.221	-.486
SG=3	2.60	.995	38.27	-.128	-.884
SG=4	2.67	1.175	44.01	.451	-.555
SG=5	2.80	1.619	57.82	.204	-1.695
All Group	2.79	1.166	41.79	.287	-.711

Table 18.2: Response to SQ-18 of the Questionnaire

Scal	Percentage of response					
	Respondents groups					
	All respondents	Accounts Executives	Internal auditors	External Auditors	Member of the regulatory bodies	Environmental activists
Strongly disagree	12.9/11	0	15	15	13.3/2	30
Disagree	31.8/27	40	25	30	40/6	20
Neutral	28.2/	30	35	35	20/3	10
Agree	17.6/15	15	15	20	20/3	20
Strongly agree	9.4	15	10	0	6.7	20

Table 19.1: Response to SQ-19 of the Questionnaire

Stake Holder Groups	Theme-1		Theme-2		Theme-3		Theme-4		Theme-5		Theme-6		Theme-7		Theme-8	
	Mean	Std.	Mean	Std.	Mean	Std.	Mean	Std.	Mean	Std.	Mean	Std.	Mean	Std.	Mean	Std.
SG-1	4.30	.865	4	1.125	4.05	1.050	4.10	1.071	4.20	.951	4.45	.826	3.60	.821	3.65	.671
SG-2	4.10	.852	4.15	.745	4.15	.813	4.30	.733	4.25	.786	4.40	.821	3.70	.865	3.40	.883
SG-3	4.35	.671	4.25	.639	4.20	.696	4.25	.716	4.25	.639	4.20	.768	4.15	.671	3.95	.759
SG-4	4.47	.743	4.27	.884	4.40	.737	4.33	.724	4.20	.775	4.07	.799	3.87	.743	4.00	.756
SG-5	4.00	.667	4.10	.738	4.20	.632	4.10	.568	4.10	.568	4.00	.471	3.90	.738	4.20	.632
All Groups	4.26	.774	4.15	.838	4.19	.809	4.22	.792	4.21	.757	4.26	.774	3.84	.784	3.79	.788

Table 19.2: Response to SQ-19 of the Questionnaire (Accounts Executives)

Degree of Response	Theme-1	Theme-2	Theme-3	Theme-4	Theme-5	Theme-6	Theme-7	Theme-8
Not Important at all	0	0	0	0	0	0	0	0
A Little Bit Important	0	3 (15%)	2 (10%)	2 (10%)	1 (5%)	1 (5%)	2 (10%)	1 (5%)
Somewhat Important	5 (25%)	3 (15%)	4 (20%)	4 (20%)	4 (20%)	1 (5%)	6 (30%)	6 (30%)
Important	4 (20%)	5 (25%)	5 (25%)	4 (20%)	5 (25%)	6 (30%)	10 (50%)	12 (60%)
Very Important	11 (55%)	9 (45%)	9 (45%)	10 (50%)	10 (50%)	12 (60%)	2 (10%)	1 (5%)

Table 19.3: Response to SQ-19 of the Questionnaire (Internal Auditors)

Degree of Response	Theme-1	Theme-2	Theme-3	Theme-4	Theme-5	Theme-6	Theme-7	Theme-8
Not Important at all	0	0	0	0	0	0	0	0
A Little Bit Important	1 (5%)	1 (5%)	1 (5%)	0	1 (5%)	1 (5%)	2 (10%)	3 (15%)
Somewhat Important	3 (15%)	1 (5%)	2 (10%)	3 (15%)	1 (5%)	1 (5%)	5 (25%)	8 (40%)
Important	9 (45%)	12 (60%)	10 (50%)	8 (40%)	10 (50%)	7 (35%)	10 (50%)	7 (35%)
Very Important	7 (35%)	6 (30%)	7 (35%)	9 (45%)	8 (40%)	11 (55%)	3 (15%)	2 (10%)

Table 19.4: Response to SQ-19 of the Questionnaire (External Auditors)

Degree of Response	Theme-1	Theme-2	Theme-3	Theme-4	Theme-5	Theme-6	Theme-7	Theme-8
Not Important at all	0	0	0	0	0	0	0	0
A Little Bit Important	0	0	0	0	0	0	0	0
Somewhat Important	2 (10%)	2 (10%)	3 (15%)	3 (15%)	2 (10%)	4 (20%)	3 (15%)	6 (30%)
Important	9 (45%)	11 (55%)	10 (50%)	9 (45%)	11 (55%)	8 (40%)	11 (55%)	9 (45%)
Very Important	9 (45%)	7 (35%)	7 (35%)	8 (40%)	7 (35%)	8 (40%)	6 (30%)	5 (25%)

Table 19.5: Response to SQ-19 of the Questionnaire (Member of the Regulatory Bodies)

Degree of Response	Theme-1	Theme-2	Theme-3	Theme-4	Theme-5	Theme-6	Theme-7	Theme-8
Not Important at all	0	0	0	0	0	0	0	0
A Little Bit Important	0	0	0	0	0	0	0	0
Somewhat Important	2 (13.3%)	4 (26.7%)	2 (13.3%)	2 (13.3%)	3 (20%)	4 (26.7%)	5 (33.3%)	4 (26.7%)
Important	4 (26.7%)	3 (20%)	5 (33.3%)	6 (40%)	6 (40%)	6 (40%)	7 (46.7%)	7 (46.7%)
Very Important	9 (60%)	8 (53.3%)	8 (53.3%)	7 (46.7%)	6 (40%)	5 (33.3%)	3 (20%)	4 (26.7%)

Table 19.6: Response to SQ-19 of the Questionnaire (Environmental Activities)

Degree of Response	Theme-1	Theme-2	Theme-3	Theme-4	Theme-5	Theme-6	Theme-7	Theme-8
Not Important at all	0	0	0	0	0	0	0	0
A Little Bit Important	0	0	0	0	0	0	0	0
Somewhat Important	2 (20%)	2 (20%)	1 (10%)	1 (10%)	1 (10%)	1 (10%)	3 (30%)	1 (10%)
Important	6 (60%)	5 (50%)	6 (60%)	7 (70%)	7 (70%)	8 (80%)	5 (50%)	6 (60%)
Very Important	2 (20%)	3 (30%)	3 (30%)	2 (20%)	2 (20%)	1 (10%)	2 (20%)	3 (30%)

Table 19.7: Response to SQ-19 of the Questionnaire (All Groups)

Degree of Response	Theme-1	Theme-2	Theme-3	Theme-4	Theme-5	Theme-6	Theme-7	Theme-8
Not Important at all	0	0	0	0	0	0	0	0
A Little Bit Important	1 (1.2%)	4 (4.7%)	3 (3.5%)	2 (2.4%)	2 (2.4%)	2 (2.4%)	4 (4.7%)	4 (4.7%)
Somewhat Important	14 (16.5%)	12 (14.1%)	12 (14.1%)	13 (15.3%)	11 (12.9%)	11 (12.9%)	22 (25.9%)	25 (29.4%)
Important	32 (37.6%)	36 (42.4%)	36 (42.4%)	34 (40%)	39 (45.9%)	35 (41.2%)	43 (50.6%)	41 (48.2%)
Very Important	38 (44.7%)	33 (38.8%)	34 (40%)	36 (42.4%)	33 (38.8%)	37 (43.5%)	16 (18.8%)	15 (17.6%)

Appendix-D

Sample of Research Questionnaire

Dear Respondent,

I am a Ph.D. Fellow of the Institute of Bangladesh Studies (IBS), University of Rajshahi, Rajshahi. The title of my research is “Environmental Reporting Practices: A Study on Selected Manufacturing Companies in Bangladesh “.The purpose of this study is to explore the nature and extent of environmental reporting practices of the selected manufacturing companies in Bangladesh and investigate the stakeholders’ perceptions regarding the reporting practices. For conducting the study, your cordial help is necessary. It is assured that all the data supplied shall be used solely for the purpose of academic research and will be treated with utmost confidentiality.

Sincerely yours

(Mohammed Fazlur Rahman Khan)
Ph.D. Fellow, Session: 2012-2013
Institute of Bangladesh Studies (IBS),
University of Rajshahi, Rajshahi.
Mobile:01686082874
E-mail:frkhan62@yahoo.com

Section A: General Information

1. Name of the respondent:
2. Name of the organization:
3. Designation and department:
4. Number of working years with the current organization: :1-2yrs / 3-5yrs / 5- 10yrs /10yrs and above
5. No. of working years in the current role: 1-2yrs / 3-5yrs / 5- 10yrs /10years and above
6. Total length of service: 1-2yrs / 3-5yrs / 5- 10yr /10yrs and above
7. Age: Under 30yrs / 31-35 yrs / 36-40yrs / Above 40yrs
8. Highest qualification: Secondary / Graduation / Masters / Others.
9. Field of study (for Bachelor Degree): Business Studies / Social science / Science / Others
10. Membership of Professional Accounting Bodies (if any): ICAB / ACCA / ICMAB / Others / No

Date of interview:

Data Collection Period: 2014

Section B

Concept of Environmental Reporting

SQ1. Could you please tell me that, what is your understanding regarding the concept of Environmental Reporting?

[Please tick on the answer that applies.]

- a) I had an excellent understanding on what environmental reporting is and its purpose.
- b) Good understanding.
- c) Partially understanding
- d) I only heard the term.
- e) This is an unknown term to me.

Significance of Environmental Reporting practices of the organizations

SQ2. “Environmental Reporting practice is an important concept for listed manufacturing companies in Bangladesh to improve their environmental accountability” - to what extent do you agree or disagree to this statement?

[Please tick on the answer that applies.]

- a) Strongly disagree, b) Disagree c) Neutral d) Agree e) Strongly agree.

SQ3. “The disclosure of environmental information will improve the corporate image of the listed manufacturing companies in Bangladesh.” - to what extent do you agree or disagree to this statement?

[Please tick on the answer that applies.]

- a) Strongly disagree, b) Disagree c) Neutral d) Agree e) Strongly agree.

SQ4. “Environmental Reporting practice can play a significant role in reducing environmentally hazardous activities of the listed manufacturing companies in Bangladesh.” - to what extent do you agree or disagree to this statement?

[Please tick on the answer that applies.]

- a) Strongly disagree, b) Disagree c) Neutral d) Agree e) Strongly agree.

Influence of Environmental Reporting on activities of stakeholders

SQ5. “Environmental disclosures of manufacturing companies can influence the activities of various stakeholders’ groups.”-to what extent do you agree or disagree to this statement?

[Please tick on the answer that applies.]

- a) Strongly disagree b) Disagree c) Neutral d) Agree e) Strongly agree.

Perceptions regarding environmental performance of the listed manufacturing companies in Bangladesh

SQ6. “Bangladeshi listed Manufacturing companies’ activities are generally environment friendly”- to what extent do you agree or disagree to the statement?

[Please tick on the answer that applies.]

a) Strongly disagree b) Disagree c) Neutral d) Agree e) Strongly Agree.]

Nature and extent of environmental reporting practices of listed manufacturing companies in Bangladesh

SQ7. “The extent of environmental reporting practices of the listed manufacturing companies in Bangladesh is negligible”- to what extent do you agree or disagree to the statement?

[Please tick on the answer that applies.]

a) Strongly disagree b) Disagree c) Neutral d) Agree e) Strongly Agree.]

SQ8. “Bangladeshi manufacturing companies disclose highest portion of their environmental information on a descriptive form”- to what extent do you agree or disagree to the statement?

[Please tick on the answer that applies.]

a) Strongly disagree b) Disagree c) Neutral d) Agree e) Strongly Agree.]

Perceptions regarding the motives of listed manufacturing companies behind environmental reporting practices

SQ9. “Most of the Bangladeshi manufacturing companies disclose environmental information for demonstrating transparency of their operations”-to what extent do you agree or disagree to this statement?

[Please tick on the answer that applies.]

a) Strongly disagree b) Disagree c) Neutral d) Agree e) Strongly agree.

SQ10. “Bangladeshi listed manufacturing companies disclose environmental information for improving corporate image rather than to fulfil stakeholders’ needs”-to what extent do you agree or disagree to this statement?

[Please tick on the answer that applies.]

a) Strongly disagree b) Disagree c) Neutral d) Agree e) Strongly agree.

Credibility issue and needs of external audit

SQ11. “Environmental reports of the listed manufacturing companies in Bangladesh do not reflect the real environmental performance of the companies”-to what extent do you agree or disagree to this statement?

[Please tick on the answer that applies.]

a) Strongly disagree b) Disagree c) Neutral d) Agree e) Strongly agree.

SQ12. “Environmental disclosures which are published by listed manufacturing companies in Bangladesh should be externally verified”-to what extent do you agree or disagree to this statement?

[Please tick on the answer that applies.]

a) Strongly disagree b) Disagree c) Neutral d) Agree e) Strongly agree.

SQ13. Which kind of auditor do you prefer to perform the audit activities of Environmental disclosures of the listed manufacturing companies in Bangladesh?

[Please tick on the answer that applies.]

- a) The company’s financial auditors.
- b) Specialist environmental auditors.
- c) Both financial and environmental auditors.

Regulatory frameworks for Environmental Reporting in Bangladesh.

SQ14. “Existing environmental and corporate related laws are sufficient enough for the establishment of ideal environmental reporting practices among the listed manufacturing companies in Bangladesh”-to what extent do you agree or disagree to this statement?

[Please tick on the answer that applies.]

a) Strongly disagree b) Disagree c) Neutral d) Agree e) Strongly agree.

SQ15. “Environmental reports of listed manufacturing companies’ should be separate stand-alone document from their annual report.”-to what extent do you agree or disagree to this statement?

[Please tick on the answer that applies.]

a) Strongly disagree, b) Disagree c) Neutral d) Agree e) Strongly agree.

SQ16. “Environmental Reporting should be a mandatory task for the listed manufacturing companies in Bangladesh.”-to what extent do you agree or disagree to this statement?

[Please tick on the answer that applies.]

a) Strongly disagree, b) Disagree c) Neutral d) Agree e) Strongly agree.

SQ17. “Existing Accounting Standards (BAS/BFRS) are not sufficient enough for the establishment of an ideal Environmental Reporting System among the manufacturing companies in Bangladesh”-to what extent do you agree or disagree to this statement?

[Please tick on the answer that applies.]

a) Strongly disagree b) Disagree c) Neutral d) Agree e) Strongly agree.

Role of Government and other regulatory bodies

SQ18. “Government and other regulatory bodies in Bangladesh play expected roles in the development of policy guidelines that encourages environmental reporting practices of listed manufacturing companies” -to what extent do you agree or disagree to this statement?

[Please tick on the answer that applies.]

a) Strongly disagree, b) Disagree c) Neutral d) Agree e) Strongly agree.

SQ19. The following table shows eight content-category themes which are suggested by the Standard Setting Bodies (like GRI & ISO) and various researchers for the companies to report on their environmental performance. Please read them through and rate them to indicate the importance of each is to you for an ideal environmental report. Give “5” to the ‘Theme’ that you think is the most important, and “1” to the one that you think is not important at all-

	Content-category Themes	Scal for Rating
1	Materials, water & energy	
2	Emissions, effluents & wastes	
3	Products, services & bio-diversity	
4	Environmental policies and legal compliance	
5	Human resource management	
6	Employees’ health & safety	
7	Community & others	
8	Research and development	
9	Other	

SQ20. Could you please tell me that what are the limiting factors of Environmental Reporting (ER) in Bangladesh?

[Please tick on the answer that applies, you may select more than one]

- a. Lack of Established Guidelines/Standards for ER,
- b. Lack of proper enforcement of existing rules and regulations,
- c. Inadequate technical skills and professional competence of accounting and auditing professionals,
- d. Insufficient provision in the corporate related rules and regulations such as, in the Companies Act-1994, the Income Tax Ordinance -1984 and the SEC rules-1973 regarding environmental reporting of the organizations,
- e. Lack of proper awareness regarding the benefits of Environmental Reporting among the stakeholders,
- f. Lack of educational facilities regarding environmental reporting,
- g. Inadequate corporate strategies and commitment to sustainable development
- h. Poor environmental performance of the companies and fear of decreasing corporate image,

- i. Lack of stakeholders' needs for organization's environmental performance related information by corporate reporting.
- j. Conservative mindset of the stakeholders averse to new initiatives,
- k. Others...

SQ21. Which of the following initiatives can be useful for the development of environmental reporting practices in Bangladesh?

[Please tick on the answer that applies, you may select more than one.]

- a. Incorporate sustainable development related issues in the academic curriculum for developing adequate awareness concerning environmental reporting.
- b. Taking initiative for changing the mindset of corporate leaders, accounting professionals & regulatory authorities regarding environmental reporting,
- c. Amendment of the Companies Act-1994, the Income Tax Ordinance -1984 and the SEC rules-1973 by incorporating necessary provisions regarding environmental reporting of the organizations,
- d. Taking initiatives for Increasing skills & competence of accounting professionals regarding Environmental Reporting,
- e. Mandating listed companies to employ qualified accountants. ,
- f. Developing industrial unit wise regulatory frameworks on the basis of our corporate and national culture for environmental reporting,
- g. Adopting internationally recognized guidelines for environmental reporting,
- h. Introducing best environmental reporting awards,
- i. Strengthening advocacy role of BSEC, ICAB and other regulatory bodies for the development of environmental reporting practices among the listed companies.
- j. Formation of special Taskforce- Representation from Professional Bodies, Regulators and Chambers for implementation of Environmental Reporting in Bangladesh within a stipulated timeframe (5-10 years).
- k. Ensuring proper enforcement of Environmental Reporting related rules and regulations.
- l. Others...