An Investigation of Corporate Internet Reporting in an Emerging Economy: A Case Study of Bangladesh

By

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Dedication

To my Husband and my Daughter

Thank you for your love, sacrifice, support, and patience.

Integrity Declaration

I hereby declare that the material contained in this thesis has not been previously submitted for a degree in this or any other university. I further declare that this thesis is solely based on my own research.

Mrs. Shilpi Das

Acknowledgement

All praise be to God, the Almighty, for having made everything possible by giving me the strength patience and ability to complete this research.

Although it is my name on the cover, this thesis is the culmination of years of hardwork by many people, without whose assistance it would not have been possible. My sincerest, heartfelt gratitude goes to my supervisor **Dr Hamid Seddighi** for his unwavering support, both academically and personally, superb supervision, guidance, comments and encouragement during the course of my degree. He has stimulated me to work hard; he was friendly and considerate. He was always there when I needed motivation during the difficult stages of my work.

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Abstract

The main objective of the present study is to identify the extent of corporate internet reporting practices in an emerging economy through the extent of disclosing mandatory and voluntary information on the internet. It also addresses the determinants of such reporting practices. It uses sample from Bangladesh, an emerging capital market with few disclosure studies regarding corporate internet reporting.

To measure the extent of mandatory and voluntary disclosure two self constructed checklists were used. The results of the checklist are analysed in total and by different categories. By using a sample size of 234 companies, both bivariate and multivariate analysis is performed to identify the determinants of mandatory and voluntary disclosure on the internet.

The result indicates that about 90.70% companies have websites and all of them disclose a small amount of corporate information. While the extent of mandatory reporting is 66.24%, the extent of voluntary reporting is 35.46%. The telecommunication sector discloses the highest amount of mandatory information and the banking sector discloses the highest amount of voluntary information on the internet. The tannery sector discloses the lowest amount of mandatory and voluntary information.

The result also reveals that audit firm's international link, independent directors in the board and dual leadership structure have significant positive association and profitability measured by ROE has significant negative association with the level of disclosing of mandatory and voluntary information by the Bangladeshi companies. Although firm size, multinational parent, and industry type have significant positive association with the level of disclosing voluntary information, they are non-significant in mandatory disclosure. In addition, board size, ownership structure and company age has non- significant association with the level of both mandatory and voluntary disclosure.

By providing the current status of disclosing mandatory and voluntary information on the internet, this study contributes to reduce the existing gap in the literature relating to emerging economies and helps to identify the need for international standards for this type of reporting.

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Introduction

1.1 Introduction:

Corporate reporting on the Internet is a new approach in emerging economy for outside decision makers to access relevant accounting information. To meet the information needs of users, companies in the developed countries started to disclose financial and non-financial information on the internet. Being the fastest mode of communication, the internet has the widest reach in the present world of globalised economies. It is a technology that has the potential to exhibit distinctive and attractive information features, which makes it a more efficient and cost effective than the traditional methods of print media (Garg and Divya 2010). With the help of this new technology, companies' internal as well as external communication networks are changing. The current competitive environment is requiring more useful accounting information and so investors, social agents, clients, suppliers and other interest groups are demanding more and more relevant, comparative accounting information. Currently companies are also concerned to disclose information beyond that which is mandatory to attract investors as well as to improve their image and reputation. In this context, the dissemination of accounting information on the internet is adding a new dimension to corporate reporting (Bonson and Tomas 2002).

This chapter provides the foundation for the thesis. It discusses the background and motivation for the research in section 1.2, importance of corporate internet reporting in section 1.3, Justification for Selecting Bangladesh in section 1.4. Section1.5 provides the research questions and section 1.6 focuses on research aims and objectives. It also discusses contribution to knowledge in section 1.7. Finally the structure of the thesis is presented in section 1.8.

1.2 Background and Motivation for the Research:

Corporate reporting is an act of making financial statements transparent and public in line with statutory standards and guidelines which plays an important role in companies, because it reflects the efficiency and effectiveness of the management of the company and the work undertaken by the company (Sakarneh 2011). It should likewise be useful to the managers and directors

themselves in making decisions on behalf of the owners. Companies around the globe are making increased use of internet financial reporting (Khlifi 2007; Pervan 2006; Oyelere 2003; and CTM 2003) as they are now operating in a global market for capital, making the market more competitive. Operating in such an environment has pressurised companies into having the 'highest international standards of disclosure' (Myners 1998, p. 27). Growing internationalisation of shareholder bases has meant that companies are seeking more effective and efficient means of communicating with their stakeholders (Brennan and Hourigan1999) and Internet can play a significant role in this communication process.

This internet technology is a unique information disclosure tool that encourages flexible forms of presentation and allows immediate, broad and inexpensive communication to investors (Kelton and Yang 2008). The practice of disseminating business information in a digital format is spreading around the world (Bonson and Thomas 2006), and becoming a very important part of business information services (Liu 2000). As the Internet communication is multidirectional in nature and a very fast of transmission, companies can deliver unfiltered information to the public without a time lag (Sanchez et al. 2011). Thus, corporate internet reporting may be an effective tool for improving disclosure transparency (Kelton and Ya-wen 2008).

According to the CIPE (2003) report, recent scandals in a number of developed markets around the world have increased global concern about the issue of corporate governance in general and disclosure and transparency in particular. This raises questions about the possibility of future similar scandals in emerging capital markets. In response to these recent high profile accounting frauds, regulatory bodies (e.g., IASB, IFA) have attempted to improve disclosure transparency by encouraging companies to use the internet as a prime tool for information dissemination. Hodge et al. (2004) also support that technologies that allow alternative presentation formats for financial information may facilitate investor information gathering, improve disclosure transparency, and influence the investor decision process. Therefore, a firm may improve its disclosure transparency with both the content and presentation format of internet disclosures.

Prior research (e.g.,Kelton and Yang 2008, Gul and Leung 2004, Ajinkya et al. 2005) has focused on corporate transparency and capital market development. The effective functioning of capital markets, however, significantly depends on the effective flow of information between the company and its stakeholders. Information disclosure is seen as a means to improve marketability of shares, to enhance corporate image, and to reduce the cost of capital (Meek et al. 1995).

Given the increasing use of internet reporting, these constituents of financial reporting will need to develop new strategies to pro-actively respond to financial reports, including auditors' reports on the internet. If policy makers encourage firms to adopt better disclosure technologies it should make markets more transparent (Debreceny et al. 2002). There has also been a less developed stream of regulation-related research that examines the issue of the needed changes in accounting regulations with respect to the changes that internet reporting brings about on the identity of contemporary business organisations and on the needs of their stakeholders (Andrikopoulos and Nikolaos 2007).

Substantial accounting literature (e.g., Ball and Foster 1982; Belkaoui and Khal 1978; Brennan and Hourigan1999; Gul and Leung 2004; Kelton and Yang 2008) has emerged in the last thirty years that explains corporate financial reporting behaviour. As business reporting on the internet becomes more widespread, regulators and standard setters are beginning to question the acceptability and quality of internet-based business reporting. The development of standards for internet reporting is still at a discussion stage. Despite the absence of online reporting standards, the issue has been addressed in regulations concerning general reporting and disclosure issues (Marston and Annika 2004). The internet offers a potential delivery mechanism enabling the standards to operate on a global scale in a way not possible before. This is the reason why standard setting bodies across the world are concerned with the issue of the global reach of corporate reporting and of the jurisdictions of accounting regulations (Khan et al. 2008).

Before the internet became a mass phenomenon, starting around the mid-nineties, paper-based reports were the medium for corporate reporting. While

these reports are still used by stockholders, they may not consider them sufficiently detailed, accessible, timely or interactive (Allam et al. 2004). In contrast, the internet makes it easier for companies to distribute information to an extensive array of investors in a more opportune and convenient way. The internet also offers managers the prospect to contact all investors and to make available daily updates of relevant information.

There are many surveys and empirical studies related to corporate financial reporting on the internet in different developed countries (e.g., Brennan and Hourigan 1999- Ireland; Ettredge et al. 2002 – USA; Bonson and Thomas 2002 - European Union country; Marston 2003 – Japan; Marston and Annika 2004 – Germany). In contrast, very little is known about the disclosure of financial information on the internet by companies in developing countries. As a result there is an increasing need to describe the current situation of financial reporting on the internet in the developing world. Klapper and Love (2004) and Durnev and Kim (2005) found that emerging countries are characterised by poorer corporate governance practices and inferior judicial systems than those of the developed countries. Furthermore, the increase in the market value that a company can obtain when it improves its corporate governance practices is much greater in emerging markets: this means, that corporate governance practices matter more in countries where legal protection is weak. Garay et al. (2013) argued that in the 21st century the use of the internet in corporate governance communication is of utmost importance. As a result, companies may enhance their market valuation by improving the quality and the amount of the voluntary information that they disclose (Patel et al. 2002).

At present, financial disclosures on corporate web sites are mainly voluntary and unregulated in Bangladesh. Voluntary in the sense that until now there are no rules in the Company Act of 1994 and unregulated in the sense that there are no set of regulations that either require or forbid the disclosure of any specific data on web sites. However, there is a Directive Circular (which was issued by the order of the Securities and Exchange Commission SEC/CMRRCD/ 2009-193/09, on January 17, 2010) regarding the disclosure of quarterly financial statements in company websites. The Securities and Exchange Commission declared that it was directing all listed companies under

section 20A of the Securities and Exchange Ordinance, 1969 to also make available detailed quarterly financial statements on their websites and to include the following paragraph in bold letters at the end of the quarterly financial statements published in the newspapers:

"The details of the published quarterly financial statements can be available in the web-site of the company. The address of the web-site is.....".

While some companies have established websites on the internet, there is little awareness of how the internet is used to disseminate financial information to the users. Research is needed to understand this new phenomenon of reporting so that effective and efficient standards can be put in place. It will also aid accountants and auditors in their decisions on the presentation of financial information on the internet.

However, given the growing importance of the internet and its evident relevance to corporate reporting, it has become important to investigate the type of corporate reporting practices that have been adopted by Bangladeshi companies. In particular, lack of a comprehensive study of corporate reporting on the internet in Bangladesh, an important developing country, is the primary motivator for this study. So, the purpose of this study is to investigate the extent of overall mandatory and voluntary disclosure to identify the extent to which companies meets the information needs of the users.

1.3 Importance of Corporate Internet Reporting:

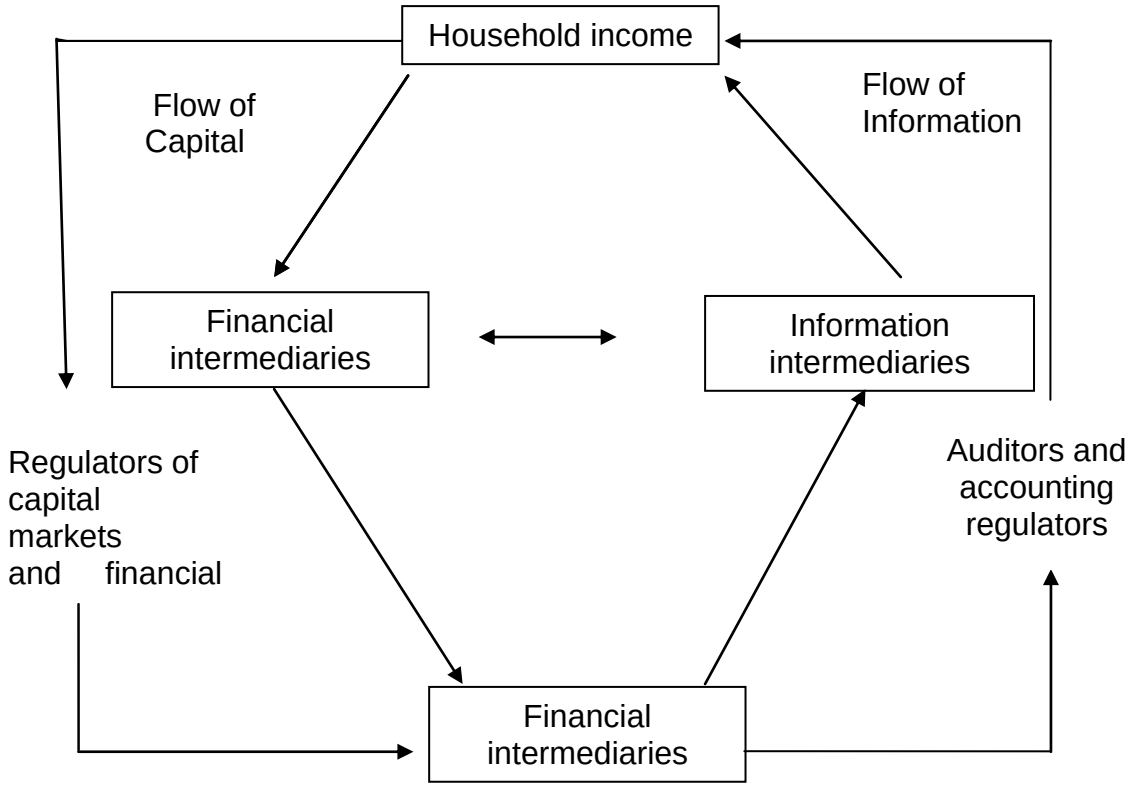
The business environment has witnessed changes over the years, mainly influenced by globalisation and technological innovation. The internet is erasing the barriers between countries. National economies are now interconnected and capital markets are evolving to meet capital formation needs worldwide. Technological advancements in telecommunications are helping in connecting dealers all over the world (Abd El Shahid 2003, p. 1). In recent years, there has been a substantial increase in trading activities at the Stock Exchanges worldwide. Companies worldwide are now vying to penetrate international capital markets. The disclosure of adequate and reliable information is necessary to penetrate these international markets. Those competing for funds

in the international capital arena have been found to comply with disclosing mandatory requirements and in addition disclose significantly more voluntary information that enables them to compete globally (Meek et al. 1995, p. 556). The government regulatory bodies and the accountancy profession in these nations suffer from structural weaknesses, which could encourage corporate fraud at the expense of those that have economic and proprietary interest in the business environment.

Healy and Palepu (2001) argued that demand for financial reporting and disclosure arises from information asymmetry and agency conflicts between managers and outside investors. Information asymmetry exists when one party to business transactions may have information advantages over others. The problems of this information asymmetry in emerging financial market are most likely to hamper the development of financial capital markets (Gul and Han 2002). The credibility of management disclosures is enhanced by regulators, standard setters, auditors and other capital market intermediaries. Corporate internet reporting is the notion of information asymmetry between management and ownership, espoused by Berle and Means (1932). According to this view, the level of information asymmetry is an important driver of investor uncertainty. Modern corporations have adopted various mechanisms, including voluntary disclosure, to mitigate the adverse effects of information asymmetry.

Figure1.1 provides a schematic of the role of disclosure, and information and financial intermediaries in the working of capital markets. The left side of Figure 1.1 presents the flow of capital from savers to firms. Capital can flow to business ideas in two ways. Firstly, it can flow directly from savers to businesses. Examples include private equity and angel financing. A second and more typical way for capital to flow from savers to businesses is through financial intermediaries, such as banks, venture capital funds, and insurance companies. The right side of the figure presents the flow of information from businesses to savers and intermediaries. Firms can communicate directly with investors through such media as financial reports and press releases. They also communicate with financial intermediaries or through information intermediaries, such as financial analysts (Healy and palepu 2001).

Fig. 1.1: Financial and information Flows in a Capital Market Economy



Source: Myers and Majluf, 1984 as cited in Healy and Palepu 2001.

A critical challenge for any economy is the optimal allocation of savings to investment opportunities. There are usually many new entrepreneurs and existing companies that would like to attract household savings, which are typically widely distributed, to fund their business ideas. While both savers and entrepreneurs would like to do business with each other, matching savings to business investment opportunities is complicated for at least two reasons. Firstly, entrepreneurs typically have better information than savers about the value of business investment opportunities and have incentives to overstate their value. Savers, therefore, face an ‘‘information problem’’ when they make investments in business ventures. Secondly, once savers have invested in their business ventures, entrepreneurs have an incentive to expropriate their savings, creating an ‘‘agency problem’’. Information and incentive problems impede the efficient allocation of resources in a capital market economy. Although disclosure can reduce the adverse effects of information asymmetry, disclosure activities have costs. Traditional paper-based disclosure has important limitations and associated costs. With the increase in investor

geographic dispersion, the paper form has become increasingly expensive and limited in its capacity to reach the users of information. In contrast, internet disclosure can be cost effective, fast, flexible in format, and accessible to all types of users within and beyond national boundaries (Debreceny et al. 2002).

According to Lymer and Anders (1997) internet offers a number of advantages to the reporting company: first, the internet offers a low cost access, to both users and producers, to corporate data by using an established network structure in which all can easily participate; second, it offers instant access to data at convenient times for users relative to paper versions; third, it provides a mass communication medium for corporate reports; fourth, it offers dynamic updating potential addressing timeliness implications, fifth, the internet has fewer constraints on presentation flexibility than traditional paper versions; sixth, it offers access to greater volumes of data than were previously possible; seventh, it provides flexibility in user models of the data provided; eighth, it facilitates hypermedia delivery of data using the inter-linking of information capabilities of the World Wide Web.

Besides these micro level advantages, business reporting on the internet can be very beneficial to businesses at the macro level as well (Lymer et al. 1999). It provides the search facilities for individual company sites. Furthermore, it is environmentally friendly and multimedia functions such as video, audio, graphics and 3D simulations give user and provider a variety of communication choices. Finally, feedback can be given through e-mail, interactive feedback forms, discussion areas and conferencing (Adams and Geoffery 2004). The most essential characteristics of the internet are that information can be accessed at almost any time and from anywhere.

The great increase in online reporting through web sites has not escaped the attention of researchers and many have carried out empirical studies of corporate reporting on the internet. Even though previously published studies have considered companies operating in both developed and developing countries, there is still a need for empirical studies on internet reporting practices due to the dynamic nature of internet reporting. Developments in internet-related technologies, regulatory recommendations and increasing

demand for information disclosure to stakeholders, change the amount and characteristics of online reporting. For example, Marston and Annika (2004) concluded in their comparative study for the years 2000 and 2003 that the amount of information disclosed on corporate web sites has significantly increased and that the mode and format of presentation has improved.

Currently, financial statements on the internet are unregulated. The global accessibility of financial reports on the internet and the absence of a global regulator have possible implications for groups with interests in financial reporting, such as financial information preparers, users, auditors and regulators (Oyelere et al. 2003). Some companies disclose only partial financial statements using a low level of technology, while others disclose full sets of financial reports using all the sophistications of the Web including multimedia and analytical tools. Both the fast adoption of the internet and the heterogeneity of the content published online have created a need for regulation through a normalisation process in the national and international contexts. The objective of this process is to harmonise contents and formats to make the information online comparable.

Corporate reports generally include information conforming with reporting and disclosure laws: this is considered as a mandatory requirement because laws require them to provide a minimum amount of information to facilitate evaluation of the securities. Every country, in general, has its own regulatory framework that governs disclosure in corporate reports within that country. Brownlee et al. (1990) argue that regulatory agencies should be more concerned with the full and fair disclosure of information than with the specific accounting methods used to measure or report economic transactions. Information that is disclosed beyond mandatory requirements are considered as voluntary information. The available literature has suggested many ways in which a firm or its management can benefit from improved disclosure (Lang and Lundholm 1993; Frankel et al. 1995; Healy and Palepu 1999). Drawing on this framework, firms are expected to disclose voluntary information, when the perceived benefits exceed the direct and indirect costs of doing so (Ferguson et al. 2002).

The information contents of the disclosure are both qualitative and quantitative in nature. The qualitative information is textual information from managers to owners (Director's Report), owners to the general public (Chairman's Report), statement of accounting policies, and auditor's report for assurance. The quantitative information reveals the financial position, performance, and changes in the cash flow, reflected in balance sheet, income statement, and cash flow statement respectively (Abubakar 2010). The demand for published corporate disclosure of companies has increased worldwide as users of the information become more attentive. But frequently disclosure does not serve the needs of the users because managers are likely to consider their own interests when exercising managerial judgment. In fact, this increases the disclosure gap or the difference between expected and actual disclosures. In other words, improved disclosure reduces the gap between management and the outside, enhances the value of stock in the capital market, increases liquidity, reduces cost and so on (Apostolos and Konstantinos 2009 and Karim 1996).

It is essential for an emerging economy to raise capital is particularly acute as it needs to attract foreign investment into the country and to promote the confidence and understanding of stakeholders. For this reason, fairness, efficiency and transparency of financial information are considered the major objectives of those capital markets. Attention has therefore been directed towards disclosure of financial information, as a very important factor in encouraging people to invest.

Since the internet is becoming established as part of the global information infrastructure, it is essential that organisations consider its impact on their business and develop strategies for using it. Internet-based technologies permit companies to utilize alternative information presentation formats, such as hypertext, multiple file formats (i.e., pdf, text-based), and multimedia: these may improve the way investors' access and understand the information. According to Healy and Palepu (2001, p. 432), ''The internet provides management with the opportunity to access all investors and to provide daily updates of important information." Thus, a firm can improve its disclosure transparency through use of internet financial reporting (Kelton and Yang 2008).

In the modern global market, information and investment will shed their national identities for a global perspective. It was noted that electronic information delivery mechanisms have developed to the point where disclosures can be made effectively and efficiently in forms that are considerably more valuable to information consumers than that provided in print-based communication. It is possible to meet users' needs in an imaginative fashion as these reports are in today's context; they are only imparting a foretaste of how business reporting will be changed by the Web. It is widely felt that, if a company is not on the internet by the end of the century it will be out of business (Widdifield and Grover 1995).

In order to succeed in this technologically-advanced business environment, it has become essential for corporations to display greater financial transparency to capital markets. Consequently, public companies are increasingly utilizing the internet to develop closer relations with their investors, analysts, and other stakeholders. In addition, easy access to the internet "levels the playing field" for all investors, thus fulfilling another requirement of good corporate governance: the equitable treatment of all shareholders (Mendes-da-Silva and Theodore 2004). More transparency helps investors understand management decisions, reduces information asymmetry, enhances confidence in the capital market and increases foreign direct investment (Bushman and Smith 2001). Turrent et al. (2012) found that the economic development of a country has significant positive association with the level of corporate transparency on the internet. Moreover, Hope et al. (2008) found that the economic development of a country has significant positive association with the level of information disclosed by the companies.

On the basis of above discussion it can be concluded that corporate transparency can be determined by the information it discloses in its financial report. Accurate, relevant and reliable disclosures are seen as means of enhancing corporate image, reducing cost of capital, and improving marketability of shares. High-quality accounting information facilitates the acquisition of short and long term funds and also enables management to properly account for the resources put in their care. Thus, it acts as a significant

spur to the growth and development of money and capital markets, which are fundamental to the smooth running of any economy.

La Porta et al. (1998) indicate that there are differences between emerging and developed countries due to environmental, cultural, socio economic and political factors that distinguish these countries. These factors indeed have been shown to influence significantly the accounting systems, standard settings, and hence the disclosure of the financial information. According to Ojah and Thabang (2012), three salient observations are evident: (i) the level of adopting internet financial reporting is much higher in developed economies than emerging economies, (ii) Developed economies commenced meaningful usage of internet financial reporting as early as1991/1992 while emerging economies commenced such usage in 1999/2000, (iii) On a country-by-country basis, the most early (and heavily) internet financial reporting users are Australia, Canada, Finland, France, Hong Kong, Japan, Netherlands, Sweden, Switzerland, UK and USA, almost all developed economies; while only Brazil, Ecuador, Korea, Malaysia, Turkey and South Africa were early adopters from the 32 emerging economy group. There is some evidence of variability in the adoption of internet financial reporting across countries.

Emerging nations have been under pressure to improve their quality of corporate financial reporting. According to Ali et al. (2004:183), “the government regulatory bodies and the accountancy profession of emerging nations suffer from structural weaknesses and often take a lenient attitude towards default of accounting regulations”. It is often alleged, however, that “listed companies do not fully comply with the disclosure requirements stipulated by the regulatory agencies” (Akhtaruddin 2005:401). Consequently private and institutional investors, local and foreign, are hesitant about investing in such emerging economies due to a lack of transparency.

Hunter and Murphy (2009) argued that if the emerging stock markets are truly efficient as defined by Fama (1970), then firms that voluntarily develop websites send a costly signal to investors that future reporting will be timelier than in the past and, if that signal is deemed credible, the market should respond. They indicated that both local and global stock markets will reward those emerging

market stock companies that engage in electronic reporting over their non-website competitors: these website firms are attempting to reduce information asymmetry between investors and themselves with the expectation of monetary rewards. Their study also demonstrates that in markets that suffer from low liquidity, firms that invest in internet technology are able to use the electronic medium to attract foreign investors, analysts, and creditors who might not have otherwise consider the emerging market securities within their portfolios. It is also of interest to policymakers because the internet and website firms show support at the micro-level for a national policy on privatization.

So, internet financial reporting has been of great interest to regulators and accounting bodies. Several accounting bodies have published studies regarding internet financial reporting (e.g. IASC 1999; FASB 2000; IFAC 2002; ICAEW 2004). However, this medium of reporting in general is currently unregulated and due to the worldwide nature of the internet, the application of traditional regulations and laws to internet financial reporting may not be appropriate. There are diverse motives for companies providing information on the internet. The Steering Committee of the Business Reporting Research Project (FASB, 2000), provides some of these potential motives for companies to provide information on the internet: these include eliminating the substantial cost of printing and posting of annual reports and the accessibility of information to a much wider audience than more conventional means of communication permit. Moreover, they can provide up-to-date information through the regular maintenance of web sites and can reduce the time taken to distribute information. They can also communicate with previously unidentified consumers of information. In addition they can supplement traditional disclosure practices andcan increasing the amount and type of data disclosed. Most of all through the internet, small companies can improve access to the potential investors.

Fisher et al. (2004) suggested that in the near future, it is likely that the internet will become the principal medium for the distribution of financial reports to users. The US Securities and Exchange Commission (SEC) supports the view that the use of technology such as the web enhances the efficiency of capital markets through the rapid dissemination of information to financial markets in a more cost efficient, widespread, and equitable manner than traditional paper-

based methods (SEC 1995; FASB 2000). Further, it stated that as more investors have access to and use the internet; the Commission will consider encouraging the use of the internet as a prime dissemination tool (SEC 2001).

The advent of this technology has led firms to reconsider their disclosure strategies since the web offers much more flexibility in the presentation and content of reporting. For example, many firms' web sites offer interactive facilities (e.g., questions and answers) or provide access to video presentations (e.g. management's presentations to analysts). Moreover, the Web allows a firm to disclose far more information than traditional means. Such a context implies that the stewardship relation between a firm's management and its stockholders becomes more direct, dynamic and, potentially interactive (Cormier et al. 2009).

Ali Khan and Ismail (2012) identified three important findings emerged from their study: firstly, the respondents ranked that internet financial reporting implementation benefits the companies because they are able to promote company wider to the public, provide wider coverage, attract foreign investors, discharge accountability, attract local investors, promote transparency, and attract potential customers compared to the traditional form of annual reports. They also identified that the implementation of internet reporting benefits the users because it increases timeliness and efficiency in obtaining financial information, provides information for company inexpensively, provides accessibility to the users, makes investment decision process easier and faster, provides another medium of disclosure, and helps users in the decision making process. Secondly, the respondents ranked three most important factors that influence companies to adopt internet financial reporting: enhance corporate image, competitors in the industry, and company teller with the technology development. Thirdly, respondents' considered that the most important advantage of internet financial reporting is global reach and mass communication.

1.4 Justification for Selecting Bangladesh:

This study has chosen Bangladeshi listed companies for a variety of reasons. Firstly, Bangladesh is a developing country at a transitional stage: major initiative regarding corporate internet reporting was taken in 2010. As a result,

research is needed to identify whether regulatory reform has any impact on the corporate internet reporting at the firm-specific level of developing countries like Bangladesh.

Secondly, there is little research relating to corporate internet reporting practices and, in particular, no previous study has been undertaken in Bangladesh classifying the disclosure of mandatory and voluntary information on the internet.

Thirdly, Bangladesh has drawn global attention in last few years as one of the fastest growing developing country with a rapidly developing capitalist economy (UNPF 2009), hottest emerging markets (Stevenson 2008), “Frontier Five” countries (Bloomberg News 2008 as cited Abdullah et al. 2011), “Next Eleven” nations (BOI Handbook 2007).

Fourthly, in February, 2010 the Bangladesh Securities and Exchange Commission introduced the directive circular regarding disclosure of corporate information on the internet.

Fifthly, the poor levels of corporate disclosure have been identified as one of the factors that have not only contributed to the Asian financial crisis but are also a stumbling block in the regional economic recovery (Berardino 2001 as cited in Gul and Leung 2004). So, it is essential to have a diagnostic view of the disclosure practices in the emerging capital markets of Bangladesh.

Finally, since the researcher is based in Bangladesh, it might be more relevant to conduct this research using a sample of firms from the same country as it the researcher is familiar with the country’s relevant legislation, culture and reporting environment.

1.5 Research Questions:

i) To what extent do Bangladeshi companies disclose mandatory reporting requirements on the internet?
ii) To what extent do the Bangladeshi companies disclose voluntary information on the internet?

iii) What are the factors that influence the disclosure of mandatory and voluntary corporate information on the internet?

1.6 Research Aims and Objectives:

I. The aim of this study is to identify the current status of corporate internet reporting practices in Bangladesh.
II. To assess the extent of mandatory disclosures on the internet in compliance with the regulatory requirements of corporate reporting in Bangladesh.
III. To determine the extent to which companies voluntarily disclose information to meet the information needs of users.
IV. To assess whether firm size, profitability, audit firm's international link, industry type, multinational parent, liquidity, market category, independent director in the board, board size, role duality, leverage, ownership structure, and company age influence corporate reporting practices on the internet by Bangladeshi companies.
V. To identify the sector wise disclosing level on the internet by the companies in Bangladesh.
VI. To make recommendations for policy makers regarding corporate internet reporting.

1.7 Contribution to Knowledge:

According to Bagshaw (2000) the global accessibility of corporate financial reports and the absence of a global regulator necessitate the cooperation of national and international organisations to ensure that corporate financial information is of the highest quality. The need for control over internet reporting largely depends on the degree to which efficient solutions are currently being found in the market for financial information of this nature. Companies elect to develop and maintain corporate websites and choose to provide financial information on such websites. This study thus acknowledges the importance of improving the flow of information between the stakeholders and the companies: internet reporting helps to reduce information asymmetry which also helps to reduce the risk of global financial crises.

This study is intended to delve deeper into the issue of corporate financial reporting practices on the internet in order to develop some recommendations and present validated cause and effect relations between reporting system parameters and the final outcome of an organisation. The findings of the proposed study may be of much use to policy makers at the international and national level, help to enhance the effective use of internet technology and strengthen the relationship between the stakeholder and the companies.

The research finding is essential as it assists in informing regulators about the characteristics of companies that are, and that are not, satisfying national and international investors' demand for online information. The users of financial reporting including investors need confidence of financial markets and information disclosure is a vital element to fulfil this confidence and in this case this empirical study would provide a communication bridge to the various stakeholders in society. It also assists current and potential stakeholders to know the drivers of corporate internet reporting in the particular area. Consequently, they may further investigate and verify such reporting practices. In practice, online reporting can be used as an effective tool for improving stakeholders' or users decision-making process.

Some of the previous studies (e.g., Bonson and Thomas 2002, 2006; Ezat and Ahmed 2009; Aly et al. 2010; Turel 2010) examined the extent of disclosing information on the website and consider the overall information; however, there are only a few studies (e.g., Ettredge et al. 2002; Xiao et al. 2004; Mendes-da-silva and Theodore 2004) that classify the information as mandatory and voluntary. As an increasing number of companies all over the world are using the internet for financial disclosure, it is high time to think about an International Internet Accounting Standards (IIASs) for harmonisation of financial reporting practices (Nurunnabi and Monirul 2012). This study will give an overview of the current status of corporate internet reporting by examining the extent of mandatory and voluntary disclosure on the internet in an emerging economy: this will help to identify the need for national and international standards for this type of reporting.

To do this mandatory disclosures are classified into four categories: general information, director's information, balance sheet information, and profit and loss information. Voluntary disclosures are also classified into nine categories: general information, strategic information, corporate governance information, financial information, corporate social responsibility information, corporate environmental information, corporate sustainability information, investor related information and information presentation format. It provides an understanding of the present state of delivery of business information in Bangladesh at one point in time: it should be remembered that the web page content is very dynamic. In addition to this, the study undertakes an explanatory effort in order to identify the factors that determine internet reporting practices for listed firms.

The literature review suggests that this is the first study to investigate the current status of the disclosure of mandatory and voluntary information on the internet in a developing country, Bangladesh. The previous studies on internet reporting in Bangladesh have examined either a particular aspect of corporate reporting (such as corporate environmental reporting, Dutta and Bose 2008; Banerjee and Probal 2009; Sobhani et al. 2009) or how the internet is used for corporate reporting (Bhuiyan et al. 2007; Dutta and Bose 2007; Khan et al. 2009). There is only one study, Nurunnabi and Monirul (2012), which examines some of the determinants of internet reporting but the study didn't examine how much mandatory and voluntary information are disclosed on the internet by the Bangladeshi companies.

This study will provide an updated examination of the corporate internet reporting by the Bangladeshi companies and help to provide a better understanding about the financial system of Bangladesh. Moreover, the process is not limited to the examination of the total disclosure, but includes, as well, the level of each category of disclosure (mandatory and voluntary) and its contribution to the total disclosure level. It also investigates the factors affecting the level of disclosure on the internet and identifies the significant and insignificant relationships between this level and the determinants of disclosure. In addition to this, this study tries to analyse the disclosure level of different industries helping to identify the most compliant and the least compliant group.

1.8 Structure of the Thesis:

This section presents an overview of the structure of thesis. Chapter two gives an overview of Bangladesh and its legal environment of corporate reporting. It then provides the importance of internet reporting in Bangladesh and an overview of the country's financial system. It also highlights the legal framework and regulatory environment of corporate reporting in Bangladesh.

Chapter three critically reviews the relevant prior literature regarding corporate reporting on the internet to find out the present status and research gap in the literature. It divides the literature into mandatory reporting and voluntary reporting on the internet. It then reviews the relevant literature on corporate reporting on the internet in Bangladesh to outline the gap in the literature to which the present study contributes.

Chapter four summarises the dominant theories that can be used to explain mandatory and voluntary disclosure practice. It also provides empirical evidences of the theories, concluding that there is no single theory that can fully explain the disclosure practices, as there is overlap among these theories. After that it outlines the theoretical framework that has been used in this study with its justification. Then it defines the independent variables and developed hypotheses that are tested in this study.

Chapter five presents the research method and the procedures employed to carry out the empirical section. It starts with the research design which includes research philosophy and research approach for the current study. It also provides the details of the research design that are used to measure the extent of disclosure and the measurement process of the independent variables. It then describes the sample size and the details of research instruments of the study.

Chapter six aims to answer the first two research questions: to what extent do Bangladeshi companies disclose mandatory and voluntary information on the internet. It starts with the descriptive analysis of the result of the checklist developed to measure the extent of disclosure. Each section describes the results in two parts- for mandatory and for voluntary reporting. Each mandatory

and voluntary section is also divided into two categories- for the combined sample and for the non-financial sample. It also provides the descriptive analysis for dependent variables. This chapter ends with the correlation analysis of both the combined and non-financial sample and their results.

Chapter seven aims to answer the third research question- what are the determinants of corporate internet reporting practices in Bangladesh. By using bivariate and multiple regression analysis, the current study examines the relationship between total mandatory and voluntary disclosure as dependent variables and a number of independent variables; firm size, firm's profitability measured by both ROE and ROA, audit firm's international link, industry type, multinational parent, liquidity, leverage, market category, independent director in the board, board size, role duality, ownership structure, company age measured by both listing year and establishment year. It also analyses the regression diagnostic before choosing the appropriate regression techniques. This chapter ends with the discussion of result and implication thereof.

Finally, a summary of the results and findings of the study are discussed in chapter eight. It also discusses the contribution to the knowledge. This chapter ends with outlining the study's implications and limitations and suggesting a number of recommendations for further research.

Chapter: 2

Corporate Financial Reporting in Bangladesh

2.1 Introduction:

The extent of disclosure is influenced by changes in the attitudes in society, economic factors and behavioral factors such as the particular corporate culture. Since the study considers Bangladesh –as a case study, so it is important to understand the economy of Bangladesh and why internet reporting is necessary in that context. Moreover it is also very important to know the rules and regulations relating to corporate reporting before measuring the extent of corporate information disclosure by the companies. The corporate reporting environment and the rules and regulations related to corporate reporting in Bangladesh are discussed in the following sections.

This chapter starts with the economy of Bangladesh and role of corporate internet reporting in section 2.2 and the importance of internet reporting in Bangladesh in section 2.3. An overview of the financial system is provided in section 2.4. Section 2.5 summarises the legal framework of corporate reporting. Finally section 2.6 presents the regulatory environment and followed by a conclusion in section 2.7.

2.2 Bangladesh Economy and Role of Internet Reporting:

An emerging market economy is defined as an economy with low to middle per capita income. Such countries constitute approximately 80% of the global population, and dominate about 20% of the world's economies. Emerging economies are characterised as transitional, which means that they are in the process of turning from a closed economy to an open market economy (Mohajan 2011). Most of the South Asian economies (e.g. India, Pakistan and Bangladesh) have made significant economic progress in the last two decades and are well on track to becoming major regional or even world economic powerhouses. Bangladesh, officially The People's Republic of Bangladesh, is a small South Asian country bordered by India on the east, west and north, by the Bay of Bengal on the south and a small border strip with Myanmar on the south-east. It is strategically located between the emerging markets of South Asia and the fastest growing markets of Southeast Asia and the ASEAN (Association of South East Asian Nation) countries. Bangladesh is one of the pioneers in the

region for economic liberalisation. It has adopted the best policies of South Asia to attract Foreign Direct Investment (FDI).

The economy of Bangladesh is a rapidly developing capitalist economy (UNPF 2009). Its per capita income in 2012 was estimated to be US$2,800 (adjusted by purchasing power parity). According to the International Monetary Fund, Bangladesh ranked as the 37th largest economy in the world in 2013 in PPP terms and 36th largest in nominal terms with a gross domestic product of US$419 billion in PPP terms and US$173.8 billion in nominal terms (Financial express 2014). Based on the promising growth performance and future potential, Investor Chronicle, a UK based research organization on market and investment, listed Bangladesh as one of the hottest emerging markets along with Kazakhstan, Ukraine, Pakistan, Egypt, UAE and Nigeria (Stevenson 2008). JP Morgan included Bangladesh in their “Frontier Five” group of countries along with Kenya, Nigeria, Vietnam and Kazakhstan (Bloomberg News 2008 as cited Abdullah et al. 2011). Goldman Sachs, a US-based investment banking and securities firm, put Bangladesh in its “Next Eleven”, a group of nations having promising economic growth potential after BRIC (Brazil, Russia, India and China) (BOI Handbook 2007). Next eleven consists of Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, The Philippines, South Korea, Turkey, and Vietnam (Abdullah et al. 2011).

The stock market capitalisation of the Dhaka Stock Exchange in Bangladesh crossed $10 billion in November 2007 and the $30 billion dollar mark in 2009, and USD 50 billion in August 2010. Bangladesh had one of the best performing stock markets in the world during the recent global recession, due to relatively low correlations with developed country stock markets. The bullish capital market turned bearish during 2010, with the exchange losing 1,800 points between December 2010 and January 2011. Millions of investors have been rendered bankrupt as a result of the market crash. The crash is believed to have been caused artificially, to benefit a handful of players at the expense of the big players (Indian Times 2011).

Bangladesh, being a developing country with high potential, hardly spends a significant proportion of GDP on research and development. The country is

facing the problem of shortage of trained manpower in general and accounting personnel in particular. Growth in GDP to generate employment opportunity and investable surplus would depend much on managerial efficiency and the effectiveness of the corporate sector in Bangladesh. Bangladesh is thought to be one of the most corrupt countries in the world; the consequence of that corruption placed the country in the shameful position of being ranked the most corrupt country in the world for about 6 years. Against this backdrop, one solution could be through ensuring the digitisation process in every sector. Instead of manual dissemination, information and all types of reporting should be performed through the digital process so that people can gain information free of cost and without any kind of political influence or manipulation. This will drastically reduce the opportunity for corruption and ensure transparency in every sector. Both planning and monitoring need proper accounting information systems that are in line with international standards.

An awareness of corporate financial reporting practices to meet the information needs of investors and a proper organisational framework to ensure transparency and accountability are yet to develop in Bangladesh. An efficient disclosure regime is a fundamental instrument for protecting investors and enhancing confidence in the capital markets (OECD 2004). The demands for openness and transparency have significantly increased during the last years. According to Gowthorpe and Flynn (1997) and Wildstrom (1997), the investor relation process could be improved and made more transparent and inclusive by means of internet reporting. Improvements in disclosure result in improvements in transparency, which is one of the most important aims of corporate governance reform worldwide (OECD 1999). It is worth noting the OECD (2004) Principles of Corporate Governance recommend that the use of the internet and other information technologies improves information dissemination, resulting in equal, timely and cost-efficient access to relevant information by investors.

Transparent disclosures provide more information regarding a firm’s activities. A firm’s financial disclosure transparency is associated with its method of information dissemination (Bushman et al. 2004). Innovations in information technology have enabled companies to improve disclosure transparency

through alternative methods of information dissemination, such as internet financial reporting. According to Healy and Palepu (2001, p. 432), ‘‘The internet provides management with the opportunity to access all investors and to provide daily updates of important information.” Thus, a firm can improve its disclosure transparency through use of internet financial reporting. The lifeblood of markets is information and barriers to the flow of relevant information represent imperfections in the market. Increased and improved disclosure is likely to reduce agency costs as better information flows from the company to the shareholders, which in turn reduces information asymmetry (Solomon 2007). To improve financial reporting, it is important to study not only the extent and the trend of disclosure practices, but also the factors explaining or influencing corporate financial reporting (Rizk 2006).

2.3 Importance of Internet Reporting in Bangladesh:

Bangladesh does not have depth in its equity market. The overall performance measures of its stock market show low trading volume, intermittent bumps, not many new offerings and unsteady valuations more on the declining side than otherwise (Hossain 2005). One vital aspect is that the capital market in Bangladesh does not react significantly to corporate performance in terms of higher stock valuation for accurate disclosure and poor stock price for failing to provide of accurate and full disclosure. There is little incentive in becoming a public company and listing on the stock exchange in Bangladesh. Companies with good reputations can get bank financing relatively easily than through share issue. There are very few bonds, fixed income or debt instruments in the capital market. This means there are no pressure groups for enforcing corporate governance principles (BEI 2003).

The majority of the companies in Bangladesh prepare financial reports just to meet minimum legal requirements and hardly meet the information needs of different stakeholders. Moreover, motivation to disclose information and improve governance practices by companies is felt negatively. There is neither any value judgment nor any consequences for corporate governance practices. In Bangladesh, the corporate sector is at a cross roads as far as the legal structure and internal management, control and administration of corporations is concerned. The current system in Bangladesh does not provide sufficient legal,

institutional and economic motivation for stakeholders to encourage and enforce corporate governance practices; hence the failure in most of the constituents of corporate governance witness in Bangladesh (Islam et al. 2010).

Bangladesh is a developing country where the use of the internet has evolved for the last decade at large. Initially the internet was used mainly for the purpose of sending and receiving emails but the use has diversified into areas such as dissemination of information and e-commerce. The practice of using the internet for disseminating corporate information is relatively new in Bangladesh. Since Bangladesh needs external capital to sustain the high growth rate and the biggest agency problem centers on asymmetric information and expropriation by majority shareholders, it is very important for firms to be transparent and make full disclosure of information.

The review of published financial statements, conducted by World Bank consultants revealed compliance gaps. There is a consensus that a lack of transparency in audited financial statements discourages foreign investors. From discussions, leaders of the foreign banking community sent a strong message—"If you want investment, you need to produce decent sets of financial statements" (World Bank 2003). Representatives of the investment community generally agree that audited financial statements are rarely reliable and free from material misstatement. The investment analysts and various accounting and finance experts commented that actual accounting practices in Bangladesh need to improve in all areas covered by IAS. Most interviewees shared the opinion that improving the quality of financial reporting requires a robust regulatory regime and effective enforcement mechanisms for ensuring compliance with accounting and auditing standards; an auditors' professional code of ethics is also needed.

In terms of compliance with standards and appropriate technology implementation in corporate reporting, Bangladesh is yet to become fully developed and to offer a well-defined structure. Initially corporate information on the internet was mainly confined to non financial information such as product and marketing related issues. However, in recent years, financial information has become an integral part of the contents of the companies' websites (Khan

et al. 2009). Now the question arises whether the existing practice is efficient enough to be characterised as a new kind, to support the needs of different groups of users. Generally, financial reporting is performed by the companies through annual reports publication. The elements of printed annual reports are nationally harmonised by Bangladesh Securities and Exchange Commission and The Institute of Chartered Accountants of Bangladesh (ICAB). However, the content of digital annual reports is not yet nationally standardised by the concerned bodies. Therefore, the contents of digital annual reports are not similar for all companies (Khan et al. 2009).

The technology applied in Bangladesh by the companies for corporate internet reporting is neither adequate nor pragmatic. In developed countries, such as The United States, professional bodies release pronouncements regarding corporate internet reporting that contribute to the development of internet based financial reporting. Such practice is not a part of the activities of the Bangladeshi professional bodies namely The Institute of Chartered Accountants of Bangladesh (ICAB) and The Institute of Cost and Management Accountants of Bangladesh (ICMAB). Various auditing standards bodies of countries around the world have recognised the need for precise guidance to auditors on the implications of corporate internet reporting. They have made pronouncements that fell considerably short of a proper response to the challenges that arise from current internet reporting technologies (Debreceny et al. 1999). On the contrary, current corporate internet reporting practices have failed to draw the attention of the ICAB which is generally recognised as the local auditing standards body of the country.

In addition to conventional responsibilities, ICAB ought to move forward to clearly determine the role of auditors in respect of reporting and attesting financial information on corporate websites. Since existing financial reporting rules apply equally to financial reporting on the web: the wide range of variation observed in web based financial reporting in Bangladesh would probably draw one to conclude that some companies are violating the existing financial reporting regulations (Khan et al. 2009). The Transparency International Bureau stated that hiding information is a common phenomenon in Bangladesh and that companies are no exception. To be transparent and more accountable to

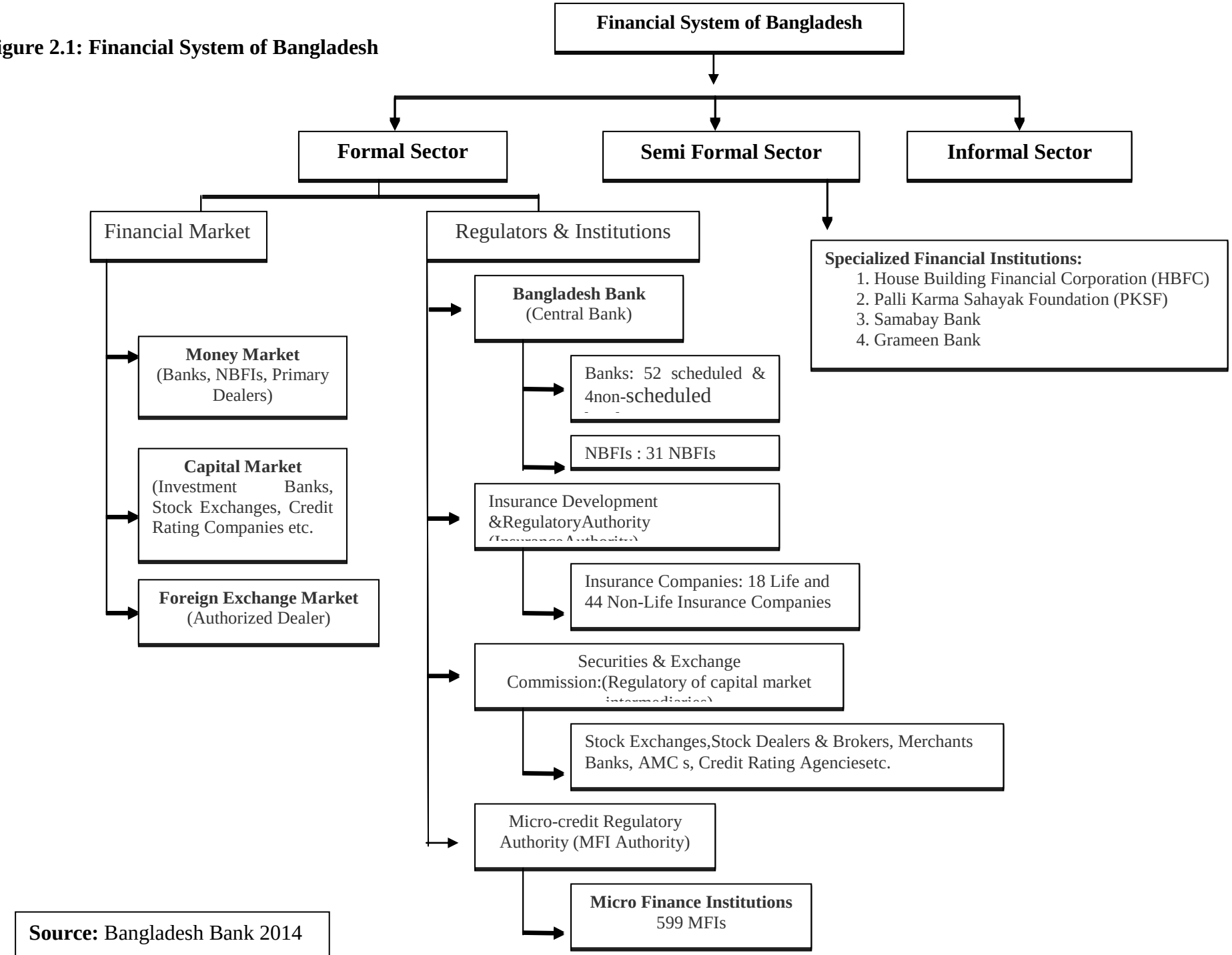
stakeholders, companies need to provide detailed information. It is quite shocking that the stock market crashes in 1996 and 2011 also revealed the same picture of the traditional culture not providing enough information to investors and insider information being the key to gain abnormal returns (Nurunnabi et al. 2012). Bangladesh is no exception to the fact that computer technology has changed the flow of information between firms that provide and consumers who demand information (Bhuiyan et al. 2007).

Therefore, internet reporting is an emerging issue in Bangladesh and there is ample room for improvements in order to utilise the full potential of the internet. As more and more people in Bangladesh are connecting themselves to the information superhighway, companies are expected to change their internet reporting practices, in terms of content and disclosure. To the extent that more extensive use of the internet for information disclosure can improve the efficiency of the corporate disclosure regime, it is expected that more companies will improve their internet reporting practices. Even smaller companies that wish to expand further and attract investors (domestic and foreign) are expected to use the internet as an alternative channel to distribute information faster and cheaper.

2.4 Financial System of Bangladesh:

In Bangladesh, the financial system is comprised of: a) the formal sector, b) the semi-formal sector and c) the informal sector. These sectors have been classified in accordance with their degree of regulation. The formal sector includes all regulated institutions like banks, non-bank financial institutions(FIs), insurance companies, capital market intermediaries including brokerage houses, merchant banks; micro finance institutions (MFIs). The semi formal sector includes those institutions which are regulated otherwise but do not fall under the jurisdiction of the Central Bank, Insurance Authority, Securities and Exchange Commission or any other enacted financial regulator. This sector is mainly represented by specialized financial institutions like House Building Finance Corporation (HBFC), Palli Karma Sahayak Foundation (PKSF), Samabay Bank, Grameen Bank etc., Non Governmental Organizations (NGOs) and discrete government programmes. The informal sector includes private

Figure 2.1: Financial System of Bangladesh



Source: Bangladesh Bank 2014

intermediaries that are completely unregulated (Bangladesh Bank, 2014). The structure of the Bangladesh financial system is given in Figure 2.1.

2.5 Legal Framework of Corporate Reporting in Bangladesh:

Every country, in general, has its own regulatory framework governing disclosure in corporate reports within that country. Bangladesh is a former crown colony and almost every law has been inherited from the UK. Like other countries of this region, Bangladesh adopted the Companies Act 1913 of the then British India. This Act was in force in Bangladesh before the promulgation of the Companies Act of 1994, which is largely influenced by the British Companies Act. The legal framework surrounding corporate entities in Bangladesh includes The Companies Act 1994, The Bank Companies Act 1991 (for banking institutions), The Listing Regulations of The Dhaka Stock Exchange, and The Securities and Exchange Rules 1987 (for all public limited companies), Bangladesh Bank Order 1972.

Three regulatory bodies provide the legal framework for corporate reporting in Bangladesh: ICAB, Bangladesh Securities and Exchange Commission (BSEC) and the Register of Joint stock companies. There is, however, no one set of generally accepted standards within these three sources. Again, separate industries, like railways, electricity, insurance, and banks have their own distinct regulations that govern disclosures in their annual reports for example, the Bank Companies Act 1991 is applicable for banking companies and The Insurance Act 1938 is applicable for insurance companies.. As there are no separate rules and regulation regarding the content of internet reporting in Bangladesh, the rules applicable for printed annual report are also applicable for corporate internet reporting. To develop the mandatory disclosure checklist the current study considered the common mandatory items, which are applicable for all listed companies in Bangladesh rather than particular sector based rules and regulations.

There are two professional accounting institutions - ICAB and the ICMAB that guide the accounting profession in Bangladesh. The financial audit and cost audit are performed by members of ICAB and ICMAB respectively and both are under the control of Bangladesh Ministry of Commerce. These two institutes are

jointly managed by council members, who are elected internally, and by government representatives. This council is responsible for the development of the accounting profession in Bangladesh.

In addition, the ICAB has been given the sole authority to develop and issue accounting and reporting standards and to monitor their application throughout the country. The ICAB, as a member of the International Accounting Standards Board (IASB), is entrusted with the task of adoption and enforcement of IAS's and IFRS's standards in Bangladesh. The Technical and Research Committee of the ICAB selects, reviews, and modifies the standards, where necessary, to confirm to local requirements. In 2014, ICAB adopted 28 IAS and 12 IFRS and rename it as BAS (Bangladesh Accounting Standards) and BFRS (Bangladesh Financial Reporting Standards) respectively (ICAB 2014). Regarding this, the Securities and Exchange Commission made a notification on 29th December, 1997 mentioning that all listed companies are to abide by and follow the Accounting Standards adopted by ICAB and ICMAB as BAS from the year 2000 (BSEC 1997). So these standards are mandatory for all listed companies in Bangladesh. The ICAB is, however, recommendatory in nature and has no legislative power to enforce compliance with the disclosure requirements of the accounting standards they issue (Hossain 2000).

Besides this, The Company Act of 1994 and Securities and Exchange Rules of 1987 are two important legislations for corporate disclosure. The Companies Act 1994 provides the basic requirements for disclosure and reporting, applicable to all companies incorporated in Bangladesh (GoB 1993). The Act requires companies to prepare financial statements in order to reflect a true and fair view of the state of affairs of the company. The Securities and Exchange rules of 1987 requires all listed companies to comply with accounting standards promulgated by the ICAB, in addition to its own disclosure provision (GoB 1993). Disclosure provisions of the Securities and Exchange Rules are, in fact, restricted only to companies listed on the stock exchanges.

The Companies Act of 1913 required limited public companies to submit an annual balance sheet containing a summary of their capital, liabilities, and assets: no specific formats were prescribed. Profit and loss accounts were

prepared without mentioning the nature of activities in detail. These two statements needed to be audited and presented at the annual general meeting for approval prior to publication. The fundamental weakness of the regulation is that it does not provide any guidelines regarding the contents or how the value of the respective items has been arrived at.

The Companies Act 1994 made major alternations to financial reporting practices (Ahmed and Kabir 1995) and required both statements to be audited and reported before the annual general meeting. Under this law, fixed assets are to be shown at cost or valuation and the provisions for depreciation are the annual charges, which need to be disclosed separately. The required disclosures are classified and specified in far more detail and include reserves, the changes that occurred during the year, director's remuneration, commission, tax provision, and the flow of foreign currency. Section 185 of the Companies Act provides the mandatory items to be disclosed on the balance sheet and income statement and Section 186 provides a list of information items that must be disclosed in the director's report (GoB 1994).

The Securities and Exchange Commission was established in 1993 under the provisions of the Securities and Exchange Ordinance 1969. In 2012, the commission was renamed as Bangladesh Securities and Exchange Commission (BSEC) (GoB 2012). The BSEC governs the disclosure provision in company reports as a part of listing requirements. At the time of independence in 1971, Bangladesh inherited only one stock exchange, the Dhaka Stock Exchange (DSE). It was formed in 1954 and registered as a limited liability company. Another stock exchange, The Chittagong Stock Exchange (CSE), was set up in 1999 and functions in Chittagong. Both stock exchanges are regulated under the Securities and Exchange Rules 1987 and the Companies Act 1994. The SEC does not have any disclosure requirements of its own. It adopted the International Accounting Standards (IASs) and International Standards on Auditing (ISAs) in the preparation of financial statements and auditing procedures of listed companies.

The BSEC in Bangladesh plays a central role in monitoring and enforcing mandatory disclosure compliance of listed companies. It has the authority to

impose penalties on companies for publishing misleading information or for not otherwise complying with general accounting and reporting requirements set out by the law. Listed companies are required to prepare financial statements in accordance with the approved IASs along with the disclosure provisions of the Companies Act. The penal provisions for non-compliance include: barring the auditor who conducted the non complying audit from acting as an auditor for a listed company for a period of up to five years; fining the auditor and the company officer up to one thousand taka for non-compliance with stipulated provisions under the Companies Act. But the BSEC employs a lenient approach to enforce compliance, which may lead to the withholding of mandatory disclosure information. To enforce existing rules, the BSEC has the power to suspend companies or remove their listing privileges if they do not comply with the listing requirements. The power to reward the reporting entity is also embedded in the enforcement process.

2.6 Regulatory Environment in Bangladesh:

Changes in the regulatory environment, specifically in a developing country, often fail to produce the desired policy outcomes. Countries across the world are now more inclined to adopt the more complete version of the international accounting standards than ever before. The regulatory environment in Bangladesh came under reform just after the first stock market debacle in 1996. Companies in Bangladesh have to disclose the information that is required by law. But the laws and processes are inadequate in terms of provisions and not strong in terms of enforcement. Again, over-regulation and inconsistence make the companies' reluctant to follow the minimum disclosures in the financial statements. The quality and quantity of disclosure made in the annual reports thus varies substantially (Akhtaruddin and Rouf 2011). No effective mechanism exists to enforce the requirements for accounting and financial reporting provided in the Companies Act 1994. The office of the Registrar of Joint Stock Companies (RJSC) has legal authority to enforce the provisions of Companies Act 1994. The RJSC has no technical capacity to identify accounting and auditing violations; in most cases it does not even enforce timely filing of annual audited financial statements. The RJSC records lack up-to-date information to verify the number of companies that have not submitted the required annual audited financial statements and returns (World Bank 2003).

The BSEC is the only regulatory body working to improve the quality of financial reporting. The BSEC lacks sufficiently trained staff to conduct detailed analysis to monitor compliance with accounting and financial reporting requirements. The banking regulator has no mechanism to monitor and enforce accounting and financial reporting requirements. The Bangladesh Bank, as the regulator of banking and non-banking financial institutions, conducts routine supervision exercises to monitor and enforce prudential regulations. Bangladesh Bank inspectors examine whether financial statements have been prepared in accordance with established regulations. In this inspection process, no attempt is made to assess the degree of compliance with requirements on preparing general-purpose financial statements. Also, no attempt is made to determine the reliability of the auditor's opinion on a set of financial statements.

In the case of insurance companies, financial statements are not subjected to monitoring and enforcement actions. The Insurance Act 1938 vested adequate power in the Chief Controller of Insurance to regulate the financial reporting of insurance companies. In practice, these powers are rarely exercised to ensure compliance with financial reporting requirements. Every year the chief controller appoints external auditors to conduct special audits in order to prepare reports on compliance with various prudential requirements. To conduct these special audits, the chief controller normally appoints small audit firms and sole practitioners, who in many cases lack knowledge of the insurance industry.

There is a widespread view that the low-level skills among accounting professionals and the lack of enforcement mechanisms contribute to non-compliance with established accounting requirements and auditing standards. No effective and efficient institutional arrangement exists to ensure compliance with auditing standards and codes of ethics. The ICAB has not established an effective and efficient mechanism to ensure member compliance with established auditing standards and the professional code of ethics. The ICAB has not made an effective effort to review the practices of the auditors and audit firms to evaluate the degree of compliance with the auditing requirements.

The stock exchanges are owned and dominated by brokers, so their businesses take precedence over the governance of their respective exchanges. The

management of the two exchanges is weak at the strategic, senior, and mid-management levels; hence their members' activities are not supervised effectively. Due to government policy the SEC has limited capacity to regulate and monitor activities within its remit and has limited resources to devote to development functions. There are too few qualified accountants and financial analysts due to high staff turnover, and the SEC does not have enough legal experts to effectively exercise its oversight authority (Rasul 2013).

2.7 Conclusion:

An outline of legal framework of corporate reporting in Bangladesh is necessary to answer the research question one and two: to what extent do Bangladeshi companies disclose mandatory reporting requirements on the internet? To what extent do Bangladeshi companies disclose voluntary information on the internet? To achieve the research objective one, a mandatory disclosure checklist has been developed in chapter 5 on the basis of these legal requirements of Bangladesh. This check list will be used to determine the extent of mandatory disclosure in first part of chapter 6: descriptive statistics. Moreover, legal framework is also necessary to determine the extent of voluntary information beyond mandatory requirements which is discussed in the later part of chapter 6. In chapter 7, hypotheses were also tested by using this checklist.

The general corporate environment of Bangladesh is characterised by a poor regulatory framework, dependence on bank financing and a lack of effective monitoring (Rahim and Alam 2013).The accounting and auditing practices in Bangladesh suffer from institutional weaknesses in regulation, compliance, and enforcement of standards and rules. The preparation of financial statements and conduct of audits, in many cases, are not consistent with internationally acceptable standards and practices. Weak national financial architecture, inadequate transparency and accountability, and a dearth of appropriate policy interventions are among the impediments cited for the country's slow economic development (World Bank 2003). Although the BSEC, the exchanges, and the ICAB have taken legal actions against wrongdoers from time to time, these actions are viewed by some as insufficient since many who break the law are

believed to go undetected (World Bank 2002, 2003; Uddin and Choudhury 2008; World Bank 2009; Rashid 2011).

The quality of audited financial statements is a concern to investors and other users of financial statements. There is a widespread view that the low-level skills among accounting professionals and the lack of enforcement mechanisms contribute to non-compliance with established accounting requirements and auditing standards (World Bank 2009).Steps should be taken to ensure that the legal and regulatory requirements on accounting, auditing, and financial reporting fully protect the public interest. This might necessitate the enactment of a new Financial Reporting Act and the repeal of the provisions on accounting, auditing, and financial reporting in Companies Act (Amendment) 2013, Bank Companies Act 2013, Insurance Act 2010, and other related regulations.

To protect the public interest and ensure transparency in corporate sector, the Government should take the necessary steps to strengthen the capacity of the Securities and Exchange Commission, Bangladesh Bank, and Controller of Insurance. It must enable these regulatory bodies effectively deal with the accounting and financial reporting practices of the regulated entities. Moreover the BSEC should raise awareness among the top management of listed companies of the importance of compliance with accounting and auditing requirements.

Chapter: 3

Literature review

3.1 Introduction:

Corporate reporting is a vital component of the accounting process that seeks to provide decision useful information and extend accountability to numerous stakeholders. It is argued that disclosure and transparency, accountability, and corporate governance play an important role in gaining the market confidence (Ghazali and Weetman 2006). Accounting researchers have investigated relationships between corporate characteristics and disclosures in corporate annual reports since 1960s. Since early work on this subject, pioneered by Cerf (as cited in Fremgen 1963, p. 467) many studies have examined the quality of information disclosures in various contexts. Examples of such studies are: Owusu- Ansah (1998); Ho and Wong (2001), Joshi and Ramadhan (2002); Chau and Gray (2002); Naser et al. (2002); Naser and Nuseibeh (2003); Akhtaruddin (2005) and Ofoegbu and Okoye (2006). Each of these studies has been distinguished by: differences in research setting, differences in definition of the explanatory variables, differences in disclosure index construction and differences in statistical analysis.

This chapter reviews the relevant prior literature regarding financial reporting on the internet and its determinants to gain an overview of previous studies and, in particular, the nature of the gap in the literature. Moreover, this review is the basis from which to choose the relevant theoretical framework and to develop the hypotheses. As the study is focusing on the extent of mandatory and voluntary reporting on the internet, section 3.2 reviews the relevant literature on corporate financial reporting on the internet; section 3.3 examines the idea of mandatory disclosure and then reviews the literature of corporate mandatory reporting on the internet. Section 3.4 provides the definition of voluntary disclosure and then reviews the literature of corporate voluntary disclosure on the internet. Relevant literature on corporate reporting on the internet in Bangladesh is reviewed in section 3.5, followed by the gap in the literature in section 3.6 and the conclusion in section 3.7.

3.2 Corporate Financial Reporting on the Internet:

The internet offers companies "new opportunities to supplement, replace and enhance traditional ways of investor and stakeholder communication" (Marston and Annika 2004, p. 286), and therefore, it has become, in a very short time, an "indispensable communication tool for organisations" (Capriotti and Moreno 2007, p. 224). Various authors have stated that in recent years the internet has increasingly been used as a means of communication for business reporting purposes (Gallhofer and Haslam 2006; Lymer 1999; Marston 2003). This could be attributable both to the opportunities the internet provides and investors' demand for being informed online.

According to Beattie (2005), a company that distributes corporate financial news and performance information using internet technologies such as the web is said to practice internet corporate reporting. Oyelere et al. (2003) classified a company as practicing corporate internet reporting when it provides a comprehensive set of financial statements, including footnotes; partial sets of financial statements; and/or financial highlights that may include summary financial statements or extracts from such statements on their website. The nature of financial reporting started to change to meet the needs of the users including shareholders, and investors. These changes were influenced by several factors. Among these, the emergence of new technology, particularly the internet, has shifted the way information is being presented, communicated, and disseminated. It is undeniable that internet technology plays a significant role in disseminating corporate information to dispersed shareholders all over the world.

Researchers argue that firms have to reconsider their disclosure strategy in order to benefit from technology innovation. Globally accessible web sites enable corporations to communicate with, and disseminate information to, anonymous recipients who are actively seeking information. Given this, corporations are able to shape and define their image and are able to create information rich web sites with the ability to inform and educate individuals scattered around the world (Robbins and Antonis 2003). Thus reporting of corporate performance has undergone a critical change in the period since the

beginning of widespread commercial adoption of the internet (Lymer and Debreceny 2003).

As academic researchers have recognised the internet as an emerging communication medium, the number of studies focusing on the use of the internet for corporate reporting in both developed and developing countries has increased consistently since the late1990s.The literature, with regard to internet financial reporting, has covered many developed countries e.g. Petravick and Gillet 1996 (USA); Lymer and Anders 1997 (Finland and the UK); Lymer 1997 (UK); Koreto 1997 (Ireland); Deller et al. 1999 (US, UK and Germany); Hussey and Sowinska 1999 (UK); Gowthorpe and Amat 1999 (Spain); Hedlin 1999 (Sweden); and Abdelsalam et al. 2007 (UK) while some of these studies covered emerging countries (e.g. Xiao et al. 2004; Momany and Al-Shorman 2006; Al-Shammari 2007; Mohamed et al. 2009; Mohamed and Oyelere 2009; and Desoky 2009). Emerging markets are an important yet highly understudied subject, as noted in recent surveys of the state of research on corporate governance in emerging markets (Claessens and Yurtoglu 2013) and there is a dearth of research on the internet financial reporting practices of firms located in the context of emerging economies like Bangladesh.

These literatures can be divided into three categories: descriptive, comparative and explanatory. Descriptive research focuses on the number of firms using the web as a medium to disseminate information and to what extent these firms include financial information on their web sites (Gowthorpe and Amat 1999; Deller et al. 1999; Ettredge et al. 2001; Hurtt et al. 2001; Khadaroo 2005; Abdul Hamid 2005; Oyelere and Mohamed, 2007). Another research stream compares web-based disclosure across countries (Deller et al. 1999; Allam and Andrew 2003). The third category of research is explicative and examines the determinants of such practices (Ashbaugh et al.1999; Pirchegger and Wagenhofer 1999; Marston 2003; Oyelere et al. 2003; Marston and Polei 2004; Xiao et al. 2004; Bonson and Thomas 2006; Sriram and Laksmana 2006; Abdelsalam et al. 2007; Gutierrez-Nieto et al. 2008).

Brennan and Hourigan (1999) examined the use of the internet for financial reporting purposes by 109 Irish companies in 1998. They examined the level of

use of the internet by Irish companies for corporate reporting. By using the content analysis approach this study tried to identify the impact of some company characteristics- size, leverage, demand for corporate information, and industry that may be common to Irish companies reporting on the internet. Their results showed that 37% listed and 100% semi-state companies had a web site. Larger companies and companies in the services and financial sector were significantly more likely to have a web site. But they did not find any association between presence of an internet site and leverage and number of shareholders. The major limitation of the study is that it did not classify the information as mandatory or voluntary and it considers only four company characteristics as explanatory variables.

Again Brennan and Sorka (2000) investigated Irish company investor relations material on the internet from two perspectives. Firstly, it looked at the extent of information disclosed by Irish publicly listed companies (plc); secondly, it looked at Irish company investor relations materials, and the coverage of Irish plcs, on third-party web sites. Their results showed that 67% Irish listed companies had a web site. Of these, 84% contained investor relations material. The most common type of material was background information on the company. The least common was background information on the industry in which the company operates. This study also performed content analysis of investor relations material on ten third party sites and found that 90%of sites provided some form of investor relations material free of charge to users. Share prices were provided on 90% of third-party sites whereas Historic share prices on 60% sites. No site covered all Irish plcs.

Ettredge et al. (2001) examined corporate web site financial disclosure practices. They evaluated and compared the web site disclosure levels of 17 industries, and concluded that corporate web sites present, on average, about 38% of the accounting data items on their checklist and 30% of the other financial data items. Larger, more established firms tend to provide a higher level of disclosure than do the smaller, emerging technology firms.

In a comprehensive work, Debreceny et al. (2002) suggest that internet disclosure is a function of both firm-specific characteristics, as well as

environmental characteristics. In respect of firm characteristics they found that firm size, level of technology employed and growth prospects and intangibles are associated with internet financial reporting. They extended their literature by examining the association of internet financial reporting with general cross-listings and listing in the broad and deep market of the US and found that US listing is an important determinant of internet financial reporting. But in case of cross listing, they found negative association which is inconsistent with prior voluntary disclosure studies and suggests further research.

Another comparative studywas performed by Allam and Andrew (2003). They also focused on the very largest companies in USA, Canada (North America), UK (Europe), Australia (Australia) and Hong Kong (Asia). Their sample includes 50 companies from each of the five countries for a total of 250 companies. The results of the survey indicated continued progress in the area of corporate reporting over the internet and that reporting practices differ significantly between companies in different domains. Moreover this study considered only size as an explanatory variable but no relationship was found to be significant in any of the five countries with the exception to Australia.

Marston (2003) surveyed the business reporting practices of 99 Japanese companies in 1998 and found that 78 of these companies had a web site in English: of these, 68 reported some financial information with 57 providing detailed accounting information. The results also showed that company size has significant positive association with the existence of a web site but the extent of financial disclosure was not related to size. In addition, the researcher found non-significant association of profitability, industry grouping, and overseas listing status with internet disclosure. The major limitation of the study is that the research was limited to the top 99 Japanese companies and only four hypotheses were tested. It might have been better to look at the companies from a wider range and there may be scope for explaining internet disclosure using other variables.

Marston and Annika (2004) examined the use of the Internet for the disclosure of financial and investor-related information by German companies between two points of time: 2000 and 2003. The descriptive part of the study revealed that

significant improvements in the amount and the presentation of information on corporate web sites have occurred since the initial survey in 2000. The second part of the study tried to identify reasons for the differences in the online disclosure practices of companies by testing the association between five firm-specific factors and the level of web disclosure. The results of multivariate analysis showed that firm size is the only significant explanatory variable stable over time, for the amount of information disclosed on corporate web sites. Foreign listing status was only significant for the year 2003 and free float appeared to be only significant for the year 2000. Systematic risk and profitability have no predictive value for the internet reporting practices of the sample companies. Another important result was that the explanatory power of their model is greater for the dimension measuring the amount of information disseminated than for the presentation dimension.

By considering the implications of web technology for business reporting in the future and the challenge it poses for standard setting bodies, Khadaroo (2005) compared business reporting practices in Malaysia and Singapore. It provides an understanding of the present state of delivery of business information in these countries albeit at one point in time: it must be remembered that web page contents are very dynamic. The results show that 75% of Malaysian companies had web sites as compared to 87% Singaporean companies. One of the findings was that listed companies in Singapore have a greater web presence compared with Malaysia. Another major finding was that companies in Singapore were making better use of the potential the internet had to offer compared with companies based in Malaysia.

Ezat and Ahmed (2008) examined the factors that influence the timeliness of corporate internet reporting by Egyptian listed corporations. They selected the most active 37 Egyptian listed companies on the basis of market capitalisation, after excluding the companies which did not have a web site. This study performed two regression models: multiple regression and logistic regression. According to the multiple-regression model, the study found that company size, liquidity, ownership structure, service activity type, board composition and board size have significant positive association with corporate internet reporting timeliness while profitability, leverage, issue of shares and role duality have

non-significant association. On the other hand, according to logistic regression, the study found that the entire variables are significantly associated with different timeliness items. The findings of this study are based on a small sample size, and may differ if the sample size were changed. Moreover, they used a checklist of only 11 items, considering items related to timeliness and did not consider any item of content or presentation.

In order to find out whether there is any expectation gap in internet reporting, Turel (2010) examined the level of internet financial reporting in Turkey. In their study, expectation gap refers to the difference between (1) what financial statement users perceive to be important in decision making and (2) what companies actually disclose or present in their web pages. It was found that, the entire sample of companies (98) included in the study had web pages and 95% of these companies disclosed financial information on their web pages.Their findings indicated that an expectation gap exists; financial statement users have higher expectations for various facets than companies actually report: the gap existed in areas including: reports of analysts, phone number to investor relations, segmental reporting, financial data in processable format, and summary of financial data**.**

Aly et al. (2010) examined the potential factors that might affect the level of corporate internet reporting in a developing country – specifically Egypt and found that 56% of Egyptian companies report a significant proportion of information on their web sites. In addition, researchers found that some financial characteristics explain the variation in the degree of internet reporting between Egyptian listed companies. The result also showed that profitability measured by ROE, foreign listing and industrial type are the most important factors that affect the amount and presentation formats of information disclosed on Egyptian companies' web sites. However, other firm characteristics, such as firm size, leverage, liquidity and auditor size do not explain corporate internet reporting. However, the result of this study is difficult to generalise as the number of companies was relatively small due to company websites being a recent phenomena in Egypt.

To find out whether there was a significant difference between the firms listed in the Corporate Governance Index of the Istanbul Stock Exchange (ISE) and those that are not, in terms of level of disclosure on the corporate web sites Uyar (2011), investigated the utilisation of the internet by the Turkish companies listed on the ISE. He also examined some company characteristic (XCORP listing, firm size, industry, profitability) that influence the information disclosure level and found that firms, which are listed in the ISE Corporate Governance Index (XCORP), disclose significantly more information on corporate web sites compared to the firms that are not listed in the XCORP. In addition, the results indicated that firm size and being listed in the XCORP are significant explanatory variables for the total disclosure score on the corporate web sites, while industry and profitability are not.

In Indonesia, another developing country, the determinants of internet financial reporting was examined by Puspitaningrum and Sari (2012). The aim of this study was to find empirical evidence of whether corporate governance mechanisms (ownership structure, independent commissioners, and audit committee characteristics) affect the level of voluntary disclosure of internet financial reporting. By employing a purposive sampling method, 95 companies were selected from all of 420 Indonesian companies listed in Indonesian Stock Exchange in the period of 2010. The result indicated that among corporate governance mechanisms, only audit committee meeting frequencies influence voluntary disclosure of internet financial reporting. Moreover they also found that size tends to affect the level of internet financial reporting while profitability, liquidity, and leverage did not affect the level of internet financial reporting.

However, internet financial disclosure is not homogeneous. It varies substantially with respect to the depth and volume of released information, as well as the manner in which the data are delivered in terms of timeliness, technology, and user support (Marston and Leow 1998; Lymer et al. 1999; Ettredge et al. 2002; Lybaert 2002). There appears to be a higher degree of homogeneity in company sites of firms that belong to the same industry, indicating that companies are inspired by and wish to keep pace with their rivals (Lybaert 2002; Matherly and Burton 2005). A number of studies predict that the

increasing use of the internet by investors is likely to continue and is expected to increase the supply of voluntary disclosures (Healy and Palepu 2001).

It is noticeable that most of these prior studies were undertaken for developed countries, especially the US and European countries. The number of factors that drive firms to use the internet reporting in these studies is not identical. These factors include firm characteristics (i.e. firm size, profitability, industry type, leverage, and audit type) and corporate governance characteristics (i.e. ownership structure, board composition, board size, and role duality). However, the results are often mixed. In addition, the findings of these studies may not be generalisable to different countries at different stages of development, or with different business environments and cultures. A few studies on the determinants of internet reporting were conducted in developing countries such as Thailand (Davey and Homkajohn 2004), Malaysia (Abdul Hamid 2005), some Arab countries (Ismail 2002; Al-Htaybat and Napier 2006); Egypt (Aly et al. 2010) and China (Xiao et al. 2004; Zhang et al. 2007). A summary of the literature review is given in the table 3.1.

In Bangladesh, a limited number of studies have been undertaken to examine internet reporting. However, the researchers have only used descriptive analysis to offer a general overview of the current situation (Bhuiyan et al. 2007; Dutta and Bose 2007; Khan et al.2009). There are also some studies which examined a particular aspect of corporate reporting (such as corporate environmental reporting, Dutta and Bose 2008; Banerjee and Probal 2009; sustainability disclosure by Sobhani et al. 2012). There is only one study (Nurunnabi and Monirul, 2012) that examined the extent of corporate internet reporting and seven company characteristics as the determinants of it. The main limitation of this study is that there is no classification of information as voluntary or mandatory. Although the study published in 2012, it used information from 2009. In addition, the study was performed before the notification of the BSEC in 2010 regarding the disclosure of quarterly financial statements on the company's website.

In order to remove the gap in the literature, the current research investigates the level of corporate mandatory and voluntary information on the internet and their

determinants. As the study measure the disclosure level through the disclosure of mandatory and voluntary information on the internet, the following section of this chapter will highlight the relevant literature for the study, according to the category of information.

3.3 Mandatory Disclosure:

Mandatory disclosure refers to those aspects and information which must be published as a consequence of the existence of some legal or statutory stipulations, capital markets, stock-exchanges commissions or accounting authorities regulations. The aim of mandatory disclosure is to satisfy the users' informational needs, ensuring quality control through the laws and standards' observance (Adina and Pares 2008). Wallace and Naser (1995) defined mandatory disclosure as the presentation of a minimum amount of information required by laws, stock exchanges, and the accounting standards setting body to facilitate evaluation of securities. More specifically, Akhtaruddin (2005) defined mandatory reporting concentrating on items of information required by the Companies Act 1994, the listing rules of the stock exchanges, and the approved IAS's that listed companies must disclose in their annual reports.

Disclosure theory indicates that corporate disclosures are complex constructions capable of a variety of interpretations. As Gibbins et al. (1992) have argued, organisations may disclose information to support the efficiency of exchange and production, but they also disclose information to establish their compliance with the social values reflected in regulations and informal norms. The most important publishing variant is represented by the compulsory disclosure. The mandatory character of reporting is ruled at national or even regional level through professional organisations or government authorities, being practiced in most of the countries by all the firms regardless of their size, of their judicial, fiscal or national accounting system, the favourite finance sources and other factors which impact on disclosure policy.

In Bangladesh, corporate disclosure is largely influenced by the British accounting system. As mentioned in chapter two, the mandatory disclosure requirements in Bangladesh are generally guided by the Companies Act 1994, Securities and Exchange (SEC) Rules 1987, Listing Regulations issued by the

Security and Exchange Commission of Bangladesh, and BAS and BFRS adopted by the Institute of Chartered Accountants of Bangladesh (ICAB). Most of the studies exploring various determinants of the mandatory disclosure practices are on the basis of printed annual report; there are a very few studies regarding the determinants of corporate mandatory disclosure on the internet. Some authors distinguishing between mandated and non-mandated disclosed items (Ettredge et al. 2002; Xiao et al. 2004).

3.3.1 Prior Research on Mandatory Disclosure on the Internet:

Any corporation in the world wishing to build an international profile or tap international sources of funds must have a corporate web site that includes an investor relations component. From a demand perspective, investors rely increasingly on corporate web sites for periodic and annual financial statements and also for press releases, speeches, investor conference calls as well as links to products and other information. Increasingly securities regulators are mandating the use of the internet for corporate performance disclosure purposes.

Ettredge et al. (2002) extended their prior research on internet financial reporting by providing insights into dissemination of two types of financial information on corporate web sites. One type consists of reports that already have been filed with the SEC (i.e. required filings).The second type is all other voluntary information for investors. They found that the presence of required items is significantly associated only with size and a proxy for information asymmetry, while voluntary information item disclosure is associated with variables proxying for size, information asymmetry, demand for external capital, and companies' traditional disclosure reputations. Their results confirmed that incentives motivating initial voluntary disclosure also explained the subsequent dissemination of voluntary material.

Xiao et al. (2004) studied internet corporate disclosure in China. They find that there is a significant and a positive relation between mandated and voluntary disclosure. They further show that the presentation format of internet corporate disclosure is associated with the employment of a Big-5 auditor and whether the firm is in the information technology industry; while a negative association exists

between profitability and the voluntary disclosures. Voluntary internet corporate disclosure is positively and significantly associated with the proportion of legal person ownership, but not with ownership by domestic private investors, foreign investors and the state. In addition, the proportion of independent directors has a positive relation with presentation format, voluntary disclosures, and the availability of English web pages.

Mendes-da-Silva and Theodore (2004) examined the determinants of voluntary disclosure of financial information on the internet by Brazilian firms. They found that firm size, liquidity in the stock exchange and the corporate governance of companies has significant positive association with the level of disclosing information on the internet. In particular, these three determinants have significant positive relationships with the level of disclosing both mandatory and voluntary information. On the other hand, company performance has a significant negative association with the level of disclosing mandatory and voluntary information on the internet. The study did not find any association of leverage with disclosure level. The limitation of the study is that it does not consider financial firms. They also ignore non-financial information when developing their disclosure checklist.

Again, considering only the non financial sector Alvarez et al. (2008) examined the validity of the hypotheses of the agency, signalling, political costs and proprietary costs theories in the disclosure of voluntary and mandatory information online. They used a content analysis approach and developed three disclosure indexes. Their findings emphasise the relevance of the hypotheses of political costs theory as the main explanatory factor for voluntary disclosure of information on the internet by quoted Spanish firms. In particular, they hypothesise that the greater the firm's monopolistic power, the more visible the company is and the more political cost it faces. To reduce these costs, companies have an interest in disclosing greater amounts of information.

Boubaker et al. (2012) investigated the determinants of web-based corporate reporting by French-listed firms. They also analysed the use of the internet to disseminate corporate information and examines the extent of web-based corporate disclosure by developing six disclosure indexes: total score, content

score, format score, mandatory score, non-mandatory score, and incremental score. The explanatory variables include firm characteristics: size, float, xlist, leverage, profitability, and equity offerings. They found that the model using the non-mandatory score as a dependent variable had greater explanatory power relative to the models using total, content, format, mandatory and incremental scores: the lowest explanatory power is given by the mandatory score. They also found that firm characteristics are rather associated with the extent of voluntary items disclosed at corporate web sites and to a lesser extent to mandatory information and to the way the information is presented on the web. This suggests that web sites are more suited for non-mandatory information. Their findings also revealed that internet corporate reporting increases with firm size, audit firm size and ownership dispersion and is more important for IT industry firms and for firms having issued bonds or new shares. However, the study does not cover all information provided on web sites, particularly those about the impact of IFRS on companies' accounts. They also excluded banking companies from their sample size. The summary of these literatures are given in the table 3.1.

Although there are very few studies which consider disclosure of mandatory information on the internet, there is no detailed study in the case of Bangladesh. So there is a gap in the literature as to what extent do Bangladeshi companies disclose mandatory information on the internet and what are the determinants that affect this disclosure level.

3.4 Voluntary Disclosure:

The expression voluntary disclosure indicates that this disclosure is discretionary and subject to the decision of management. There is no formal obligation for the company to disclose more information voluntarily. In other words, no legal or formal action will be taken if a company does not disclose information more than the requirements. The need for voluntary disclosure appears as a consequence of the information asymmetry between the two parties: managers are better informed about the business than its owners. Voluntary disclosure concerns information made public through the firm's free choice. It is influenced by culture, social, economic and behavioural factors that are specific to each firm (Adina and Pares 2008). Although there are a large

number of studies which address voluntary disclosure, there is no generally accepted definition for voluntary disclosure (Abdel- Fattah 2008; Adina and Pares 2008).

Meek et al (1995) indicate that voluntary disclosure– disclosure in excess of the requirements – represent free choices on the part of management to provide information that is considered to be relevant to the users of annual reports (Abdel-Fattah 2008). It is argued that the reliance on the disclosure requirements or rules has created some limitations and unfairness in reporting and disclosure (Riahi-Belkaoui 2002). Therefore, theorists and practitioners have begun to recognise the inherent shortcomings of traditional reporting and have developed models for additional voluntary disclosure (Schuster and O'Connell 2006). Previous disclosure studies describe the term voluntary disclosure as items of information that are disclosed over and above the mandatory requirements (e.g. Cooke 1989; Ho and Wong 2001; Barako et al. 2006). Abdel-Fattah (2008) defines voluntary disclosure in annual reports as:

"Items of information, quantitative or qualitative, that companies disclose in their annual reports above the mandatory requirements specified in accounting standards and/or other regulations".(p-15)

Thus voluntary disclosure is defined as being an additional offer of information in relation to different national regulations or international referential of business reporting; that is, something that is not compulsory by the law, but becomes voluntary through the behaviour regarding publication. In other words, the voluntary offer of information represents the excess of information, dependent both on the free choice of the enterprise leadership and on the regulations in force, the outside pressures of the capital markets, financial analysts, consulting firms and the cultural factors (Adina and Pares 2008).

Adina and Pares (2008) also stated that companies often voluntarily disclose corporate information in order to obtain capital and to attract investors, even in the absence of regulation. Holland (1998) comparing the benefits to the costs of voluntary disclosure, states that the management will publish until they will reach the point when they will observe that the capital agency costs reduction

has equalled the increase of the information publication costs for the market and the other users. Moreover, agency theory highlights the reasons that cause managers to provide voluntary disclosures above and beyond required disclosures. According to this theory voluntary disclosures occur as a means for companies to minimise their agency costs.Disclosures in excess of that required by law has been an area of interest to researchers for many years. Companies continue to disclose voluntary information despite ever increasing mandatory requirements and so the motivation for such behavior has been the focus of much attention (Watson et al. 2002).

In the absence of legislative requirements, voluntary disclosure demonstrates a commitment to society (Mathews 1995). Although not all benefits can be quantified in monetary terms (Evens 2003), companies that report on social responsibility and account for social and environment impacts may gain specific benefits by: attracting and retaining talented people (Adams 2002; Simms 2002): having better internal control and decision-making systems; producing costs savings; and continuously improving products and services (Adams 2002). By disclosing information on social and environmental issues, companies can minimise the risk of powerful consumer boycotts (Adams 2002); communicate with the community and stakeholders (Anand 2002) and construct a competitive advantage (King 2002).

Corporations that fail to meet societal expectations with regard to social responsibility may lose their legitimacy, and subsequently their survival will be threatened. Societal expectations for financial institutions such as banks may include strengthening corporate governance, fighting money laundering, preventing tax evasion, protecting financial privacy, equal opportunity employment, and promoting environmental awareness. Empirical research (Karake 1998) found a positive association between a company's social performance, as measured by a company's reputation index, and its financial performance, as measured by its return on equity (Douglas et al. 2004).

The nature and extent of corporate social reporting appears to vary between different countries (Gray et al. 1996). The difference in the extent to which companies have reported on the non-financial aspects of corporate social

reporting may also be a result of government policies. Mathews (1993) pointed out that cultural and national differences were likely to affect accounting practices in general and corporate social reporting practices in particular. Tsang (1998) suggested the stage of economic development of a country was likely to be an important factor affecting CSR practices. However, Adams et al. (1998) contended that with the increasing globalisation of business, cultural specific factors may not weigh as strongly as corporate and industry specific factors.

With the growing awareness towards sustainable development, industries and corporations have a major role in environmental degradation and protection thereof. This awareness on sustainable development is visible through varied environmental management mechanisms practised amongst companies across the world. Environmental concerns are addressed by corporate giants through identification and estimation of environmental costs, benefits, investments, assets and liabilities into main stream accounting and reporting practices, for varied managerial decisions. These focused environmental efforts have sharpened and improved the global reporting standards (Malarvizhi and Sangeeta 2008). Corporate environmental reporting can be defined as a mechanism whereby companies disclose the environmental aspects of their corporate activities to stakeholders. Since the Earth Summit in Rio de Janeiro in 1992, people recognised the need for sound environmental information for improved decision-making (DEAT 2005). Environmental reporting was traditionally a voluntary process but from the mid-1990s, a number of European countries began to introduce mandatory environmental reporting (DEAT 2005). Denmark was the first country to do so, in 1996.

The past few years have seen a rapid increase in accountability pressures on companies. Financial crises in Asia and elsewhere, accounting and remuneration scandals, and suspicion about the social and environmental implications of business have led to growing demand for transparency about corporate behaviour on a whole range of issues (Kolk and Perego 2008). Corporate sustainability has been defined as the strategy adopted by a company to satisfy the legitimate social, economic and environmental expectations of its stakeholders (Husted and Allen 2000). Furthermore, according to legitimacy and stakeholder theories, corporate sustainability

disclosure (CSD) is a part of the dialogue between a company and its stakeholders and provides information on a company's activities that help legitimise its behaviour, educate and inform, and change perceptions and expectations (Gray et al.1995; Adams and Larrinaga-González 2007; Adams and McNicholas2007).

The global issue of sustainability urge the corporate bodies to be transparent by disclosing those sustainability activities that may affect the earth and society at large (Sobhani et al. 2011). This type of disclosure around the world has been steadily rising since the end of 2000 and Japan is the pioneer in terms of companies issuing sustainability reports (Kolk 2003). Many organisations now report their sustainability strategies and practices in their annual reports and corporate websites.

However, there are no rules or regulations regarding corporate social, environmental or sustainability reporting in Bangladesh. Neither is there any provision in the Companies Act 1994, nor any separate Bangladesh Accounting Standard (BAS) regarding social and environmental reporting (IASCF 2003). However, Bangladesh adopted International Financial Reporting Standards (IFRS) on 5thJuly, 2006 and issued BAS-1 (Presentation of Financial Statements) by encouraging the companies listed on the Stock Exchange of Bangladesh to publish additional statements on their non-financial activities. So it can be said that corporate social, environmental, and sustainability reporting are still voluntary in Bangladesh with the exception of disclosure of the total amount of expenditures on energy usage, which is required to be disclosed under the Companies Act 1994 and the Securities and Exchange rules 1987.

3.4.1 Prior Studies on Voluntary Disclosure on the Internet:

Traditionally, companies have used different media to disclose voluntary information. These media include the printed annual report (Lang and Lundholm 1993) and shareholders' meetings (Frankel et al. 1999). Usually, the disclosure takes place when it is more convenient for the company (Abbody and Kasznik 2000; Frankel et al. 1995; Kasznik 1999), in order to improve company' results (Dye 1990).Today, the internet constitutes a powerful means for voluntary

disclosure. It allows an increase in the number of potential users (Bonson and Tomas 2002).

The extent of financial information disclosure by the largest 206 companies was examined by Craven and Marston (1999). The study revealed that company size measured by turnover, market value, number of employee and total assets has a significant positive association with the use and extent of financial disclosure on the internet. They found no significant association between industry type and the disclosure level. As the study considered only the 206 largest companies of London Stock Exchange, their conclusion should be restricted to large company disclosure. Moreover they considered only the disclosure of financial information and two explanatory variables.

Bonson and Tomas (2002) analysed the corporate internet reporting behaviour of leading companies in different European countries in order to make a comparative analysis. To evaluate the level of disclosure, they collected data from the biggest 20 companies based on their market value in each European Union country and developed a transparency index by considering: financial and non-financial information, management's analysis of the financial and non-financial data, forward looking information, information about management and shareholders, and company's background information to evaluate the level of disclosure. Their results concluded that the information provided on the internet by leading European firms depends on the industry type, country of origin and size of the company. As they considered only the 20 biggest companies in each country, the result cannot be generalised to all. Results may vary if the number of companies increased.

Again Bonson and Tomas (2006) sought to identify the differences existing between the information provided by the companies of Eastern Europe that have recently joined the EU or are now in the process of joining and the information required according to the initiatives of the EU and their determinants. In their study, they collected data from 13 countries and developed a disclosure index on the basis of the Spanish regulations on corporate transparency. However, the sample selected only those companies who have web pages in English. They found significant differences between the

information provided by Eastern European companies that have joined the EU and the information required by the initiatives of the EU. Among the four explanatory variables, company size, companies that are audited by the Big Four audit firms and those belonging to the financial sector, have a positive significant relationship with the level of information disclosed on the internet. But they found no relationship between the country in which the company is located and the disclosure level.

By considering only financial information Ismail (2002) examined the extent of information disclosed on the internet by the Gulf Co-operation Council (GCC) countries especially Qatar, Bahrain and Saudi Arabia. Data for this study were collected from a cross-section of all 128 companies that are listed on the stock exchange of the selected GCC countries. They found that the probability of a firm's publishing financial information on the internet does not only depend on individual characteristics, but on a combination of interaction effects among firm characteristics (size, leverage, and profitability), industry type, and country.That means increasing in assets, profitability, or leverage may increase the probability of a firm publishing financial information on the internet when these variables are within a specific range; above this range an increase in such variables may decrease the probability of a firm's publishing financial information on the internet. So, the final effect depends on the interaction among firm characteristics, industry type, and country.

Oyelere et al. (2003) examined the extent and determinants of voluntary corporate internet financial reporting (IFR) by New Zealand companies. Although they consider seven explanatory variables, they used information only as far as 1998. They found that company size, industrial sector and liquidity have significant positive association and a spread of shareholding has a negative significant association with IFR practice. Moreover, internationalisation has a significant positive association with IFR practice at the univariate level but it is insignificant at the multivariate level. Other firm characteristics, such as leverage and profitability do not explain the choice to use the internet as a medium for corporate financial reporting.

Laswad et al. (2005) examines the characteristics of New Zealand local government authorities that influence the voluntary dissemination of financial information on the internet. Their result suggested that local authorities that are more highly leveraged or that create relatively more municipal wealth than other authorities are more likely to engage in internet financial reporting (IFR). Moreover, New Zealand local authorities that are more visible in the press are also more likely to use the internet to provide financial information. They also found that council type has negative significant association with the IFR practice possibly due to the urban nature of the internet and relatively lower level of access. However their findings did not support local authority size and level of political competition as the predictors of IFR.

The timeliness of corporate internet reporting practices by the UK companies were examined by Abdelsalam and Donna (2007).Their study provided evidence that board independence is significantly negatively associated with corporate internet reporting (CIR) timeliness, thereby; suggesting a high percentage of outside directors may yield negative consequences. In case of board experience, they found that boards with less cross-directorship, more experience in terms of average age and lower length in service for executive directors provide timelier CIR. Although they revealed a positive association of CIR with U.S. listing and being in a technology industry, there is a significant negative association between providing web casts on the internet and block ownership (number of major shareholders) and role duality. As the sample of this study is drawn from the top quartile of London Stock Exchange companies, so caution is required in generalising the results.

Trabelsi et al. (2008) analysed the Canadian company's internet reporting practices to identify their determinants and consequences. Their evidence indicated that firms use the internet to report complementary information on firm background, management forecasts, and intangible assets and on social and environmental issues. They found that additional financial disclosures through corporate websites is significantly and positively associated with share turnover, research and development expenditure, degree of asymmetry, firm's performance, financing activities, Herfindahl index, firm size, and analyst following: it has significant negative association with competition. But they found

no association of ownership concentration, cross listing, relevance, and audit quality with the additional voluntary internet financial disclosures.

One of the emerging economy's (Egypt) internet financial reporting practices was investigated by Desoky (2009). He examined some company characteristics namely company size, profitability, foreign listing, industry type, ownership structure and legal form as the determinants of Internet Financial Reporting (IFR) practices. They found that company size, profitability, foreign listing and ownership structure are significantly positively associated with the IFR of Egyptian listed companies, while legal form is significantly negatively associated. However, industry type is not significantly associated with the IFR. This study is limited to a relatively small sample of 88 Egyptian listed companies, which may not represent all of the possible listed companies and it only considered the disclosure of financial information. Moreover, banking and insurance companies are excluded from the sample companies.

Garg and Divya (2010) investigated the use of internet for corporate reporting by 200 companies of the BSE- 200 Index in India. They developed an Internet Disclosure Index (IDI) to measure the type and extent of web disclosure but used data of 2007 which is backdated. Their results provide evidence of significant positive association of industry sector, size of the company, association with business house with the extent of information disclosed on websites. But variables like age of the company, profitability, liquidity, leverage and ownership spread do not affect web reporting by companies. Although they classify information into seven categories to develop their index (Financial Reporting Index, Corporate Governance Information, Corporate Social Responsibility & Human Resource Information, Marketing Information, Investor Relations Communication, Right to Information Act, and Technological Aspects and User Support), they did not identify which are mandatory and which are voluntary.

Using a sample of 84 publicly traded companies listed in Buenos Aires Stock Exchange (BCBA) in Argentina, Alali and Romero (2012) examined the internet reporting practices by companies and their characteristics. Their result suggested that companies in the transportation and gas, real estate, services

and mining disclose more financial and non-financial information on their websites than companies in other industries. Moreover, they found significant positive association of company size, Merval25 and majority owners (block holders) with the level of disclosure. Although profitability, Big-4 auditor and leverage do not have a significant effect; growth has a negative effect on corporate Internet reporting practices.

The Internet media has become more popular as a new communication medium firms use to present themselves as socially responsible. Due to globalisation, there is an increased pressure on firms and managers to act ethically and in a socially responsible manner. The internet enables people to become aware of corporate social responsibility (CSR) issues such as the use of child labour, exploitation of workers and destruction of the environment. CSR reporting contributes to the reduction of information asymmetry between managers and investors as well as other stakeholders (Jizi et al. 2014). There are several reasons for firms to disclose corporate social responsibility information on the website.

Corporations that fail to meet societal expectations with regard to social responsibility may lose their legitimacy, and subsequently their survival will be threatened. As the government is not fully able to take care of the population and be responsible for its quality of life, companies play an important role in society and try to differentiate themselves from each other through CSR actions (Jamali and Mirshak 2007).In the absence of legislative requirements, voluntary disclosure demonstrates a commitment to society (Mathews 1995). Although not all benefits can be quantified in monetary terms (Evens 2003), companies that report on social responsibility and account for social and environmental impacts may gain specific benefits. According to Idowu and Towler (2004) an organisation may derive some perceived benefits from the disclosure such as increased customer loyalty, more supportive communities, the recruitment and retention of more talented employees, improved quality and productivity, and the avoidance of potential reputation risk which may arise from environmental accident.

Corporate Social and Environmental Reporting was defined by Gray et al. (1987 as cited in Rizk 2006) as 'the process of communicating the social and environmental effects of organisations' economic actions to particular interest groups within society and to society at large'. Environmental reporting was traditionally a voluntary process but from the mid 1990s, a number of European countries began to introduce mandatory environmental reporting (DEAT 2005). Sustainability reporting is the practice of 'measuring, reporting, and being accountable to internal and external stakeholders for organisational performance towards the goal of sustainable development' (GRI 2006, p.3).

Chambers et al. (2003) investigated CSR reporting practices on the website by the top 50 companies from each of the seven countries in Asia. They identified very different levels of CSR penetration in the seven Asian countries and concluded that for these seven countries, the level of CSR lags behind the UK. Furthermore, these countries often developed their own system of reporting. They also suggest that globalisation is a driver for new CSR developments as they found that firms which operate internationally are more likely to engage in CSR and to institutionalise it through codes than those that do not. Since they considered only the top 50 companies in seven countries, the result cannot be generalised.

Wanderley et al. (2008) examined whether CSR information disclosure on corporate websites is influenced by country of origin and/or industry sector in emerging countries such as Brazil, Chile, China, India, Indonesia, Mexico, Thailand and South Africa. By analysing the websites of127 corporations they found that both the country of origin and industry sector has a significant influence over CSR information disclosure on the web. They also identified that country of origin has a stronger influence over the disclosure on the web than industry sector.

CSR disclosure practice both in annual report and on the website were investigated by Ponnu and Maurice (2009).They found that Kenyan firms disclose significantly more corporate social information on web sites than in annual reports. They considered all the listed companies in Nairobi Stock Exchange to determine the relationship between company size (paid-up capital,

revenue and profit before tax) and CSR disclosure and to examine the themes (environment, community involvement, product and consumer and human resources management) of CSR disclosure. Their result revealed that there is no significant difference between the level of CSR disclosure among the various industry groupings which is similar to the results of other studies among the developing countries (for example, Ahmad et al. 2003; Teoh and Thong 1984; and Andrew et al. 1989).They also found that there is no significant relationship between firm size and CSR disclosure in Kenya and the theme most commonly disclosed was community involvement.

Chatterjee and Monir (2008) also reached the same conclusion that Indian companies provided more environmental information on their web sites than in their annual reports. They selected the top 45 companies as sample on the basis of market capitalization as a representative of firm size because larger firms find disclosure of environmental information more advantageous to them than smaller firms. They also excluded financial firms from their sample as this sector has no impact on the environment. However the study revealed that although there are no regulations enforcing the disclosure of environmental information, most Indian companies have disclosed environmental information and a company belonging to the “diversified” sector has provided the highest number of environmental information disclosure sentences on web site. In addition, they found that most of the sampled companies have provided the news of a positive and neutral nature and none of them disclosed any “bad” news.

Adams and Geoffrey (2006) examined the development of the corporate web site as a medium for sustainability reporting in Australia, Germany and the United Kingdom. They found that the majority of large companies in the three countries analysed had a web site at the time of the study and many companies felt that they needed a web site presence without actually understanding or having the expertise in the technology to fully appreciate its potential. This has resulted in a situation where a web site, once created, becomes neglected with content being initially imported but not regularly updated. That means there is some diversity in the approaches taken in utilising the web site.

Like Chatterjee and Monir (2008), Zhang et al. (2007) also selected the top 20 companies on the basis of market capitalisation from the listed companies in China and argued that these companies act as leaders and guiders in their own industry and their actions toward Internet Environmental Reporting (IER) can have significant impact on the rest of companies in China. This study analysed the nature, contents, type and style of Internet Environmental Reporting that have been adopted by Chinese listed companies from 2002 to 2006. They found that IER is increasingly used by Chinese listed companies to disclose social and environmental activities, and companies are increasingly using the phrases of 'sustainability' and 'Corporate Social Reporting' in their IER. Moreover, they concluded that both the quantity of disclosure and the coverage of areas of social and environmental information have steadily increased suggesting that IER is 'growing up' in China although there remains a considerable discrepancy in terms of reporting practices and the levels of social and environmental information disclosed.

Malarvizhi and Sangeeta (2008) made an attempt to understand the current trends in internet environmental reporting practices of Indian companies. The research has observed that Indian companies follow diverse reporting practices on the internet viz., stand alone environmental reporting (satellite accounts) or reporting along with the Annual/Financial Reports, or Sustainability Reporting. It also showed that Indian companies exceed their existing legal obligations and anticipate more future legislation on environmental issues. Good environmental performance is seen to benefit investors more by reducing risk than by increasing return. Financial managers, in particular, need to be aware of how environmental matters, affect the fundamentals of financial accounting and reporting (Schaltegger and Burritt 2000).

3.5 Prior Studies on Corporate Reporting on the Internet in Bangladesh:

The overall corporate internet reporting practices of listed companies in Bangladesh were investigated by Bhuiyan et al. (2007), Dutta and Bose (2007) and Nurunnabi and Monirul (2012). According to Bhuiyan et al. (2007) only 40.24% listed companies have websites among which 33.33% companies provide information on the web. They developed a disclosure index of 54 items of information which were categorized into seven major themes (1) General

information; (2) Accounting and financial Information; (3) Corporate social responsibility and human resource information; (4) Corporate governance information; (5) Contact details to investor relation and related conveniences; (6) Material processable format; and (7) Technological development and users supports. Their result showed that significant difference exists in the average internet disclosure among the sectors. They suggested that as more and more people of Bangladesh are connecting themselves to the internet, companies are expected to change their internet reporting practices, in terms of both content and disclosure in order to enhance the investor relations activities on the internet.

Dutta and Bose (2007) also investigated the utilisation of the internet for communicating corporate information by the listed companies of Bangladesh and found that only 38.81 percent of the listed companies had a website and 61.54% reported at least one financial item on the web site. Their findings revealed that the banking, leasing and finance sector are more advanced than other sectors in establishing a website for corporate reporting. Moreover, more than 71%of companies reported at least one corporate governance item on their websites and only around 38% companies provided social information on their websites. Like the previous study, this study also did not examine any determinants or factors influencing the disclosure of information on the web.

Only Nurunnabi and Monirul (2012) examined the current state of voluntary disclosure of internet financial reporting (IFR) in Bangladesh as an example of an emerging economy. They investigated empirically some company characteristics as determinants of such practice. They developed a disclosure index of 56 items of information which were categorized into three sections, including ‘‘contents on financial statements’’ (14 items), ‘‘other financial information’’ (24 items) and ‘‘presentation and user support’’ (18 items) but used data from the year 2009. They found that only 29.12% companies had web sites out of the 285listed companies and only 33.34% companies’ provided financial information. Moreover the study examined the association between a number of company characteristics and the extent of voluntary disclosure of IFR: they found that only big four audit firms and non-family ownership variables were significantly associated with the levels of voluntary disclosure. Other variables

such as size measured both by sales and market capitalization, profitability measured both by net profit margin and return on equity, age, industry category and corporate governance link (audit committee) are not statistically significant. Another important result revealed that despite the mandatory requirements to have an audit committee in Bangladesh, the companies without audit committee were disclosing more voluntary information: it raises the question on the lack of regulatory enforcement in Bangladesh.

Khan et al. (2009) investigated the emerging issues of online corporate financial reporting in the global context and then made an attempt to provide an appraisal of the current practice of corporate financial reporting on the internet (FRI) by Bangladeshi companies. They selected the top 30 companies on the Chittagong Stock Exchange as their sample and found that only 75% of the companies having website disclose financial statements on the internet. They also analysed the issues relating to financial reporting on the internet in Bangladesh through focus group discussions with different stakeholders and the responses to a structured questionnaire. They found that the aggregate overall score of the opinions of the sample respondents regarding inaptness of FRI in fulfilling the contentment of the users of financial reporting is 1.98 and the range of score is from 1.76 to 2.19. They also provide evidence that FRI presently practiced in Bangladesh is not apposite.

Again Dutta and Bose (2008) investigated the utilisation of corporate websites for communicating corporate environmental information by the listed companies of Bangladesh. The sample for the study consists of 104 listed companies among which only 17 companies (16.35%) disclosed environmental information on their websites: out of these 17 companies, 3 (17.65%) companies belong to the pharmaceutical and chemical sector and 2 (11.76 %) companies from each of the four sectors such as papers and printing, cement, engineering and electrical, and textile and clothing sectors, disclose environmental information on their websites. Like their previous studies, they did not examine any factors or determinants influencing the disclosure.

The extent of utilization of corporate annual reports and corporate websites for communicating corporate environmental information by the listed companies of

Bangladesh was examined by Banerjee and Probal (2009). By analysing corporate annual reports of 30 companies and corporate websites of 17 companies in Bangladesh, they found that corporate environmental reporting in Bangladesh is still in its infancy, no matter which medium of communication is used. They also found that there is no statistically significant difference exists between these two media of communication in the case of disclosing environmental information.

Sobhani et al (2012) examined the status of corporate sustainability disclosure practices in the annual reports and corporate websites of the banking industry in Bangladesh. Their analysis revealed that most of the disclosed sentences are related to social issues whereas environmental issues are generally ignored. With respect to sustainability disclosure practices in the annual reports, 73.17% of sentences are found to be related to social issues and only 1.12% of sentences are related to environmental issues while with respect to website disclosure, 99.07% of sentences are related to social issues whereas only 0.27% of sentences are related to environmental issues. Moreover, in case of economic disclosure, annual reports disclose more economic information than websites, which are 25.71% and 0.66%, respectively. The majority of the items of sustainability information are declarative in nature and contain positive messages for the organisations. Negative information or bad news is rarely observed in the annual reports and websites. Islamic banks disclose more sustainability information in comparison to conventional banks. It is also found that among the three generation, the older bank does not outperform the younger bank in terms of sustainability disclosure.The study considered only the banking sector and results may be different for the other sectors in Bangladesh.

3.6 Gap in the literature:

This review supports the assertion that previous studies on internet reporting in Bangladesh have examined either a particular aspect of corporate reporting: such as corporate environmental reporting, Dutta and Bose 2008; Banerjee and Probal 2009; Sobhani et al. 2012, or how the internet is used for corporate reporting: Bhuiyan et al. 2007; Dutta and Bose 2007; Khan et al. 2009; Nurunnabi and Monirul 2012). There is only one study (Nurunnabi and Monirul 2012) which considers the determinants of corporate internet reporting in

Bangladesh but they didn't consider how much mandatory and voluntary information are disclosed on the internet in Bangladesh. Although the study of Nurunnabi and Monirul was published in 2012 they used the data from 2009.There are some studies regarding the extent of mandatory and voluntary disclosure in the printed annual report (Akhtaruddin 2005; Karim and Jamal 2005; Hasan et al. 2008) but there is no single study which considers the extent of mandatory and voluntary information on the internet.

In order to remove this gap, the current study not only considers the extent of mandatory and voluntary information on the internet but also tries to identify the determinants of such disclosure. Moreover, this study will focus the mandatory and voluntary disclosure and their different categories, which will help to identify the particular area where the major non compliance occurs. This study covers all the listed companies in Bangladesh and performs sector wise analysis of disclosure levels which will provide a total picture of internet disclosure to the interested parties including the regulators. In addition to this, there is no study performed after the directive circular in 2010 regarding the disclosure of information on the website.

3.7 Conclusion:

Reviews of the literature on mandatory disclosure on the internet have revealed that there is a lack of research in this area in developing countries. On the other hand, there are so much literature regarding voluntary disclosure on the web and its determinants. According to the consultative document of Institute of Chartered Secretaries and Administrators (ICSA), UK, (ICSA 2000) the home page of a company's web site should include a direct link to the package of statutory and financial information that is required to be open to the public. Thus, it suggests the best medium through which corporations can make financial information easily available to shareholders and other interested parties is the internet.

The current study tries to contribute to the disclosure literature through examining the extent of mandatory and voluntary disclosure practices on the internet by the listed Bangladeshi companies. The study intends to cover all the listed companies in Bangladesh and whether the determinants of mandatory disclosure on the web are same for the disclosure of voluntary information. The

literature review is justifiable because on the basis of this review it is possible to identify the gap in the literature and appropriate methodology for the study which are discussed in chapter five. Moreover, this review helps in the hypothesis development process in chapter four.

Table 3.1: Summary of Corporate Internet Reporting Literature

Author(s)	Country	Independent /Dependent Variables	Analysis	Findings
Brennan and Denis (1998)	Ireland (109 companies)	Independent: Size, leverage, demand for corporate information, and industry Dependent: Internet disclosure	Univariate, bivariate and nonparametric statistics	Findings indicate that larger listed companies (as defined by market capitalization, turnover, profits and employees) and companies in the services and finance industry are significantly more likely to use the Internet. They also found no association of internet usage with leverage and the total number of shareholders.
Debreceny et al. (2002)	22 countries (660 companies)	Independent: Size, leverage, growth prospect and intangible variable, foreign listing, us listing, level of technology employed, firm specific market risk, internet penetration and disclosure environmental Dependent: IFR-P (Internet Financial Reporting-presentation) and IFR-C (Internet Financial Reporting- content)	Ordered Probit regression	They found that internet disclosure is a function of both firm-specific characteristics, as well as environmental characteristics. In respect of firm characteristics they found that firm size, level of technology employed and growth prospects and intangibles are associated with internet financial reporting.

Ettredge et al. (2002)	USA(220 companies)	Independent: Firm size, raising equity capital, correlation between earnings and returns, annual return and disclosure quality Dependent: Required disclosure, voluntary disclosure and total disclosure	Regression analysis	Disclosure of required items is significantly associated only with size and a proxy for information asymmetry, while voluntary information item disclosure is associated with variables proxying for size, information asymmetry, demand for external capital, and companies traditional disclosure reputations.
Bonson and Thomas (2002)	European Union country (300 companies)	Independent: Industry type, country of origin, and company size Dependent: Disclosure index	Kruskal-Wallis test and ANOVA test	They found significant positive association of industry type, country of origin, and company size with the level of disclosure.
Ismail (2002)	GCC countries (128 companies of GCC countries)	Independent: Size (total assets and turnover), leverage, profitability (ROA and ROE), industry type and country Dependent: Financial disclosure on the internet	Logistic regression analysis	39.07%companies have websites and disclosed financial information on the internet. Firm assets, profitability, and leverage affecting the decision to disseminate financial information on the internet.
Marston (2003)	Japan (99 companies)	Independent: Company size, profitability, industrial classification, overseas listing. Dependent: Extent of internet	Kruskal Wallis and chi-square test	The results revealed that company size has significant positive association with the existence of a web site but the extent of financial disclosure was not related to

		disclosure		size. In addition, profitability, industry grouping and overseas listing status non-significant association with internet disclosure.
Oyelere et al. (2003)	New Zealand (229 companies)	Independent: Size profitability, liquidity, industry type, leverage, internationalization and spread of shareholders Dependent: Internet financial reporting (IFR)	Univariate and multivariate logistic regression	The results of the study indicate that firm size, liquidity, industrial sector and the spread of ownership motivate the provision of IFR while no significant relationship was found between IFR and profitability, internationalization, and leverage in this study.
Marston and Polei (2004)	Germany (50 companies)	Independent: Firm size, profitability, ownership structure, systematic risk, foreign listing status. Dependent: Internet disclosure index	Univariate and multivariate analysis	The results revealed that only size is a significant explanatory variable for the amount of financial and other investor-related information presented at companies' web sites which is stable over time. Foreign listing status was only significant for the 2003 sample and free float only significant for the 2000 sample whereas Profitability and systematic risk was non-significant.
Mendez-de-silva	Brazil (291	Independent: Leverage, annual	Multivariate	They found that firm size, liquidity in the

and Thoedore (2004)	companies)	earnings per share, firm size, liquidity, corporate governance, and profitability Dependent: Internet disclosure index	analysis	stock exchange and the corporate governance of companies has significant positive association and company performance (measured by annual earnings per share) has significant negative association with the level of disclosing information on the internet. But they did not found any association of leverage with disclosure level.
Xiao et al. (2004)	China (300 companies)	Independent: Type of auditor, foreign listing, share ownership, independent directors, industry type, profitability, leverage, firm size and proportion of fixed assets, influence of CSRC, right issue. Dependent: Extent of total internet corporate disclosure which was employed in six ways- Total score for all 82 disclosure items, content items, presentation items, CSRC-required items, non-CSRC-required items, and companies having	Univariate and multivariate analysis	There is a significant positive relation between mandated and voluntary disclosure. They further show that the presentation format of ICD is associated with the employment of a Big-5 auditor and firm belonging in the information technology industry, while a negative association exists between profitability and the voluntary disclosures. Voluntary ICD is positively and significantly associated with the proportion of legal person ownership, but not with ownership by domestic private investors, foreign investors and the state.

		English website		
Laswad et al. (2005)	New Zealand (86 local authorities)	Independent: Political competition, size, leverage, municipal wealth, press visibility, and council type Dependent: Internet financial reporting	Univariate and multivariate analysis	They found that leverage, municipal wealth and press visibility have significant positive association and council type has significant negative association with internet financial reporting practices while size and political competition have no significant association.
Bonson and Thomas (2006)	13 countries (266 companies from 13 Eastern Europe countries)	Independent: Size, industry type and audit firm size, country of origin Dependent: Extent of disclosure on the internet	Multiple regression analysis	They found that company size, companies that are audited by the Big Four audit firm and those are belonging to the financial sector have a positive significant relationship with the level of disclosing information on the internet. But they found no relationship between the country in which the company is located and the disclosure level.
Alvarez et al. (2008)	Spain (117 companies)	Independent: Industry concentration, corporate size, industrial sector, profitability, and leverage Dependent: Internet disclosure index	Multivariate analysis	They found that industry concentration has a significant and positive association with the level of disclosing voluntary information on the web but not with the level of mandatory disclosure. Moreover,

				size has significant positive association with both type of disclosure. Profitability (ROA) indicates a negative but non-significant effect in the estimated models, while the remaining variables representing industry sectors – services, industry and construction – and the leverage do not show a significant influence.
Ezat and Ahmed (2009)	Egypt (50 companies)	Independent: Size, type of business, profitability, leverage, liquidity and issue of shares, ownership structure, board composition, role duality, size of the board of directors Dependent: Corporate internet reporting timeliness index	OLS regression analysis and logistic regression analysis	Findings indicate that company size, liquidity, ownership structure, service activity type, board composition and board size are positively significant and associated with corporate internet reporting timeliness while profitability, leverage, issue of shares, and role duality have non significant association.
Desoky (2009)	Egypt (88 companies)	Independent: Company size, profitability, foreign listing, industry type, ownership structure and legal form Dependent: Internet financial reporting index	Univariate and multivariate linear regression	Study found that company size, profitability, foreign listing and ownership structure are significantly positively associated with the internet financial reporting, while legal form is significantly negatively associated. Findings also

				indicate non-significant association of industry type with the disclosure level.
Garg and Divya (2010)	India (200 companies)	Independent: Company size, profitability, leverage, liquidity, ownership spread, business house, industrial sector and date of establishment. Dependent: Internet disclosure Index	Kruskal-Wallis Test and ANOVA	The results indicated that industry sector, size of the company, association with business house have significant positive association with the extent of information disclosure on websites but age of the company, profitability, liquidity, leverage and ownership spread have non significant association.
Aly et al. (2010)	Egypt (62 companies)	Independent: Size, profitability, leverage, liquidity, industry type, auditor size, foreign listing Dependent: Internet disclosure index	Multiple regression analysis	They found that profitability, foreign listing and industrial type have significant positive association with the amount and presentation formatting of information disclosed on Egyptian companies' web sites. But firm size, leverage, liquidity and auditor size, have non- significant association with corporate internet reporting.
Uyar, A. (2011)	Turkey (43 companies)	Independent: XCORP listing (Istanbul Stock Exchange Corporate Governance Index), industry type,	Multivariate linear regression	They found that XCORP listing firms and size have a significant positive association with the level of disclosing information on

		company size, profitability Dependent: Internet disclosure Index	analysis	the internet while industry and profitability have non-significant association.
Boubaker et al.(2012)	France (529 companies)	Independent: Firm size, ownership dispersion, firm performance, cross-listing, auditor size, leverage, it-industry, and equity offering Dependent: Internet reporting index	OLS regression analysis	The results showed that voluntary disclosures are more suited for the internet than mandatory disclosures. In addition they found that firm size, ownership dispersion, auditor type equity offerings and firms in the IT-sector have significant positive association with the level of internet disclosure but profitability, leverage and cross-listing have non-significant association.
Puspitaningrum and Sari (2012)	Indonesia	Independent: Managerial ownership, block-holder ownership, independent commissioner, audit committee meeting frequencies, audit committee competency, size, profitability, liquidity , and leverage Dependent: Level of internet financial reporting (IFR)	Multiple regression analysis	The result indicated that among corporate governance mechanisms, only audit committee meeting frequencies influence voluntary disclosure of internet financial reporting. This study also found that only size tends to affect the level of internet financial reporting while profitability, liquidity, and leverage did not affect the level of IFR.

Alali and Silvia (2012)	Argentina (84 companies)	Independent: Size, profitability, leverage, growth, big-4 auditor, industry effect and ownership structure Dependent: Internet disclosure index	OLS regression analysis	They found that companies in the transportation and gas, real estate, services and mining industries disclose more financial and non-financial information on their websites than companies in other industries. Moreover they found significant positive association of company size, Merval25 and majority owners with the level of disclosure. Though profitability, Big-4 auditor and leverage do not have significant effect but growth has negative effect on internet reporting practices.
Nurunnabi and Monirul (2012)	Bangladesh (83 companies)	Independent: Company age, profitability , industry type, size of the company, big-4 audit firm, ownership diffusion, audit committee Dependent: Internet disclosure index	OLS regression analysis	They found that the big audit firms and non-family ownership variables have significant positive association with the levels of voluntary disclosure while age, size, profitability, industry and audit committee have non–significant association.

Chapter: 4

Theoretical Framework and Hypotheses Development

4.1 Introduction:

Through the discussion in previous chapters it is clear that the subject matter of this study is corporate internet reporting and its determinants. Chapter one outlines the importance, background and motivation for the research and chapter two represents an overview of the Bangladesh including the economy and legal environment as a context of the study. It is indicated in chapter three that there is a need for more research on the internet disclosure practices and its determinants in emerging capital markets in general and Bangladesh in particular where there is a lack of published research about the internet disclosure practices. This chapter presents the theoretical base and develops the research hypothesis for the study.

The aim of this chapter is to provide critical analysis of the most used theories employed in the corporate reporting literature to give a general idea of different theoretical perspectives and offer a critical evaluation of the various theoretical perspectives adopted in explaining the corporate reporting phenomenon. In section 4.2, different theories and their evaluation are discussed. Section 4.3 presents the empirical evidences of some of the theories and develops a theoretical framework for this study in section 4.4. The hypotheses are developed in section 4.5 followed by a conclusion in section 4.6.

4.2 Theories of Corporate Reporting:

Theory is important as “theories enables us to understand in general terms how the world works, to move around, mentally, among the objects and relationships to which they relate, and to act in ways that, as far as we can tell, will not defeat our reasonable expectations. A theory will not save us from unreasonable expectations nor from the vagaries of chance in any form. A theory will not tell us what to do; but it will tell us what is possible to do and what is not possible to do. In that way it removes countless things from consideration when we are confronted with the necessity of choosing or acting” (Chambers 1996).

The purpose of a theoretical framework is to describe the financial reporting and disclosure practices and the reasons behind non-disclosure. According to Haniffa (1999), these theories seem to be unclear in the sense that all of them are logical and acceptable but none could be nominated as the best theory to explain corporate social reporting and disclosure practice. In this context of disclosure, as an accounting topic, it can be noticed that disclosure literature employs several theories as guidance in explaining disclosure practices. There is no comprehensive theory of disclosure and more work is suggested and called for to understand disclosure practices (Hopwood 2000; Healy and Palepu 2001; Verrecchia 2001). There are some differences that exist between the various theoretical frameworks; as they each attempt to analyse the same problems but from different perspectives, they do share significant commonalities (Solomon 2007).

Different theories, including agency theory, signaling theory, cost benefit analysis have been used to explain company voluntary disclosure (Debreceny et al. 1999; Marston and Shrives 1995). Healy and Palepu (2001) indicated that research on managers' reporting decisions focused on two areas: positive accounting theory and voluntary disclosure. Empirical studies on positive accounting theory typically test whether managers make accounting method changes or accrual estimates as a result of agency costs. Research on voluntary disclosures supplements the positive accounting literature by focusing on stock market incentives for accounting and disclosure decisions by managers. For the purpose of the study, relevant theories are described below.

4.2.1 Agency Theory:

Agency theory has been widely used in disclosure literature (Chow and Wong-Boren 1987; Cooke 1989, 1991, 1992; Firth 1980; Hossain et al. 1994; Nurunnabi and Monirul 2012; Bhuiyan et al. 2007; Akhtaruddin 2005; Aljifri 2008; Marston and Annika 2004). This theory provided a necessary explanation of why the selection of particular accounting methods might matter, and hence was an important facet in the development of positive accounting theory (Deegan 2010). Agency theory attempts to explain accounting practices and standards. The agency problem was first explored in Ross (1973), with the first detailed theoretical exposition of agency theory presented in Jensen and

Meckling (1976). They defined the managers of the company as the ‘agents’ and the shareholder as the ‘principal’. This theory is based on the problems stemming from the separation of ownership and management in the largest corporations. One of the principal assumptions of agency theory is that the goals of the principals and agent conflict.

According to Deegan (2010), this theory focused on the relationships between principals and agents, a relationship which, due to various information asymmetries, created much uncertainty. Such relationship involves the delegation of some decision making authority to managers (Jensen and Meckling 1976). Therefore, managers have power to use all the resources available to the company and consequently have all information about the company. On the other hand owners, who provide the resources, have the power to hire managers for conducting the business and they need information to evaluate the performance of the managers as well as the company. So the problem of information asymmetry arises. It is assumed that individuals’ actions are driven by self- interest to maximize their benefits. So, the theory indicates that there is an interest conflict; or lack of goal congruence; between agents (managers) and the principals (owners); agents may take decisions that maximise their benefits but not necessarily maximise the benefits of owners. Such conflict requires a number of mechanisms to measure and monitor the agent's behaviour and, therefore, leads to agency costs (Abdel Fattah 2008).

Alvarez et al. (2008) indicated that one of the possible ways to reduce those costs is to disclose information about the managers’ actions and the economic reality of the company. With that information, shareholders will be able to monitor managers more appropriately. Consequently, the disclosure of information can serve as a mechanism for control on behalf of companies’ shareholders as well as a mechanism of legitimacy for managers. Agency theory explains why managers voluntarily disclose information. Shareholders will seek to control managers' behaviour through bonding and monitoring activities. These two parties may use the level of disclosure as a way to mitigate the severity of the problem of information asymmetry. Managers have an incentive to signal that they are acting in the interests of owners. On the other hand, owners try to encourage and sometimes force managers to disclose more

information. Therefore, managers may have an incentive to try and convince shareholders. Through greater disclosure, companies attempt to reduce the cost of capital by reducing investor uncertainty (Ball and Foster 1982; Watson et al. 2002).

In the context of disclosure, information asymmetry has been identified as one of the motivations of voluntary disclosure decision (Healy and Palepu 2001). Moreover, agency theory indicates that managers will disclose social information if it increases their welfare, as long as the benefits of this disclosure overweigh its associated costs (Ness and Mirza 1991). Agency theorists argue that corporations are structured to minimize the costs of getting some participants (agents) to do what other participants (principals) desire. Therefore, participants agree to cooperate with each other within the organisation rather than dealing with each other through the market (Donaldson and Preston 1995).

However, a number of authors criticise the assumption of agency theory that individuals act in self- interest to maximise their benefits and suggest that there are internal and external pressures that direct the performance of managers to serve the interests of owners in addition to their interests (Fama 1980; Eisenhardt 1989; Ashton 1991). They indicate that there is an overestimation of managers' motivation to act in the owners' interests. According to Moldoveanu and Martin (2001), there are two types of managerial failures that restrict the agent from acting perfectly towards the principals (shareholders). The first one is the failure of managerial competence related to unwitting mistakes in the discharge of managerial control; the second is, the failure of managerial integrity related to willful actions on the part of managers: this has negative impact on the value of firm's assets. In addition, there are internal and external pressures that direct the performance of managers to serve the interests of owners in addition to their own interests.

Moreover, agency theory ignores the fact that managers have significant motivation to conceal adverse information or artificially enlarge the firm's short term results in order to maximise benefits related to these short term results (Vlachos 2001; Ghazali 2004). According to Deegan (2010), if there is no mechanism to make an agent pay for actions that are undertaken and which

adversely impact on the owners, that agent has an incentive to consume many perquisites, as well as to use confidential information for personal gain at the expense of the principals. Demski (1974) suggests that managers may also have incentives to disclose more information to differentiate themselves from more poorly run companies. Coffee (1984) pointed out that agency theory ignores the fact that some managers have strong incentives to withhold positive information. It is the incentive problems that are at the heart of agency theory. Okcabol and Tinker (1993) indicate that this theory fails to account for non-financial motivations for suppressing disclosure.

Again, agency theory does not assume that individuals will ever act other than in self-interest, and the key to a well functioning organisation is to put in place mechanisms that ensure that actions that benefit the individual also benefit the organisation. One way to align the interests of the manager with those of the owner of the firm might be for the manager to be given a share of profits in the organisation (Deegan 2010).

4.2.2 Signaling Theory:

Signaling is part of the notion of information asymmetry between management and ownership as adopted by Berle and Means (1932), which found that the level of information asymmetry is an important driver of investor uncertainty (Bollen et al. 2006). Signaling theory maintains that corporations could have an interest in providing information as a signal or mechanism that provides the market with additional information on the firm's economic reality so as to change investor expectations and reduce information asymmetries (Baiman and Verrecchia 1996).The information asymmetries have to do with the different amounts of company information available to managers, who have to deal with the daily operations and activities of the firm, and to other individuals, who receive delayed and filtered information from the managers (Alvarez et al. 2008).

The theory shows how asymmetry can be reduced when the party with more information signals it to others (Morris 1987). In such a case, companies have information that investors do not have. Signaling theory was mainly developed by Spence (1973) to explain behaviour in the labour markets but can also help

to explain voluntary disclosures. According to Sakarneh (2011), companies will try to adopt the same level of disclosure as other companies within the same industry: if a company does not keep up with the same level of disclosure as others, it may be perceived by stakeholders to be hiding bad news.

Like to agency theory, the signaling theory also recognises the separation of ownership and management and recognises that the market pressures motivate managers to disclose information. Managers may wish to send signals to interested parties; owners, investors, and governmental agencies in order to distinguish themselves from other companies. In this regard disclosure is considered to be one of the means that can be used. Not only companies with good news have incentives to signal others but also companies with bad news or no information. Managers of companies with bad news may have incentives to disclose the bad news to reduce the reputation costs that may be incurred if they do not disclose this news in the relevant time (Skinner 1994).

Financial information may be exercised by companies to indicate the underlying reality, and to influence external users when making decisions regarding them. It may be argued that only good firms will use this instrument, because the quality of firms can be later observed without difficulty, and firms would be punished by the market if they sent the wrong signals (Morris 1987). However the manager may exercise certain discretion by choosing the timing and extent of information disclosure. Verrecchia (1983) indicates that a manager's decision to disclose or withhold information depends upon the effect of that decision on the price of a risky asset. The manager decides either to withhold or release this signal on the basis of the information's effect on the asset's market price. He pointed out that there is an equilibrium threshold level of disclosure. The manager exercises discretion by choosing the point, or the degree of the information quality, below which he withholds his information, and above which he discloses (Abdel-Fattah 2008).

For managers to signal quality successfully, the signal must be credible. In this case credibility is achieved, as ultimately the true quality of the firm will be verifiable. Verrecchia (1990) showed how a change in the quality of information received by a manager affects the manager's threshold level of disclosure. He

indicated that there is a negative relation between information quality and the threshold level of disclosure. The higher the quality of the information is the lower the threshold level of disclosure will be (Abdel-Fattah 2008).

According to Morris (1987) the contribution of signaling theory is the prediction that higher quality firms will choose accounting policies which allow their superior quality to be revealed, while lower quality firms will choose accounting methods which attempt to hide their poor quality. The assumption of signaling theory that individuals are acting in their own-self interest, as in agency theory, has been criticised. Also, a number of authors criticize the assumption of equal distribution of power. They argue that it is not individuals who exercise power but institutions (Gray et al. 1996 as cited in Watson et al. 2002). A number of authors indicate that the reason for non-disclosure may be that managers do not have information to disclose (Penno 1997) or may be uncertain about the effect of disclosure on the manager's performance (Nagar 1999).

According to the signaling theory, one could expect that only high quality firms use the internet as a medium to publish accounting information. Or at least it can be expected that high quality firms would provide more “content” or more “features” on their websites. Disclosure reduces the information asymmetry towards potential investors, which alleviates the adverse selection problem. Low quality firms might prefer restricting access to accounting data to the more determined users. Craven and Marston (1999) assert that “The very use of the internet might itself be a signal of high quality. It implies that the firm is modern and up to date with the latest technology rather than old and conservative.”

Empirical literature generally indicates that increased disclosure reduces the cost of capital, increases liquidity and increases information intermediation. Debreceny et al. (2002) and Ettredge et al. (2002) relate these findings to the disclosure of financial information on the internet. Singhvi and Desai (1971) argue that higher profitability motivates management to provide greater information because it increases investors’ confidence, which in turn, increases management compensation. It is also argued (Cooke 1989; Wallace et al. 1994; Wallace and Naser 1995) that a highly profitable firm is more likely to signal to the market its superior performance by disclosing more information in its annual

report. However, Lang and Lundholm (1993, p. 251) argue that disclosures are likely to be related to a firm's profitability, only if perceived information asymmetry between managers and investors is high.

4.2.3 Capital Need Theory:

Capital need theory suggests that the main motivation for disclosure is the need to raise capital. Companies may think that greater financial disclosure will reduce investor uncertainty and reduce the cost of new capital (Choi 1973; Cooke 1993; Firth 1980). The prerequisites for the applicability of this theory in explaining disclosure practice are the demand for finance in the form of shares and loans and the existence of capital markets where the raising of finance could be facilitated (Haniffa 1999). To acquire capital more economically, either in the form of shares or loans, companies can use disclosure as a way to help in reducing investor uncertainty as well as information asymmetry.

According to Dierkens (1991), information asymmetry is a significant variable in the case of equity issues as she found direct evidence of the importance of fluctuations of the information asymmetry with respect to information releases such as equity issue announcements and earnings announcements. Empirical studies on voluntary disclosure suggest that managers voluntarily enhance the visibility of their firm's financial profiles to: (1) reduce agency costs or contracting costs (Chow and Wong-Boren 1987); (2) reduce its cost of capital (Botosan 1997; Sengupta 1998), and (3) enhance the value of the firm (King et al. 1990; Yeo and Ziebart 1995; Frankel et al. 1999).

Alexander and Archer (1995) signify that the main role of financial reporting is to reduce information asymmetries in capital markets, and so it may improve the market efficiency. These would exert pressure on companies to expand information availability to a wider audience, such as potential investors interested in buying and selling shares and also specialist advisors who helped shareholders and potential investors in making share-trading decision. Increasing compliance with mandatory disclosure and the relative amount of voluntary disclosure increases the ease by which new capital can be raised (Cooke 1993; Marston and Shrives 1995). According to Meek and Gray (1989), disclosing less information by the company or non-disclosure of information

may be more expensive for funds because they may be perceived as more risky. More disclosure reduces the cost of capital, reduces information risk, and improves the share price (Diamond and Verrecchia 1991; Cooke 1993; Hossain et al. 1994; Botosan 1997, Sengupta 1998; and Healy and Palepu 2001) and this is possible by making disclosure that will enhance the company's image and reputation in the eyes of potential investors (Gray and Roberts 1989).

4.2.4 Legitimacy Theory:

This theory proposes that corporate disclosures are made as reactions to environmental factors (including social, economic and political) in order to legitimise corporate actions. Legitimacy is considered to be 'a generalised perception or assumption that the actions of the entity are desirable, proper, or appropriate within some social constructed system of norms, values, beliefs and definition' (Suchman 1995, p.574). Legitimacy theory is based on the notion that the organisation has a social contract; with its society; where it agrees to act according to socially desired actions (Guthrie and Parker 1989). Thus, to maintain their legitimacy, companies may disclose information voluntarily to try and improve communication with society; trying to ensure that society believes they are operating within society's value system.

The idea of legitimacy can be directly related to the concept of a social contract and it is believed that an organisation's survival will be threatened if society perceives that the organisation has breached its social contract (Milne and Patten 2002). If the society is not satisfied with the operating system of the organisation, then the society will effectively revoke the organisation's contract to continue its operations. So legitimacy is regarded as a resource on which an organisation is dependent for its survival.

By disclosing more information voluntarily, managers can communicate with society and its stakeholders and can influence external perception about their organisation. As such, managers will try to legitimise corporate activities and at the same time to legitimise their managerial positions. Legitimacy theory has been employed in disclosure literature to explain disclosure practice. The underlying premise in legitimacy theory, as well as political economy theory from which it stems, is that society, politics and economics are inseparable and economic issues cannot meaningfully be investigated in the absence of

considerations about the political, social and institutional framework in which the economic activity takes place (Rizk 2006).

Legitimacy theory focuses on society and compliance with the expectations of society as embodied in the social contract. However, society is clearly made up of various groups having unequal power and ability to influence organisations and other groups. Moreover, it may be difficult to measure the concepts of society's values and ethics when forming testable hypotheses. However, the social values in which a company exists affect the manner used by that company to operate and report its performance (Gray et al. 1995). Therefore, it is assumed that considering the social and political environment may be helpful to address the motivation for corporate social choices (Adams et al. 1998).

4.2.5 Stakeholder Theory:

Stakeholder theory involves the recognition and identification of the relationship between the company's behaviour and the impact on its stakeholders (Ansoff 1965). While agency theory concentrates only on the relationship between managers (agent) and shareholders (the principal), stakeholder theory considers the relation between managers and all stakeholders (the principal, including as shareholders, employees, customers, suppliers, and government). Based on stakeholder theory, a variety of stakeholders are involved in the organisation and each of them deserves some return for their involvement (Crowther and Jatana 2005). Stakeholders are persons or group that have or claim, ownership rights or interests in a corporation and its activities, past, present, or future. Such claimed rights or interests are the result of transactions with, or actions taken by, the corporation, and may be legal or moral, individual or collective.

Stakeholders can be classified into two categories: the first is a primary stakeholder group which includes those who are essential to the continuation of the company as a going concern, such as shareholders, employees, suppliers, investors and the government. The second is a secondary stakeholder group, which includes those who are not essential to the survival of the company, but they affect or are affected by the company: for example the media. They have the ability to organise public opinion in favour of, or in opposition to, a

corporation's performance and thus they can cause significant damage to a corporation and as such, are still a force to be dealt with (Rizk 2006).

According to this theory, managers should assess the importance of every group of stakeholders and try to satisfy them. For the purpose of benefit maximisation, managers must work on behalf of all stakeholders not only the shareholders. This is done by offering more information, especially voluntary disclosure, to gain the support and approval of these stakeholders. Freeman (1984) also suggested that stakeholder theory explains the relationship of the firm to its external environment. Consequently, shareholders will benefit, as the main stakeholder, in the long run.

On one hand, Sternberg (1997); a proponent of agency theory; criticizes stakeholder theory based on some points. The author argues that this theory is incompatible with business and also with corporate governance. It rules out the objective of business which maximise long term owner value. Also, the theory implies that a company should be accountable to everyone not just to its owners and encourages managers to violate their prior obligations to owners. In addition, he indicated that balancing stakeholder benefit is an unworkable and unjustifiable objective and that the theory undermines private property and accountability. But Turnbull (1997) did not support the first two criticisms of Sternberg and argued that stakeholder relationships can legitimate and protect private property, agency, and wealth.

4.3 Evaluation of Theories:

The above three theories, agency theory, signaling theory and capital market theory, are derived from the pure economic approach. This approach places primary importance and concentration on the interests of two parties only, shareholders and managers. Based on the theory of *'right to know'***,** Bedford (1973) suggested that company shareholders as co-owners of the company have a right to know everything they desire about the company. Haniffa (1999) also indicates that disclosure of income by companies implies that businesses operate for the benefit of the owners or shareholders. So, from this point of view, the theory falls short of recognising the existence of other stakeholders, such as government, taxation authorities, consumer groups and other interested

parties in the society. Furthermore, this theory emphasises profit maximisation as a main goal of managers and failed to highlight the other goals pursued by the managers in reality.

From the above discussion of agency and signaling theories it can be seen that there is considerable amount of overlap between the two. In fact Morris (1987) explored whether these two theories are consistent, equivalent or competing, by examining the necessary and sufficient conditions for both of them. He points out that as the sufficient conditions for signaling theory are consistent with those of agency theory, the two theories are consistent: that is, if one theory is 'correct' the other theory may also be 'correct'. However, as information asymmetry, a necessary condition for signaling theory is not a necessary condition of agency theory, signaling theory is not implied by agency theory and therefore they are not equivalent. Morris suggested that this consistency opens up the possibility of joining the two theories to provide fresh insights into the principal-agent problem, and into firms' accounting policy choices.

The legitimacy theory and the stakeholder theory provide an explanation of disclosure practices but both suffer from some limitations. While legitimacy theory explains and predicts that companies use disclosure to legitimise their business, it is insufficient to fully explain disclosure practices. Rizk (2006) questioned the applicability of legitimacy theory to developing countries that have a low level of social disclosure. On the other hand, stakeholder theory implies that managers identify the importance of stakeholders based on their power. Stakeholder theory can be viewed as an extension of the traditional agency model: instead of simply restricting the focus of analysis to the relationship between manager and shareholders, it extends this to consider the relationship between managers and all stakeholders, i.e. managers being viewed in this sense as agents of all stakeholders (Hill and Jones 1992). This aspect of stakeholder theory has been subjected to the greatest criticism.

Abd El Salam (1999) indicated the applicability of disclosure theories in developing countries. According to the author, the most common disclosure theories were originated in western countries and have been based on the assumption of efficient capital markets. The author also suggested that both

theoretical models of agency and capital need appear to be applicable to the findings in developing countries studies, but the applicability of signaling theory is not clear due to several reasons: investors may be less sophisticated or there may not be available data. Due to the limitations of an economic approach, a number of studies employ the political economic approach which considers relations with society and other institutions.

4.4 Developing a Theoretical Framework:

The theoretical discussion has shown that there is no one theory that can fully explain disclosure practices. Moreover, it is clear that there is overlap among these theories. Reviewing these theories indicates that each theory takes a look at disclosure from a different perspective. While the agency theory, signaling theory, and capital market theory focuses on parties related closely with economic activities and assumes that individuals are motivated by economic self interest only, legitimacy theory and stakeholder theory focuses on those parties in addition to governmental agencies and assumes that people are motivated by power and economic self interest. Furthermore, these theories assume that people are motivated by societal values so it considers all parties inside and outside the company.

When explaining why particular disclosures are made, or in describing how organisations should make particular disclosures, reference is made to a particular theoretical perspective (Rizk 2006). Cormier et al. (2005) argued that disclosures are a complex phenomenon that cannot be explained by one single theory. Moreover, some theories may be more appropriate and relevant to some countries than others (Mallin 2010). Choosing one theory does not mean that it has some absolute superiority over the other theories. For example, Agency theory, signaling theory and cost- benefit analysis can all be used to indicate that there may be a positive relationship between size and disclosure (Marston 2003). Nurunnabi and Monirul (2012) employ agency theory, signaling theory and innovation diffusion theory to investigate empirically, some company characteristics as determinants of voluntary disclosure of internet financial reporting (IFR) in Bangladesh.

The current study addresses the mandatory and voluntary disclosure practices on the internet and their determinants by the listed companies in Bangladesh, therefore, agency theory, signaling theory and capital need theory will be appropriate for the study. As corporate internet reporting can enhance the monitoring role of accounting by providing investors with easier, faster and more cost-effective access to accounting data on corporate performance, it may possible that in this classic set-up model a risk adverse agent may voluntarily and frequently provide information through internet reporting in order to reduce monitoring costs and to encourage outside investors to invest in the company. Thus it helps to reduce the adverse effect of information asymmetry which is an important driver of investors' uncertainty.

Again, firms may use internet disclosure to keep pace with other firms in the same industry. Craven and Marston (1999, p. 323) stated that: "the very use of the internet might itself be a signal of high quality. It implies that the firm is modern and up-to-date with the latest technology rather than old fashioned and conservative." It is also argued that managers of profitable firms increase the level of disclosure to signal to investors that the firm is profitable and to support their continuation and compensation (Oyeler et al. 2003, p. 36). Debreceny et al (2002), Ettredge et al. (2002) also indicated that a company generally tries to distinguish itself from others by signaling its specific qualities to investors. In addition, cost benefit approach is also helpful but according to Marston and Leow (1998) cost benefit analysis cannot perhaps be termed a theory of disclosure because the costs and benefits themselves can be predicted by theory or theories such as agency theory. Forker (1992) used a cost benefit analysis to build a predictive model for disclosure of share options but in doing this he used agency theory to justify some of the hypotheses.

Marston and Leow (1998) used agency theory, signaling theory and cost benefit analysis to investigate the relationship between company characteristics and internet disclosure. Marston and Annika (2004) also used agency theory, signaling theory and cost-benefit analysis to examine the association between five firm-specific factors and the level of web disclosure by German companies. Watson et al. (2002) investigated whether the voluntary disclosure of ratios, in corporate annual reports, can be explained by agency theory and signaling

theory and suggested that if managers can reduce agency costs by improving disclosure quality then agency theory can explain why managers seek to disclose accounting ratios. Hossain et al. (1994) also applied agency theory as the theoretical framework for an empirical analysis of the levels of voluntary disclosure practice by the companies listed on the Kuala Lumpur Stock Exchange.

As stakeholder theory does not utilize the concept of information asymmetry which is the main focus of internet reporting and legitimacy theory is based on a social contract between the company and society. Legitimacy theory is most successful in explaining social and environmental reporting (Gray et al. 1995 and Milne 2002). This study focuses on overall disclosure, including social and environmental but not only social or environmental disclosure. That is why it is assumed that stakeholder theory and legitimacy theory will not support the study.

In summary, this study supports agency theory, signaling theory, and capital need theory to develop the entire research hypothesis. It is assumed that organisations disclose mandatory and voluntary information on the internet for three reasons: firstly, to reduce the information asymmetry; secondly, to signal to their market about their quality and performance at a lower cost; and thirdly, to reduce the capital costs and to increase the company's market value at a lower cost of elaborating and communicating the voluntary information. However, it must be noticed that choosing these theories does not mean that they have some absolute superiority over other theories. Each theory has some inherent limitation and their focus regarding disclosure practice is also different. So this study fails to support that a single theory can alone be used to accurately capture, convey and explain the reporting practices.

Therefore, it is the intention of the study neither to focus on any single theory nor to discard any of these theories rather to carry them throughout the thesis with the aim of revisiting them in light of the results of the study. These theories are used to develop the hypotheses in the next section, which will be empirically tested at a later stage. The most frequently identified determinants are: firm size, audit firm's international link, multinational parent, profitability, leverage,

liquidity, industry type, board size, independent director in the board, market category, dual leadership structure, ownership structure, and company age. A brief review of these variables is provided below.

4.5 Hypothesis Development:

4.5.1 Firm Size:

Many disclosure studies (e.g. Cooke 1991, Ahmed and Nichollas 1994) suggest that there is a significant relationship between firm size and the extent of voluntary disclosure. Singhvi and Desai (1971) and Buzby (1975) describe three reasons for an association between disclosure and size. Firstly, larger firms generally have a more diverse product range and more complex distribution networks than smaller firms. As a result, larger and more complex management information systems and databases are required for management control purposes. Consequently, disclosure costs may be generally lower for larger firms. Secondly, larger firms make more extensive use of capital markets for external financing relative to smaller firms. Such firms can increase the marketability of their securities in capital markets, and obtain capital more easily and cheaply through more extensive disclosure. Finally, smaller firms may be more likely than larger firms to consider that full disclosure of information could endanger their competitive position.

According to Bonson and Thomas, (2002) large companies may be more able to access financial markets if they disclosed more information online. Some studies point out that the proportion of disclosure costs is smaller for larger companies (Lang and Lundholm 1993; Verrecchia 2001). It is argued that the larger the company, in terms of numbers of shareholders, the larger the informational gap or information asymmetry among investors on the one hand and between investors and the management on the other; so more disclosure might be used to reduce the information asymmetry problem (Debreceny et al. 2002). Larger firms have an increased need for external capital. As a result, by disclosing more information in internet financial reporting, the managers will reduce the agency cost to appear trustworthy to the shareholders: agency theory would be justified in this situation (Nurunnabi and Monirul 2012). With low incremental costs, large firms are more likely to supplement traditional financial disclosure with internet reporting to benefit from decreasing agency

costs. The benefits of such disclosures increase with firm size (Oyelere et al. 2003).

Wallace and Naser (1995) argue that larger firms naturally attract a large number of suppliers, customers, and analysts, which consequently increases the demand for information about their activities. Many of the empirical studies investigate the relationship between the size of the companies and online disclosure and found a positive association. For example, Ashbaugh et al. (1999), Craven and Marston (1999), Brennan and Hourigan (1999), Debreceny et al. (2002), Ettredge et al. (2002), Marston (2003), Marston and Annika (2004), Oyelere et al. (2003), Xiao et al. (2004), Bonson and Thomas (2006), Bollen et al. (2006) and Al-Shammari (2007), Desoky (2009), Garg and Divya (2010): however, there are a number of notable exceptions, e.g., Lau (1992); Malone et al. (1993); Ahmed and Nicholls (1994); and Ahmed (1996).

Although there are several proxies of company size used in prior research, including number of shareholders (Cooke 1991), total assets (Ashbaugh et al. 1999; Ismail 2002; Aly and Simon 2008), turnover (Craven and Marston, 1999; Ismail 2002), total sales (Aly and Simon, 2008) and market capitalisation (Debreceny et al. 2002; Ettredge et al. 2002; Bollen et al. 2006), the disclosure literature does not provide a theory or criterion to choose among different proxies. However, there is no criterion to choose the best proxy of firm size (Hassan et al. 2006). Drawing on the theoretical and empirical evidence from prior studies, the current study can expect a positive relationship between the firm size and the level of mandatory and voluntary disclosure on the internet by the listed companies in Bangladesh. The study measures firm size by a log of total assets.

Hypothesis – H1: There is significant positive association between firm size and the level of disclosure on the internet.

4.5.2 Profitability:

Profitability as a measure of performance is considered to be one of the most common explanatory variables that have been used in disclosure literature. A number of theoretical and empirical bases can be observed. Signaling theory suggests that profitable companies have an incentive to disclose more

information, to signal the firm's profitability to investors to support management continuation of their positions and levels of compensation (Oyeler et al. 2003), and to raise capital at the lowest price (Marston and Annika 2004). Companies with bad news may be motivated to disclose more information to reduce the risk of legal liability and severe share devaluation or loss of reputation (Skinner 1994).

Agency theory also suggests that managers of profitable companies have an incentive to disclose more information in order to boost their compensation (Abd El Salam 1999). Managers can use disclosure to deal with the problem of information asymmetry; they look to improve the corporate image and to maintain their positions (Singhvi 1968). Singhvi and Desai (1971) found a positive relationship between the rate of return and the quality of disclosure. Their results suggest that the firm profitability can be regarded as an indicator of good management, as management tends to disclose more information when the rate of return is high. Based on this, it may be argued that profitable companies have extra financial resources to disseminate financial information voluntarily or in compliance with additional regulations imposed: they might have incentives to show the public and stakeholders that they are more profitable than their counterparts in the same industry.

Previous researchers used a number of profitability measures. They include net profit to sales, earnings growth, dividend growth and dividend stability (Cerf 1961), rate of return and earnings margin (Singhvi 1967 and Singhvi and Desai 1971), and return on assets (Belkaoui and Kahl 1978). Empirically, the prior studies provide mixed evidence of the relation between profitability and the level of disclosure. While some studies show a significant positive association between profitability and disclosure (such as, Singhvi 1968; Ng and Tai 1994; Patton and Zelenka 1997; Owusu-Ansah 1998; Haniffa and Cooke 2002; Naser et al. 2002, Desoky 2009) other studies report a negative association between profitability and disclosure (such as: Wallace and Naser 1995; Inchausti 1997; Chen and Jaggi 2000; Xiao et al. 2004).

On the other hand, Wallace et al (1994), Raffounier (1995), Meek et al (1995), Hackston and Milne (1996), Oyelere et al. (2003), Marston and Anika (2004),

Garg and Divya (2010), Uyar (2011), and Puspitaningrum and Sari (2012) found no significant association between profitability and disclosure. Ashbaugh et al. (1999) found that the relationship was non-significant. The results of previous research are inconclusive and these motivate this research to test this relationship in the emerging economy. Therefore, the third hypothesis is:

Hypothesis – H2: There is significant positive association between firm's profitability and the level of disclosure on the internet.
Hypothesis - H2a: There is significant positive association between firm's profitability measured by return on equity and the level of disclosure.
Hypothesis – H2b: There is significant positive association between firm's profitability measured by return on asset and the level of disclosure.

4.5.3 Audit Firm's International Link:

A number of prior disclosure studies test audit firms as a variable that may affect the level of disclosure. The audit firm responsible for reporting to shareholders can significantly influence the amount of information disclosed in the corporate annual report (Belkaoui and Kahl 1978; Ahmed and Nicholls 1994, and Owusu-Ansah 1998). Healy and Palepu (1993) assert that managers can improve their communication with investors (owners of the firms) by developing disclosure strategies. To reinforce its credibility, a firm has greater motivation to choose appropriate reporting strategies to act as quality signal to the market. It is proposed that such a signal would include the use of a Big-4 audit firm. It has been argued that larger, well known audit firms may be able to exercise greater influence and they may be associated with higher disclosure levels (Firth 1979).

According to signaling theory, audit firm may benefit from the higher level of disclosure in the annual reports of its clients as a signal of its own quality and reputation. The client company may attempt to improve the appearance of its financial position and results of operations and errors and inadequate disclosure, which support such motives and may be considered to be purposely caused by the management of the company (Hossain 1999).Therefore, auditing firms may support and encourage their clients to comply with mandatory

disclosure requirements and to increase the extent of information voluntarily disclosed (Ahmed and Nicholls 1994; Inchausti 1997; Abd El Salam 1999).

In Bangladesh, the law does not permit Big 4 or any foreign auditing firms: they only can perform this audit work through the affiliation with a local firm. To enhance the reputation of its capital market, Bangladesh attracted the international Big 4 audit firms to operate through a local audit firm (Kabir et al. 2011). So, the audit firms in Bangladesh can be classified into two groups: local audit firms with international affiliations with the Big 4 and local audit firms without international affiliations with the Big 4. At present four local audit firms are members of the Big 4 audit firms; Rahman Rahman Huq (RRH), Hoda Vasi Chowdhury, A Qasem and Co. and S F Ahmed are linked with KPMG International, Deloitte Touche Tohmatsu, Price Waterhouse Coopers and Ernst and Young respectively.

Haque (1984) indicated that in Bangladesh, only large audit firms enjoy the privilege of choosing the clients and the audit job. In practice, the auditor's reputation or quality is apprehended by his belonging to the major audit firms named Big 4 (Brown et al. 2010). Several authors advocated that the financial information is more reliable for BIG 4 clients in comparison with other companies (Teoh and Wong 1993; Becker et al. 1998). Al-Shammari's (2007) findings supported this inference with a positive relationship between larger auditing firms and the level of disclosure in internet financial reporting. Some studies have examined empirically the relation between the characteristics of the audit firm (size of audit firm or international link of the auditing firm) and the extent of internet financial reporting and found positive association between the audit firm size and the level of disclosure. However, there is also empirical evidence of no significant relation between the size of the firm and the extent of disclosure (Xiao et al. 2004). The authors argue that affiliation with a Big 4 international accounting firm may not improve the quality of the audit provided by the local affiliate vis-à-vis other local audit firms unless there is market demand for quality differentiated audits and a strong monitoring and enforcement regime in place.

In prior research, a positive association between audit type and disclosure has been found (Ahmed and Nicholls 1994; Raffournier 1995; Bonson and Thomas 2006; Nurunnabi and Monirul 2012). Other researchers found non-significant association (Hossain et al. 1995; Abd El Salam 1999; Wallace et al.1994; Aly et al. 2010; Alali and Romero 2012). Based on these arguments, this study hypothesises that:

Hypothesis – H3: There is a significant positive association between firms audited by a local audit firm with international affiliations to the Big 4 and the level of disclosure on the internet.

4.5.4 Industry Type:

Mitchell et al. (1995) found that the disclosure of financial information is affected by the industry to which the firm belongs. Industry type has been used in prior studies as a determinant of internet reporting. For example, Lymer (1997); Ismail (2002); Debreceny et al. (2002); Oyeler et al. (2003); Xiao et al. (2004); Bonson and Thomas (2006); Hussainey and Al-Nodel (2008); Aly et al. (2010); Garg and Divya (2010) found a significant positive association between industry type and the extent of internet reporting while Nurunnabi and Monirul (2012) found negative association with the level of disclosure. In contrast, Craven and Marston (1999) found no association between the two variables. This may be due to the fact that different industry classifications were used in prior research.

Wallace and Naser (1995) argue that differential levels of disclosure of similar items in financial reports published by firms in different industries may arise from the adoption of industry-related disclosures. Differences in disclosure levels between industries could also be attributed to the high level of voluntary disclosure by a dominant firm within an industry, which leads to a bandwagon effect (Cooke 1989). Signaling theory explains that companies within the same industry tend to adopt the same level of disclosure. If a company within an industry fails to follow the same disclosure practices, including internet disclosures, as others in the same industry, then it may be interpreted as a signal that the company is hiding bad news (Craven and Marston, 1999).

Evidence supporting an association between industry and the extent of financial information provided on corporate websites was recently provided by Ettredge et al. (2001). Their results reinforced comments obtained by the researchers from a sample of Investor Relations directors that they monitored competitor's websites to benchmark their own site content and to avoid their company being perceived as "backwards" relative to industry peers. On the other hand, some studies provide evidence of non significant association between the industry type and the extent of disclosure (Wallace et al. 1994; Raffournier 1995; Inchausti 1997; Naser et al. 2002; Eng and Mak 2003; Alsaeed 2006; Brennan and Hourigan 1999; Marston 2003; Al-Shammari 2007; Juhmani 2008; Desoky 2009).

Hypothesis – H4: There is significant positive association between industry type and the level of disclosure on the internet.

4.5.5 Multinational Parents:

It is generally believed that Multinational Corporation (MNC) affiliation status affects the level of information disclosure. As foreign listing status extends the dispersion of shareholders, which, in turn, increases the information asymmetry between managers and shareholders because ''foreign'' shareholders do not understand the disclosure rules of the company's home country. This is likely to result in the need for additional disclosure requirements that will provide more information than purely domestically listed companies: this is to comply with the regulation of foreign stock markets if their requirements are greater than, or different to, those of their domestic exchanges (Cooke, 1992). Ahmed and Nicholls (1994) found that subsidiaries of multinational companies showed a higher degree of compliance to disclosure requirements. In another study on Bangladeshi companies Ahmed (1996) found that multinationality is the significant predictor of disclosure levels while Karim and Jamal (2005) found negative significant association. MNC's are expected to demand more information because of various reasons associated with emerging economies (Owusu-Ansah, 1998).

There are some reasons for disclosing more information by the subsidiaries of multinational corporations operating in developing countries as they are

expected to observe higher standards of reporting. Firstly, they have to comply with the regulations of not only the host country but also the parent company where substantially higher standards of accounting and reporting are maintained (Karim and Jamal 2005). Secondly, the demand for information is expected to be higher from foreign investors due to the geographical separation between management and owners (Bradbury 1992; Craswell and Taylor 1992). Thirdly, they are under closer scrutiny from various political and pressure groups within the host country that view them as sources of economic exploitation and agents of imperialist power (Ahmed and Nicholls 1994). Finally, diffusion of ownership has been empirically found to be an important variable in explaining the variability of corporate financial disclosure (Leftwich et al. 1981; Craswell and Taylor 1992; Hossain et al. 1994), and the demand for information is expected to be greater when foreign investors hold a high proportion of shares.

In respect of internet disclosure it seems intuitively appealing to suggest that a company which has gone to the trouble of listing on an overseas exchange is quite likely to use the internet to communicate more economically and quickly with investors and potential investors. Although disclosure can reduce the adverse effects of information asymmetry, disclosure activities have costs. Traditional paper-based disclosure has important limitations and associated costs. With the increase in investor geographic dispersion, the paper form has become increasingly expensive and limited in capacity to reach the users of information. In contrast, Internet disclosure can be cost effective, fast, flexible in format, and accessible to all types of users within and beyond national boundaries: it provides potential international investors with immediate access to both financial and non-financial information concerning the company's affairs at relatively little cost. Based on these arguments, this study hypothesises that:

Hypothesis – H5: There is significant positive association between the multinational company influence and the extent of disclosure.

4.5.6 Leverage:

The degree to which a firm's financial structure is geared has been used in a few disclosure studies to examine if there is any association between gearing

ratio and disclosure levels. Highly leveraged firms have a wider obligation to disclose the information, especially financial information in order to convince their long-term creditors that they have enough sources to fund the business (Mohamed et al. 2009). Agency theory has largely been used to explain the relationship between firm leverage and corporate disclosure. It is argued that as leverage increases, there are wealth transfers from fixed claimants to residual claimants. As debenture holders are able to "price-protect" themselves, managers and shareholders have an incentive to voluntarily increase the level of monitoring, such as by increasing the disclosure of additional information about the firm activities (Myers 1977; Schipper 1981).

Management could voluntarily disclose on the internet to allow creditors to monitor constantly the affairs of the company and help them assess the ability of the company to pay its obligations on time. Debreceny et al. (2002) observed that increases in the debt-equity ratio create agency costs. Ismail (2002) added that although there are extra costs associated with dissemination of corporate information on the internet, this dissemination might provide more up-to-date reliable information to creditors and would, in return, reduce agency costs.

Empirical evidence regarding the association between leverage and internet reporting is inconclusive. A positive association was found by Ismail (2002); Laswad et al. (2005) Momany and Al-Shorman 2006; Xiao et al. 2004 while Debreceny et al. (2002); Oyelere et al. (2003); Debreceny and Rahman (2004); Alvarez et al. (2008); Ezat and Ahmed (2008); Puspitaningrum and Sari (2012); Alali and Romero (2012) found non significant association. According to Oyelere et al. (2003) leverage does not explain the decision to use internet for corporate financial reporting. They explained that this may be due to differences between internet reporting and the traditional print-based financial reporting environment and culture, manifested in the differences of costs, benefits and demand and supply structures of the two environments. These conflicting results provide genuine incentives for further investigation of this relationship. So the hypothesis is:

Hypothesis – 6: There is significant positive association between the leverage and the level of internet reporting for non-financial companies.

4.5.7 Liquidity:

A high liquidity ratio is an indicator of good management performance. Accordingly, companies with higher liquidity ratios are expected to disclose more information. Some of prior disclosure studies use signaling theory to explain the relation between liquidity and disclosure. Abd El Salam (1999) argued that companies, according to signaling theory, will disclose more information if their liquidity ratio is high, to distinguish themselves from other companies with less favourable liquidity. The concern that regulators, investors, and other users have regarding companies' going concern status, may motivate highly liquid companies to make their high levels of liquidity known through voluntary disclosures (Wallace and Naser 1995; Owusu- Ansah 1998). The use of Internet for providing financial information may be an expression of management's confidence in a company's solvency and future prospects.

On the other hand agency theory suggests that companies with a low-liquidity ratio may provide more information to satisfy the information requirements of shareholders and creditors. It may be worth noticing that managers may consider the balance between profitability and liquidity when they decide the level of disclosure. According to stakeholders, managers may be motivated to disclose more information about liquidity.

Several studies have examined the relationship between liquidity and the extent of disclosure. However, again the results are mixed. For instance, Oyelere et al. (2003) found that liquidity is considered one of the primary determinants of internet financial reporting among New Zealand companies, and found a positive relationship between company liquidity and voluntary use of internet reporting. Moreover, Ezat and Ahmed (2008) also found significant positive association. However, Wallace et al. (1994) found that companies with lower liquidity provide more information in their annual reports. Other disclosure studies have found no association between disclosure and liquidity (Ahmed and Courtis 1999; Garg and Divya 2010; Puspitaningrum and Sari 2012).

Hypothesis – 7: There is significant positive association between firm's liquidity and the level of disclosure on the internet by the listed companies of Bangladesh.

Hypothesis – 7a: There is significant positive association between firm's liquidity measured by current ratio and the level of disclosure on the internet
Hypothesis – 7b: There is significant positive association between firm's liquidity measured by quick ratio and the level of disclosure on the internet.

4.5.8 Market Category:

Stock exchange security categories are all significantly associated with the extent of disclosure (Karim and Jamal 2005).The first security category in Bangladesh "Group A" and "Group B" was introduced from July 2, 2000 based on financial strength and performance to give clear information to investors for taking informed decision. DSE has further categorised the securities by introducing "Group Z" which came into effect from September 26, 2000. The Stock Exchange introduced another company category "Group G" on June 30, 2002. The categorisation greatly helps the investors in choosing companies before making investment decisions. N Category, the most recent, was launched through an order of SEC on July 3, 2006. Listed companies have been categorised on the basis of the regularity of their holding AGMs and/or payment of dividends. This variable was examined by Karim and Jamal (2005) and they found a significant negative association with the level of disclosure. This implies that the disclosure level was higher for a company whose security(ies) is(are) not categorised as Z category securities,

"A' Category: These categories of companies are regular in holding the Annual General Meetings and have declared dividends at the rate of 10 percent or more in a calendar year. (Mutual Funds, Debentures and Bonds are being traded in this Category)

"B' Category: These companies are regular in holding the Annual General Meetings but have failed to declare dividends at least at the rate of 10 percent in a calendar year.

"Z' Category Companies: Companies which have failed to hold the Annual General Meetings or failed to declare any dividend or which are not in operation continuously for more than six months or whose accumulated loss after adjustment of revenue reserve, if any, is negative and exceeded its paid up capital.

"G' Category Companies: The Companies which are operating as Greenfield Companies.

"N' Category Companies: All newly listed companies except Greenfield companies will be placed in this category and their settlement system would be like B-category companies.

Hypothesis – 8: There is significant negative association between the 'Z' category company and the level of disclosing information on the internet.

4.5.9 Independent Directors on the Board:

Board independence is an important element in monitoring the corporate financial accounting process (Klein 2002) and affecting the reliability of financial reports (Anderson et al. 2004). A high percentage of independent directors on the board enhances the monitoring of managerial opportunism and reduces management's chance of withholding information. Empirical evidence suggests a positive association between corporate disclosure and board independence. Beasley (1996) finds that the proportion of independent directors on the board is positively related to the board's ability to influence disclosure decisions. Cheng and Courtenay (2006) found that boards with a larger proportion of independent directors are significantly and positively associated with higher levels of voluntary disclosure in Singapore. In addition, Abdelsalam and Donna (2007), Adams et al. (1998) and Chen and Jaggi (2000) found a positive relationship between a board with a higher proportion of independent directors and comprehensiveness of corporate disclosure. Based on findings from the largest 300 Chinese companies, Xiao et al. (2004) suggest that internet financial reporting format and disclosure of information not required by the China Securities Regulatory Commission are positively associated with the proportion of independent directors.

Ajinkya et al. (2005) provide evidence on the relation between board independence and voluntary disclosure. They find that firms with a greater percentage of outside directors are more likely to issue earnings forecasts (proxy for voluntary disclosure) and to make more frequent forecast disclosures and conclude that ''monitoring mechanisms are related to the extent and quality

of discretionary information a manager discloses". In contrast to the above findings, Eng and Mak (2003) find that increased presence of outside directors is associated with reduced disclosure using a sample of Singapore firms. Gul and Leung (2004) also report a negative association between independent directors and voluntary disclosures using a sample of Hong Kong companies. These findings suggest that independent directors play a substitute-monitoring role leading to a decrease in the demand for additional disclosure. But Haniffa and Cooke (2002) and Ho and Wong (2001) did not find any significant relationship. Depending on the mixed results provided by previous studies, the next hypothesis is:

Hypothesis – 9: There is significant positive association between the number of independent directors in the board and the level of internet reporting.

4.5.10 Dual Leadership Structure:

Role duality exists when the chief executive officer (CEO) is also the chairman of the board. Role duality creates a strong individual power base, which could affect the effective control exercised by the board (e.g. Jensen and Meckling 1976; Fama and Jensen 1983; Donaldson and Davis 1991; Whittington 1993) and enables the CEO to act rapidly and provide strong leadership (Brickley et aI. 1997) as it is a full-time position and is responsible for the daily management of the company as well as setting and implementing company strategies. On the other hand, the position of the chair is usually part time and the main responsibility is to ensure the effectiveness of the board (Weir and Laing 2001). Moreover, the dual role CEO and chairman is in a better position to make good decisions due to his better knowledge about the firm.

According to Gandia (2008), the CEO presides over the executive board and the chairman presides over the supervisory board, and these two roles will always be held by different people: this ensures a distinction between management by the executive board and governance by the supervisory board allowing for clear lines of authority. The aim is to prevent a conflict of interest and too much power being concentrated in the hands of one person. However, some researchers suggest that the existence of role duality improves the board's effectiveness allowing good control over the board and the selection of

its members and reporting (Eisenhardt 1989; Dahya et al. 1996; Rechner and Dalton 1991; Donaldson and Davies 1991). Forker (1992) found positive significant association and argued that role duality increases the monitoring quality and improves the level of disclosure. Nandi and Ghosh (2012) and Gao and Kling (2012) also found significant positive association.

From the point of view of agency theory, the efficacy and efficiency of the board can be compromised if the position of president and chairman of the board is held by the same person (Blackburn 1994). This concentration of power can prejudice the corporate governance disclosure of the company, generating information of a low quality (Forker 1992). A number of studies provide evidence of a negative significant relationship of role duality with the extent of voluntary disclosure in Malaysia and Hong Kong (Haniffa and Cooke 2002; Gul and Leung 2004). On the other hand, some studies conclude that role duality is not associated with the level of voluntary disclosure (Arcay and Vazquez 2005; Cheng and Courtenay 2006; Ghazali and Weetman 2006; Abdel-Fattah 2008; Ezat and Ahmed 2008).

Hypothesis – 10: There is significant positive association between the role duality and the level of internet reporting.

4.5.11 Board Size:

The number of directors on the company's board should play a critical role in monitoring of the board and in taking strategic decisions. The majority of good governance codes consider that the board must be formed by a "reasonable" number of members, since the optimal number depends on their efficiency in the fulfillment of their supervisory functions (Gandia 2008). Some studies argue that a large board assists in performing more monitoring, providing companies with the diversity that help them in providing critical resources and eliminate environmental uncertainties, alleviating the dominance of the CEO, and increasing the pool of expertise that yields from the diversity of the board (Singh et al. 2004; Yermack 1996). Other studies illustrate that a large board could cause more conflict between the members of the board and delay or avoid critical decisions. In addition, a large board causes poorer communication and processing of information (Huther 1997; John and Senbet 1998).

While the concentration of board positions can induce a lack of transparency, a large number of board members, in spite of increasing the supervisory capacity, can harm the company by lengthening the decision-making process and communication procedures (Jensen 1993). Moreover, the size of the board would affect the disclosure of information positively since increased disclosure of information provides as much of a positive impression of the company as of the decisions of the members of the board (Chiang 2005; Raheja 2005). Abdel-Fattah 2008 and Ezat and Ahmed 2008 found significant positive association However, a number of studies conclude that board size is not associated with the level of voluntary disclosure (Arcay and Vazquez 2005; Cheng and Courtenay 2006; Gandia 2008).

Depending on the above argument, it is expected to find a relationship between the size of the directors' board and the online disclosure, as a result of the diversity of the board's membership and their desire to disclose more information on their company's web site to attract more investors and satisfy the shareholders' needs. Consequently, the larger the number of the board's directors, the greater the desire for online disclosure.

Hypothesis – 11: There is significant positive association between the board size and the level of disclosure on the internet.

4.5.12 Ownership Structure:

In term of equity's scope, there are two clusters: either the concentration or the dispersion of the ownership. Concentration of ownership refers to the group who has the most influence among the equity owners, while dispersion (diffusion) of ownership looks only at the separation of ownership between managers and equity owners as a group (Haniffa and Cooke 2002). Due to this separation of ownership and control in modern corporations, there is a conflict of interest between the principal (owners) and the agent (management). So ownership structure is one of the most important factors shaping the corporate governance system of any country. It plays an important role in determining a firm's objectives, shareholders' wealth and how managers of a firm are disciplined (Porter 1990; Yammeesri and Lodh 2004; Yammeesri et al. 2006) and performed an active role as a good monitor in countries where investor protection is weak (Shleifer and Vishny 1997; La Porta et al. 1998, 2000).

Companies whose ownership structure is diffuse (widely held companies) tend to disclose more information on their web sites to supply the shareholders with necessary information, while closely held companies (with a concentrated ownership structure) tend to disclose less information on their web sites because their shareholders can access the required information and obtain it internally (Marston and Annika 2004). Tan (2000) also suggested that family controlled firms have concentrated power and are very reserved in making voluntary disclosures but tend to adhere to rules and regulations. Chau and Gray (2002) found that the level of information disclosure is likely to be less in family-controlled firms because the demand for information is less compared to firms that have wider ownership.

Bangladesh tends to have a higher concentrated ownership of shares. The corporate control mechanisms in Bangladesh is predominantly owned and controlled by founder families or groups of families or foreign owners (Farooque et al. 2007). It is found that in Bangladesh 72.5 percent of the outstanding shares are owned by households/sponsors and individuals (Nurunnabi and Monirul 2012). Chowdhury (2006) observed that even when the company is listed on the stock exchanges, few shares are available for trading, as the majority remains held by the original sponsors. The spread of share ownership in public limited companies in Bangladesh is not wide and the economic power of businesses is concentrated in dominant shareholder groups. A few shareholders account for a significant proportion of the total share value.

In Bangladesh, Public Limited Companies' ownership patterns include sponsor ownership, institutional ownership, government ownership, foreign ownership and public ownership (Bhuiyan et al. 2007). Most public companies in Bangladesh are mainly controlled by founding sponsors/directors who are family members, leading to a very high degree of ownership concentration and control. Representatives of these concentrated owners hold positions on the company board and in management. Sponsors represented the concentrated ownership (more than 50%) by the sponsors of the company. If ownership is concentrated by the sponsor in a company it is expected that the disclosure pattern might be influenced (Hossain and Arifur 2006).

The significance of ownership structure is mixed: some studies show no significant relationship between this variable and online disclosure (Abdelsalam and Donna 2007; Trabelsi and Labelle 2006), while others prove a significant positive relationship (Debreceny and Rahman 2005; Marston and Annika 2004; Momany and Al-Shorman 2006; Oyelere et al. 2003; Ezat and Ahmed 2008; Nurunnabi and Monirul 2012).On the other hand, Ho and Wong (2001) find a negative relationship between family controlled firms and the level of voluntary disclosure. So the next hypothesis is:

Hypothesis – 12: There is significant positive association between ownership structure and level of internet reporting in Bangladesh.

4.5.13 Company Age:

According to Owusu- Ansah (1998) corporate age is related to its stage of development and growth. Older, well-established companies are likely to disclose much more information in their annual reports than younger companies. New companies do not have a disclosure 'track record' and therefore have diminished incentives to disclose. The premise on which this diminished incentive is based appears to be the fact that any additional disclosure, beyond what is currently disclosed raises the expectations bar for users. A company would thus be expected to continuously improve its disclosures with the passage of time in accordance with this expectation.

The date on which a company was listed in the capital markets may affect disclosure levels (Choi 1973; Spero 1979). Older companies with more experience are likely to include more information in their annual reports in order to enhance their reputation and image in the market (Owusu-Ansah 1998; Akhtaruddin 2005).A number of researchers have argued that older companies are more likely to have established reporting systems at a lower cost (e.g. Haniffa and Cooke 2002; Al-Shammari 2007; and Gandia 2005, 2008).

However, Al-Shammari (2007) argued that a younger company may suffer a greater competitive disadvantage if it discloses certain items such as information on research and development expenditure, capital expenditure and new products. Researchers like Haniffa and Cooke (2002) have argued that companies only recently listed would have an incentive to disclose more information in order to combat scepticism and raise the confidence of investors.

Owusu- Ansah (1998, p. 605) pointed out three factors that may contribute to this phenomenon. Firstly, younger companies may suffer competition; secondly, the cost and the ease of gathering, processing, and disseminating the required information may be a contributory factor; and finally, younger companies may lack a track record on which to rely for public disclosure.

The results of the previous studies are inconclusive. While Owusu- Ansah (1998) found significant positive association, Akhtaruddin (2005); Al-Shammari et al. (2007); Nurunnabi and Monirul (2012) found non-significant association of company age with the level of disclosure. Older companies may be more motivated to disclose information voluntarily, and as a result, it would be done through internet financial reporting. It is expected that the older companies are more likely to disclose more information than the newer firms. For this study, it is expected that company age is a critical factor in determining the level of corporate disclosure.

Hypothesis – 13: There is significant positive association between company age and level of internet reporting in Bangladesh.

4.6 Conclusion:

The previous chapter provides a critical review of disclosure literature while the following chapters will present the methodology and empirical section of this study. The current chapter, with chapter five, helps in making a link between the theoretical and empirical sections. Based on the proposed theoretical framework in this chapter, the evidence from disclosure literature in chapter three and the legal framework of corporate reporting in Bangladesh in chapter two, thirteen hypotheses related to corporate governance characteristics, ownership structure and firm characteristics have been developed in the current chapter. These hypotheses will be tested in the chapter seven to answer the third research question. The next chapters discuss the methodology that has been applied in this study. Before dealing with the hypotheses testing in chapter seven, chapter six will present a descriptive analysis of the results of disclosure checklist to answer the first two research questions: to what extent do Bangladeshi companies disclose mandatory and voluntary information on the internet.

Chapter: 5
Methodology

5.1 Introduction

The previous chapters presented the theoretical framework and hypotheses development for this study: reviewing key theories, their empirical evidence and hypotheses in chapter four; reviewing relevant literature in chapter three; an overview of the corporate reporting environment and the legal framework of reporting in Bangladesh are discussed in chapter two, and an outline of the importance of corporate internet reporting, background and motivation are discussed in chapter one. The main objective of this chapter is to justify methodology used in the study's empirical analysis. The empirical section in the present study aims to measure the extent of disclosure of mandatory and voluntary information on the internet, by the listed companies in Bangladesh. Moreover, the research justifies the investigated level of corporate disclosure by examining the different determinants of this sort of disclosure. The determinants are firm size, profitability, industry type, leverage, liquidity, company age, multinational parents, market category, audit firm's international link, board size, independent director in the board, ownership structure, and dual leadership structure.

The current chapter outlines the research method and the procedures employed in the empirical section. Section 5.2 outlines the research design including research philosophy and research approach. Section 5.3 describes the construction process of research instrument and section 5.4 is related to the data collection process and section 5.5 explains the sample size. The analysis techniques that are employed to answer each of the research questions are described in section 5.6, 5.7 and 5.8 respectively. Section 5.9 described the statistical method used to test the hypotheses and this is followed by the conclusion in section 5.10.

5.2 Research Design:

According to Saunders et al. (2007) the steps of the research process can be viewed as layers of a research onion. This research onion consists of six layers- research philosophies, approaches, strategies, choices, time horizons, and techniques and procedures. The researcher needs to be peel away these

important layers of the research onion before embarking on data collection and data analysis.

The current study aims to address the extent of disclosing corporate mandatory and voluntary information on the internet by the listed companies in Bangladesh. In addition, it aims to explain whether the impact of firm size; profitability, liquidity, leverage, industry type, ownership structure, multinational parent, market category, audit firm's international link, age, board size, independent director in the board, and role duality have any impact on corporate internet reporting. It is therefore necessary to explore the objectives motivating the disclosure decision. The key assumption here is that organisations are rational entities, in which rational explanations offer solutions to rational problems. As functionalist paradigm would be appropriate for an evaluation study of a communication strategy to assess its effectiveness and make recommendations as to the way in which it may be made more effective and so, a functionalist paradigm would be the appropriate research nature and philosophy for the current study.

This study doesn't aim to develop a theory but it seeks to describe the disclosure practices on the internet and to investigate the relationship between the extent of such disclosure and a number of determinant variables. Therefore, the deductive approach is considered to be more suitable to the present study as the deductive research's starting point is the search to explain causal relationship between variables leading to the hypothesis development. Accordingly, it needs to collect quantitative data, or even qualitative data, to test the developed hypothesis using a highly structured methodology to facilitate the replication of the findings (Gill and Johnson 2002). This approach begins with the development of a set of hypotheses, deduces what follows from them and then tests them to identify their correctness.

The key underlying assumption is whether quantitative or qualitative research approaches would be appropriate. It is believed that objectivity is an essential aspect in quantitative research while in qualitative research, objectivity is not possible. Again in quantitative research variables are considered to be essential as it is primarily concerned with the relationships between them to establish the

causal formation of the variables. Therefore, it is believed that quantitative research would be appropriate to test the developed hypotheses.

In the current study, survey technique is used to collect the required data because this type of quantitative research is usually linked with the deductive approach. Surveys allow the collection of large amounts of data from a sizable population in an economical way and give the researcher more control over the research process (Saunders et al. 2003). This study is a single country study: it focuses on the corporate internet reporting practices by the listed companies in Bangladesh and employs cross sectional analysis of the internet reporting practice in a specific point of time, one year, because information contained in the web is very dynamic. It will also focus on the total and the categories of mandatory and voluntary disclosure practices on the internet. Furthermore, it will help in determining the significant variables that influence the extent of disclosing information on the internet by the investigated companies. This type of analysis is helpful to all parties interested in financial reporting especially in emerging capital markets and developing countries. It provides an analytical view of the information disclosed on the internet and may help in improving the mandatory and voluntary disclosure practices. It sheds light on the aspects or types of information that may need more disclosure and more attention from the capital market authority.

5.3 Index Construction:

A disclosure index is a research instrument to measure the extent of information reported in a particular disclosure vehicle(s) by a particular entity(s) according to a list of selected items of information (Hassan and Claire 2010). It has been used in prior disclosure studies in the literature after Cerf's study in 1961(Marston and Shrives 1991; Hussainey 2004). It is an extensive list of selected items which may be disclosed in company reports (Marston and Shrives 1991, p.195). According to them it can be used to show compliance with regulations if the items in the index are so chosen or conversely it can be used to show the level of voluntary disclosure. Again it can also include a mixture of mandatory and voluntary items if this suits the purpose of the research project (Marston and Shrives 1991). The disclosure index is a ratio the

actual disclosure scores awarded to a company to the maximum possible disclosure required or expected (Cooke 1989 and Hodgdon 2004).

Based on the extent of content analysis, the disclosure studies using a disclosure index can be classified into two types: a partial content analysis and a holistic content analysis. In a partial content analysis, researchers identify a list of disclosure topics, while in holistic content analysis researchers investigate the whole annual report to construct their disclosure index (Beattie and Ken 2001 and Hussainey 2004). The selection of items included in the disclosure index is a major task in the construction of any disclosure index (Marston and Shrives 1991).

In previous disclosure literature, the construction of a disclosure index varies in terms of the degree of the researcher involvement in constructing the index, the type of information disclosure and the number of items of information included in the index. In constructing a disclosure index, the degree of the researcher involvement varies from full involvement to no involvement. In full involvement, the researcher controls the entire process of index construction for selecting the items of information to be included while in no involvement, the researcher depends on available disclosure indices from prior studies or professional organisations. Between these two extremes, the researcher involvement varies (see, for example, Choi 1973; Buzby 1974; Buzby 1975; Firth 1979; Chow and Wong-Boren 1987). Disclosure items have been identified from other studies that examining disclosure in the Bangladesh by using the disclosure index methodology (Parry and Groves 1990; Ahmed and Nicholls 1994; and Karim 1995).

5.3.1 Steps of Constructing Disclosure Index:

Three steps must be considered to construct a disclosure index. The first is developing a checklist by selecting informational items to be included in this checklist. The second is to score the items and the third is to compute the disclosure index. These steps involve some practical problems that may influence the reliability and validity of the disclosure index e.g. using partial scores, weighted scores, and scoring inapplicable items (Marston and Shrives 1991). The following paragraphs deal with these steps.

5.3.1.1 Developing the checklist:

The first step is the selection of items that might be expected to be reported. However, Wallace (1988) indicated that there is no general theory on the items that should be selected to assess the extent of disclosure. Moreover, the relevant literature shows that there is no commonly used theory to determine the number and selection of items for a disclosure index (Hooks et al. 2000). Marston and Shrives (1991) are of the opinion that the usefulness of the disclosure index as a measure of disclosure is dependent on the selection of items to be included in the index. The selection of items depends on the focus of the research (Wallace and Naser 1995). The majority of disclosure studies base their selection of items on many sources such as previous studies, laws and regulations, recommendations from specialised professional organisation, and comments from the users of annual reports. The major task of the present research is to develop a suitable disclosure index comprising items of information that are expected to be disclosed on the internet from the viewpoint of emerging countries.

The present study follows the prior disclosure literature and develops a self constructed mandatory and voluntary disclosure index to measure the extent of disclosing information on the internet by the listed companies in Bangladesh. The steps of developing the checklist are as follows:

• A mandatory disclosure index was constructed by considering each of the financial reporting requirements: Company Act 1994; BAS- the approved IAS; BFRS; SEC rules 1987 and guidelines in Bangladesh. However, for preparing the voluntary disclosure checklist this study focuses on the whole hard copy annual report and prior studies concerning voluntary disclosure in corporate annual reports and voluntary items recommended for disclosure by professional organisations. It starts with preparing a preliminary checklist that contains the expected voluntary information items.

• The items of information included in the disclosure index have been considered from the viewpoint of a general-purpose context rather than a specific user group context. To ensure the clear division between the items on the mandatory and voluntary checklists, the preliminary checklist that includes

voluntary disclosure items, is reviewed against the mandatory disclosure requirements in accounting standards, the company act, listing rules and other laws.

• As one of the steps used to achieve the validity of the research instrument, three Bangladeshi academics will have been asked to refine the preliminary checklist for independent review.

***5.3.1.2 Scoring in the Disclosure Index*:**

Once the final list of items of information was determined, the next step was to assign a score to each item included in the list. To capture the extent of disclosures, Cooke (1989) indicates two main approaches of developing a scoring scheme: The first approach depends on the presentation of information. Here the researcher mentions the number of words used to describe an item disclosed. Such an approach leads to a scale of disclosure that varies between zero and one. Cooke (1989) criticizes such procedure of scoring due to the subjectivity in allocation of scores and suggests the second approach; a dichotomous procedure. Under this procedure, a required disclosure item scores one if it is disclosed and zero if it is not disclosed. The total disclosure score for a company is additive.

However, to avoid any negative effect on the reliability and validity of the disclosure scores, two issues related to the scoring process must be considered: weighting the score and inapplicable items. The weighted approach assumes that the importance to user groups varies from item to item, while un-weighted approach assumes all disclosure items are equally important. The fundamental issue of un-weighted disclosure index is that all the items of the index are considered equally important and the advantage of this approach is that it considers all user groups rather than focusing on specific groups (Firth 1979). Spero (1979) also support the un-weighted approach. According to him, attaching weights is irrelevant because those enterprises that are better at disclosing 'important items' are also better at disclosing 'less important items', i.e. firms are consistent in their disclosure policies. On the other hand, those who supported the use of the weighted scores believe that the weighted scores help in measuring the quality of disclosure not only the extent of the disclosure.

In addition, the weighted scores may help in mitigating the problems of subjectivity. (Botosan 1997; and Hodgdon 2004).A major issue for the weighted approach is that if different user groups are asked to weight the importance of various items, they may weight the same items of information differently. The weighted approach has, in fact, encountered several problems. However, those who argue against the use of the weighted index contend that the weighting does not significantly alter the results (Chow and Wong- Boren 1987; Wallace and Naser 1995). In all cases, Chow and Wong-Boren (1987) and Robbins and Austin (1986) obtained the same results under the un-weighted and weighted indexes. So, the un-weighting system is viewed to be superior to the differential weighting system (Owusu-Ansah 1998). Therefore, the un-weighted approach has been used in this study.

For inapplicable items, the current study follows Cooke (1989) and employs the dichotomous approach; scoring the item one if it is disclosed and zero if is not disclosed: all disclosure items of information are not relevant and applicable to all companies. Scoring inapplicable items means penalising companies and affects the reliability and validity of the disclosure index. Therefore, companies shouldn't be penalized for not disclosing inapplicable items. In this regard Cooke (1989 and 1991) suggests that the researcher can read the entire annual report to decide whether an item is applicable for a company or not. He recognises that this procedure introduces an element of subjectivity into this approach but he argued that failure to adopt such procedure would mean that larger more diversified companies would be able and likely to disclose more information.

Owusu- Ansah, 1998 suggested the use of a relative index for companies having non-applicable items. The relative index approach is the ratio of what a particular company actually disclosed to what the company is expected to disclose. In spite of the subjective discrimination between non-disclosure and non-applicable items, this approach is considered to be a more accurate measure than one that assumes that all companies are identical and, therefore, no difference need exist in disclosure requirements. This approach has been employed in several prior studies (for e.g., Cooke 1989; Inchausti 1997; Owusu-Ansah 1998; Wallace and Naser 1995; Wallace et al. 1994).

***5.3.1.3 Computing the Disclosure Index*:**

The relative index is the ratio of what the reporting company actually discloses to what the company is expected to disclose under a regulatory regime. The relative index approach has been used in prior studies (e.g., Wallace 1988; Cooke 1989, Wallace et al. 1994; Inchausti 1997, Leventis and Weetman 2004; Aktharuddin 2005; Barako et al. 2006 and Ghazali and Weetman 2006). This can be presented mathematically as follows:

$UIx = [\sum T_{tx}]/ nx$

Where, UIx is the unweighted index scored by company, x, $0 \leq Ix \leq 1$; T_{tx} is the information item disclosed by company x; nx is the maximum number of items expected to be disclosed by a company;

5.4 Data Collection:

Data for this study is based on a cross-section, one year, because information contained in the web is very dynamic and collected by browsing the websites of the sample companies. Firstly, the location of the corporate websites of the sample companies was identified.The websites of the stock exchanges were used to locate the homepage of therespective companies. In case of unavailability of such links, popular search enginessuch as MSN, Google, Yahoo, Alta Vista etc. were used to locate the homepage of therespective firms. The period of collecting data relating to corporate reporting on the Internet was from December 01, 2013 to March 31, 2014. The web sites were revisited in April 2014 as a validity check and nochanges in the companies' web sites were found. In the case of companies whose websites were under construction, it was confirmed that they were still underconstruction up to the end of April 2014. After collecting relevant data, ascoring scheme was developed in order to measure quantitatively the extent of mandatory and voluntary disclosure on the internet.

5.5 Sample Size:

The sample initially included all the listed companies on the Dhaka Stock Exchange (DSE) at 31 March, 2014 was 531. Out of 531 companies, there are 3 Corporate bond, 41 Mutual funds, 221 Treasury bond and 8 Debenture which

are excluded from the sample and therefore, the population size of the present study reduced to 258. Out of these 258 companies only 251 companies (97.29 percent) were found to have corporate websites; 11 companies were not accessible during the period of data collection and 6 companies had only the homepage. As a result, the sample size reduced to only 234 companies (90.70 percent) whose websites were accessible during the period of data collection. In 2012, Nurunnabi and Monirul found only 83 companies (29.12 percent) that have websites.

Table 5.1: Sample size

Particulars	Sample size
Total population size	258
Companies with no website	(7)
Companies with only homepage	(6)
Website under construction	(11)
Adjusted sample size	234

An overview of sector wise sample size is shown below.

Table 5.2: Sector Wise Population and Sample Size

Sector	Population	Sample	Percentage
Bank	30	29	96.67%
Cement	7	7	100%
Ceramics	5	5	100%
Engineering	25	25	100%
Financial Institutions	23	23	100%
Food and Allied	18	15	83.33%
Fuel and Power	15	14	93.33%
Insurance	46	41	89.13%
IT sector	6	6	100%
Jute	3	1	33.33%
Miscellaneous	9	7	77.78%
Paper and printing	1	1	100%
Pharmaceuticals and Chemical	25	21	84%
Services and Real Estate	3	3	100%
Tannery Industries	5	3	60%

Telecommunication	2	2	100%
Textile	32	28	87.50%
Travel and Leisure	3	3	100%
Total	258	234	90.70%

5.6 Extent of Mandatory Disclosures on the Internet:

Here the study aims to investigate the internet disclosure practices of listed companies in Bangladesh to see how they comply with mandatory rules established by the three regulatory bodies. The major task of the present research is to develop a suitable disclosure index comprising items of information that are expected to be disclosed on the internet from the viewpoint of emerging countries. The findings of the study would be of immense interest to listed companies, investors, and those involved in standard setting processes. It measures the extent of total mandatory disclosure and its categories, in corporate annual reports based on a self constructed checklist of mandatory disclosure items and using an un-weighted disclosure index.

A disclosure index was constructed based on a thorough and rigorous study of the existing regulatory frame work for listed companies and an examination of the IASs and IFRS adopted in Bangladesh until January 2010 (last updated in Bangladesh). The extent and nature of disclosures of the listed companies are influenced by Securities and Exchange (SEC) Rules 1987 (Government of Bangladesh, 1987), the IASs adopted by the Institute of Chartered Accountants of Bangladesh (ICAB) and the disclosure provision of the Companies Act 1994 (Government of Bangladesh, 1994). These three regulatory bodies provide the framework for corporate disclosures in Bangladesh. The checklist would form a disclosure index revealing the level of mandatory corporate disclosure.

The checklist is composed of different sections showing the whole mandatory disclosure categories which is given in appendix A. The disclosure level is measured using the percentage of the present items over the whole disclosure index items. Table 5.4 shows the mandatory disclosure checklist. The presence of the item in the internet corporate reports is represented by (1), while the absence of the item in the internet reports is represented by (0). This approach has been employed in several prior studies e.g., Akhtaruddin (2005), Das and

Shilpi (2008), Hassan et al. (2008).This can be presented mathematically as follows:

$UIx = [\sum T tx]/ nx$

Where, UIx is the unweighted index scored by company, x, $0 \leq Ix \leq 1$; Ttx is the information item disclosed by company x; nx is the maximum number of items expected to be disclosed by a company.

Table 5.3: Distribution of the Index Items into Different Parts

	Major Parts of Report	**Total**	**Percentage**
Mandatory Disclosure	General Information	**23**	**22.33**
	Directors Report	**8**	**7.77**
	Balance Sheet	**36**	**34.95**
	Profit and Loss Account	**36**	**34.95**
	Total	**103**	**100%**

5.7 Extent of voluntary disclosures on the internet:

The study investigates the extent of disclosing voluntary information on the internet by the listed companies in an emerging capital market, namely Bangladesh, which lacks prior voluntary disclosure studies. It measures the extent of total voluntary disclosure and its categories in the corporate internet reporting based on self constructed checklist of voluntary disclosure items using unweighted disclosure index which is given in appendix B. The checklist would form a disclosure index that shows the level of voluntary corporate disclosure by examining the presence or absence of the different items of the checklist using binary codes. The presence of the item in the corporate websites is represented by (1), while the absence of the item is represented by (0). The checklist is composed of different sections showing the whole voluntary disclosure categories (table 5.5). The disclosure level is measured using the percentage of the present items over the whole disclosure index items. This approach has been employed in several prior studies e.g., Nurunnabi and Monirul (2012), Dutta and Bose (2008), Rouf (2011), Wallace (1987), Cooke (1991, 1992), Karim (1995), Hossain et al.(1994), Ahmed and Nicholls (1994), and Hossain (2000). This can be presented mathematically as follows:

$UIx = [\sum T tx]/ nx$

Where, UIx is the unweighted index scored by company, x, 0 ≤ Ix ≤1; Ttx is the information item disclosed by company x; nx is the maximum number of items expected to be disclosed by a company.

For the purpose of this study, voluntary reporting will be classified as; General information, Corporate strategic information, Corporate governance/directors information, Financial information, Corporate Social reporting, Environmental reporting and Sustainability reporting, Investor Related Information and Information Presentation Format on the internet.

Table 5.4: Distribution of the Index Items into Different Parts

	Major Parts of Report	**Total**	**Percentage**
Voluntary Disclosure	General Corporate Information	10	7.81
	Corporate Strategic Information	7	5.47
	Corporate Governance/ Directors Information	14	10.94
	Financial Information	17	13.28
	Corporate Social Responsibility reporting	14	10.94
	Corporate Environmental Information	13	10.16
	Sustainability Information	25	19.53
	Investor Related Information	13	10.16
	Presentation Format	15	11.72
	Total	128	100%

5.8 Factors influencing disclosures of information on the internet:

Based on the literature review in chapter three and theories of disclosure in chapter four, the study determines Firm Size, Profitability, Liquidity, Industry Type, Multinational Parents, Market Category, Independent Director in the board, Board Size, Dual Leadership Structure, Leverage, Audit firm's international link, Ownership Structure, and Company Age as determinants of corporate internet reporting for listed companies in Bangladesh. In chapter four these variables are discussed and hypotheses are developed.

5.8.1 Measurement of Variables:

5.8.1.1 Firm Size

Firm size can be measured in a number of different ways and there is no overriding reason to prefer one to the others (Cooke 1991). Numerous studies combine some measures into one measure (Cooke 1992) while others use one measure. However, there is no criterion to select the finest proxy of firm size (Hassan et al. 2006). Reviewing the literature, it can be noticed that the most common measure of firm size is total assets. In the present study, the size of the company is determined by taking assets as the basis and the log of asset (LDASST) is used consistently in the disclosure models as the size variable.

5.8.1.2 Profitability:

A number of profitability measures were used in previous literature, including net profit to sales, earnings growth, dividend growth and dividend stability (Cerf 1961), return on asset and return on equity (Oyelere et al. 2003) net profit to sales and return on equity (Nurunnabi and Monirul 2012) and return on assets (Belkaoui and Kahl 1978). Following Belkaoui and Karpik 1989; Bewley and Li 2000; Magness 2006, Oyelere et al. 2003, the current study employs both the return on equity (ROE) and return of assets (ROA) as a measure of the firm's profitability.

5.8.1.3 Audit Firm's international link:

In the present study, an international link of audit firms was considered for use as an explanatory variable. The audit firms in Bangladesh can be classified into two groups: local audit firms with international affiliations with the Big Four and local audit firms without international affiliations with the Big Four. Audit firms having an affiliation with an international Big Four firm were treated as 'Big' and audit firms' failing to meet the criterion were treated as non big firms in the context of Bangladesh. A dichotomous procedure was used awarding one if the company's audit firm was big and zero otherwise.

5.8.1.4 Industry type:

Some previous disclosure studies have focused only on non-financial companies (see for example, Wallace 1987 and Ahmed and Nicholls 1994). Because, in many countries different types of disclosure regulations are applied to banks, insurance and investment companies for the unique nature of their transactions and the asset portfolio of such entities. In the present study,

financial institutions are considered, as they form a major part of the corporate structure in Bangladesh. Companies listed on the Dhaka Stock Exchange Bangladesh are classified into eighteen categories. These are divided into two groups in this study: financial and non-financial companies. A dummy variable is used entering with the value of 1 if the company is in the financial sector and zero otherwise.

5.8.1.5 Multinational Parents:

The influence of a multinational parent is used by means of a dummy variable with 1 for MNC subsidiaries and 0 for domestic companies.

5.8.1.6 Leverage:

In the present study, debt equity ratio is used as the measure of leverage and used only for non-financial companies.

5.8.1.7 Liquidity:

In this study, liquidity is measured by current ratio and quick (acid test) ratio as it is a more stringent measure of corporate liquidity. Current ratio can be defined as the ratio of current assets to current liabilities where quick ratio can be defined as the ratio of current assets less inventories to current liabilities. For financial companies both current ratio and quick ratio are the same as they have no inventory items in their balance sheet but in the case of non financial companies, both current and quick ratio vary.

5.8.1.8 Market category:

It is expected that companies in the Z category are likely to have less voluntary information than those in the other categories. The phenomenon is captured with a dummy variable with the value of 1 if it is in the Z category and 0 otherwise.

5.8.1.9 Independent directors in the board:

A firm may have higher level of disclosure if the boards consist of more independent directors. In this study we used number of independent director in the board as a measure.

5.8.1.10 Dual leadership structure:

Based on mixed findings the current study was motivated to determine the effects of dual leadership structure on corporate reporting on the internet. In this study a dummy variable 1 is used if any company has dual leadership structure in the board and otherwise 0.

5.8.1.11 Board size:

In this study board size has been measured by the number of board members.

5.8.1.12 Ownership structure:

In Bangladesh, most of the companies are predominantly owned and controlled by founder families, groups of families or foreign owners (Farooque et al. 2007). So ownership plays a significant role in the corporate sector of Bangladesh. The ownership pattern of Public Limited companies in Bangladesh includes sponsor ownership, institutional ownership, government ownership, foreign ownership and public ownership (Bhuiyan et al. 2007). As we are focusing on the listed firms in Bangladesh which are of limited liability in nature, so we determine sponsor as a dependent variable which reflects the concentrated ownership (50% or more) by the sponsors of the company. According to Hossain and Arifur (2006) concentrated ownership might influence the disclosure pattern. The phenomenon is captured with a dummy variable with the value of 1 if it has concentrated sponsor and 0 otherwise.

5.8.1.13 Company age:

To measure the age of the company that we can use two dates -one is establishment date and another one is the company's listed date. In the present study, both are applied and the variables measured by simple counting the number of years passed from it listing year on a particular sample year.

5.8.2 Regression model:

Dependent Variables:

ICRIM = Internet Corporate Reporting Index for Mandatory

ICRIV= Internet Corporate Reporting Index for Voluntary

Control variables:

Explanatory variables and their expected sign of the study are given below:

Table 5.5: Explanatory Variables and their Expected Sign

Determinants	Variables	Variable Level	Expected sign
Firm Size	Natural log of total asset	LDASST	+
Profitability	Return on Equity and Return of Assets	ROE and ROA	+
Audit Firm's International link	Audit firms link with Big Four Firm	AUDITOR	+
Industry Type	Financial and Non Financial Sector	FIN	+
Leverage	Debt to equity ratio	LEV	+
Multinational Parents	Subsidiary of a multinational company	MNC	+
Liquidity	Current Ratio and Quick Ratio	CURRENT and QUICK	+
Market Category	Market category of DSE, 1 for Z, 0 otherwise.	MKTCATE	-
Independent Director in Board	Number of independent director in the board	IND	+
Dual Leadership Structure	Dummy variable 1 for CEO Duality or Role Duality, otherwise 0.	RODUAL	+
Board Size	Number of Board member	BOSIZE	+
Ownership Structure	Sponsor hold 50% or more ownership	SPONSOR	-
Company Age	Company's establishment year and listing year	LISYR and ESTABYR	+

The study developed the two regression models to justify the association between the dependent and independent variables in the form of ICRIM (Internet Corporate Reporting Index for Mandatory) index ICRIV (Internet Corporate Reporting Index for voluntary) and the relevant hypotheses. The first model is based on the combined sample and the second model is based on the

non-financial sector. This type of regression model has been widely used in the disclosure literature. For example Nurunnabi and Monirul (2012) developed the two models of the general form of OLS (Ordinary Least Squares) regression model to justify the association between the dependent and independent variables in the form of TDS (Total Disclosure Score) index. Such as

Y = β0 + β1 Age1 + β2 Profitability2 + β3 Industry3 + β4 Size4 + β5 Big audit firm 5 + Є

where:

Y = the total voluntary IFR disclosure index or TDS (total disclosure score).

β0= constant.

βi=i=1. . .5 = parameters.

Є= error term.

Hossain et al. (2006) also developed a disclosure checklist of 60 items and used following multiple linear regression techniques to test hypotheses.

SEDI= α + β1 ROASSETS + β2 NPMARGIN + β3 MULTICOM + β4 INDUTYPE + β5 SALES + β6 INLINK + β7 ASSETS + β8 AGE + Є .....(1.1)

Where,

SEDI = total score received each sample company under social and environmental disclosure index;

α = the constant, and

Є = the error term.

Like these Oyelere et al. (2003), Abdel- Fattah (2008), Bonson (2006), Uyar, A. (2011), Alsaeed (2006), Aly et al. (2010), Abdelsalam and Donna (2007), Debreceny et al. (2002) and Eng and Mak (2003) also employ this type of regression equation to test the hypotheses. In this study the following multiple linear regression is used to investigate the association between the determinants and the level of disclosure in Bangladesh:

<u>For Combined Sample:</u>

Equation 1:

ICRIM = β_0 + β1 LDASST + β2 ROE +β3 ROA + β4 AUDITOR + β5 MNC + **β6 FIN** + β7CURRENT + β8 MKTCATE + β9 IND + β10 BOSIZE + β11 RODUAL + β12 SPONSOR + β13 LISYR + β14 ESTABYR +Є

Equation 2:

ICRIV = β_0 + β1 LDASST + β2 ROE +β3 ROA + β4 AUDITOR + β5 MNC + **β6 FIN** + β7CURRENT + β8 MKTCATE + β9 IND + β10 BOSIZE + β11 RODUAL + β12 SPONSOR + β13 LISYR + β14 ESTABYR +Є

For Non-Financial Sector Companies:

Equation 3:

ICRIM = β_0 + β1 LDASST + β2 ROE +β3 ROA + β4 AUDITOR + β5 MNC + **β6 LEV** + β7CURRENT + β8 QUICK + β9 MKTCATE + β10 IND + β11 BOSIZE + β12 RODUAL + β13 SPONSOR + β14 LISYR + β15 ESTABYR +Є

Equation 4:

ICRIV = β_0 + β1 LDASST + β2 ROE +β3 ROA + β4 AUDITOR + β5 MNC + **β6 LEV** + β7CURRENT + β8 QUICK + β9 MKTCATE + β10 IND + β11 BOSIZE + β12 RODUAL + β13 SPONSOR + β14 LISYR + β15 ESTABYR +Є

Where,

ICRIM = Internet Corporate reporting Index for Mandatory

ICRIV = Internet Corporate Reporting Index for Voluntary

β_0 =Constant

β_{1-} β_{15} =Explanatory variables

Є = Error term

This model is not an econometric model because here we don't measure the value of different parameters. This is a statistical model, which has been developed to test the hypotheses. This type of regression equation has been used to test hypotheses in the previous literature.

5.9 Statistical Tests:

This section gives an overview of the statistical techniques that will be employed in this study. The study will first analyse the extent of total mandatory disclosure and voluntary disclosure; then the categories of such disclosure in chapter six. Here Spearman correlation and Pearson correlation will be applied to identify the correlation between the dependent and independent variables.

To identify the appropriate regression test, the study performed regression diagnostic to measure the normality of data set in chapter seven. In this study both numerical (skewness-kurtosis and Shapiro-Wilk) and graphical (Q-Q plot; P-P plot) method have been applied to check the normality of residuals. For

checking the linearity assumption, the residuals will be plotted against the independent variable(s) values; for heteroscedasticity, two tests will be conducted, the first is Breusch-Pagan / Cook-Weisberg and White's tests and the second is Cameron and Trivedi's decomposition of IM test. Finally to check the multicollinearity, the study will use the correlation coefficients; parametric (Pearson) and non parametric (Spearman); and variance inflation factors (VIF) in addition to tolerance values.

Ordinary Least Squares (OLS) regression with robust standard error will be employed to examine the developed hypotheses as the data set is not normally distributed. The robustness tests have been applied as a non parametric test to overcome this problem.

5.10 Conclusion:

The current chapter helps in making a link between the theoretical and empirical sections. Based on theoretical framework in chapter four, evidence from corporate literature in chapter three and legal framework in chapter two, it seeks to examine empirically the extent of mandatory and voluntary reporting on the internet and the factors affecting this disclosure level. The study follows the deductive approach that requires developing hypotheses based on a theory. As indicated in chapter four, the current study employed multi approach theoretical framework that benefits from integrating a number of theories. As such, the study is considered to be a quantitative study. It measures the extent of reporting and its categories based on self constructed checklist of mandatory and voluntary reporting items. The final sample consists of 234 listed companies in Bangladesh. This chapter developed two sets of disclosure checklists and regression equation that are tested in the next empirical chapters six and chapter seven to answer all the research questions of this study.

Chapter: 6

Extent of Mandatory and Voluntary Disclosure

6.1 Introduction:

As discussed in chapter five, the present study developed two checklists to measure the level of mandatory and voluntary disclosure and its categories on the internet by the listed companies in Bangladesh. Reviewing the literature in chapter three revealed the importance of subdividing the total mandatory and voluntary disclosure into subgroups. To understand the disclosure practice, it may be better to look in depth into the results of the score sheet. The self constructed checklist consists of 103 mandatory items and 128 voluntary items of information which are then classified into different subgroups. The aim of this chapter is to provide the result of first two research questions which are:

RQ1: To what extent do Bangladeshi companies disclose mandatory reporting requirements on the internet?
RQ2: To what extent do Bangladeshi companies disclose voluntary information on the internet?

It provides answers to these questions through descriptive analysis of the results of the disclosure checklist. The chapter starts with the analysis of the extent of total mandatory disclosure on websites in section 6.2 followed by the extent of voluntary disclosure on the internet in section 6.3. Section 6.4 provides descriptive statistics for sector wise disclosure performance. After that, the determinants of disclosing both mandatory and voluntary information is discussed in section 6.5. Finally the co-relation analysis is performed for both combined and non-financial sample companies in section 6.6 and 6.7 respectively followed by a conclusion in section 6.8.

6.2 The Extent of Mandatory Disclosure on the Internet:

6.2.1 Combined Sample:

To identify the level of mandatory information disclosure on the internet by the listed companies in Bangladesh, a checklist of 103 mandatory items was constructed and then divided into the four subgroups which described in appendix A. A total of 234 company websites we are visited to collect the

information. The percentage of awarded disclosure score to the applicable score represents the extent of mandatory disclosure.

To start the analysis, table 6.1 presents the descriptive statistics of the total mandatory disclosure and its categories all together. The mean of the total mandatory disclosure score is 66.24% with a standard deviation of 97.09%. This average suggests a low level of compliance, which is to be expected. This result is comparable with the study of Akhtaruddin 2005, who reported that the extent of mandatory disclosure in Bangladesh is only 44%. The findings are in line with other studies. For example, Glaum and Street 2003 (83.7% in Germany), Owusu Ansah and Yeoh 2005 (New Zealand, 78% in 1992 and 88% in 1997) and Aljifri 2008 (68% in UAE).

The table also reveals the wide range of mandatory information disclosure on the internet where it varies from 2.91% (minimum) to 97.08%.One possible reason for the variation is the lack of regulatory enforcement in Bangladesh (Akhtaruddin 2005). Mendes-da-Silva and Theodore (2004) also documented the importance of recognising the lack of rules and guidelines concerning the use of the internet as a vehicle for disclosing financial information by Brazilian companies.

In addition, the table also indicates the variation in the level of mandatory reporting categories. It can be observed that the maximum disclosure of all categories is 100% represented by general disclosure, disclosure of the director's report and the profit and loss account. It is a common notice for the whole categories of disclosure is that the minimum disclosure for any category of disclosure is 0%, which means that at least one company of the examined companies failed to disclose the director's report, the balance sheet, or the profit and loss account on their website.

Table 6.1: Descriptive Statistics for Mandatory Disclosure (combined)

Mandatory Disclosure	N	Mean	Median	Std. Deviation	Mini-Mum	Maxi-Mum
General Disclosure	234	0.7689	0.9565	0.292	0.043	1
Director Report	234	0.5107	0.6250	0.388	0	1
Balance sheet	234	0.6580	0.8056	0.313	0	0.972
Profit and loss A/C	234	0.6326	0.7500	0.299	0	1
Total Mandatory	234	0.6624	0.8107	0.9709	0.0291	0.9708

6.2.2 Non Financial Companies:

To measure the level of mandatory disclosure on the website by the listed non financial companies in Bangladesh, the same checklist of 103 mandatory items has been used. A total of 141 company websites were visited to collect the information. The percentage of awarded disclosure score to the applicable score represents the extent of mandatory disclosure.

Table 6.2 represents the descriptive statistics for mandatory disclosure and its different categories for non financial companies. The mean of the total mandatory disclosure score is about 60.57% with a standard deviation of 32.04%. This result indicates a lower level of compliance in comparison to the combined sample. The table also suggests that the level of disclosure by the examined companies varies from 2.91% to 96.12%.

Moreover, the general information disclosure represents the highest disclosure level of 71.94% on the internet while disclosure of director's report presents the lowest disclosure level of 45.30%. In addition, it can be observed from the examined companies that the maximum disclosure of all categories is 100% represented by general disclosure, disclosure of director's report and profit and loss account: this is also similar in case of the combined sample. The minimum disclosure for any category of disclosure is 0%, which means that at least one company of the examined companies failed to disclose the director's report or the balance sheet on their website.

Table 6.2: Descriptive Statistics of Mandatory Disclosure (non financial)

Mandatory Disclosure	N	Mean	Median	Std. Deviation	Mini-Mum	Maxi-Mum
General Disclosure	141	0.7194	0.9130	0.3135	0.0435	1
Director Report	141	0.4530	0.5000	0.3982	0	1
Balance sheet	141	0.5985	0.7778	0.3303	0	0.9722
Profit and loss A/C	141	0.5743	0.6944	0.3252	0.0278	1
Total Mandatory	141	0.6057	0.7767	0.3204	0.0291	0.9612

6.3 The Extent of Voluntary Disclosure on the Internet:

6.3.1 Combined Sample:

To measure the level of voluntary disclosure on the internet by the listed companies in Bangladesh, a checklist of 128 items was constructed and divided into nine groups. A total of 234 company websites were visited to collect the necessary information. The percentage of awarded disclosure score to the applicable score represents the extent of voluntary disclosure, which is the dependent variable in this study.

Table 6.3 represents the descriptive statistics of the total voluntary disclosure level and the level of disclosing each category of information on the corporate website. The table indicates that the mean of the total voluntary disclosure score is about 35.46%. This average suggests a low level of voluntary disclosure on the internet by the Bangladeshi companies which is also to be expected. This result can be compared with the previous studies of Nurunnabi and Monirul (2012) who found that the level of average voluntary internet financial reporting is 32.14% in Bangladesh.

The table shows that the extent of voluntary disclosure has a wide range. While the minimum disclosure index obtained is 0%, the maximum is 85.93%. Moreover, it is observed that the maximum disclosure of all categories is 100% represented by general corporate information, corporate strategic information, financial information, social responsibility information, corporate environmental information and investor related information. The minimum disclosure for any category of disclosure is 0%, which means that at least one company of the examined companies missed general corporate information, corporate strategic

information, corporate governance information, financial information, social responsibility reporting, corporate environmental reporting, sustainability reporting, investors' related information and presentation format on their website. In addition, the general corporate information represents the highest disclosure level of 70%, while the corporate environmental information disclosure presents the lowest disclosure level of 11.97%.

Table 6.3: Descriptive Statistics of Voluntary Disclosure (combined)

Voluntary Disclosure	N	Mean	Median	Std. Deviation	Mini-Mum	Maxi-Mum
General Corporate Info	234	0.7	0.7	0.2061	0	1
Corporate Strategic Info	234	0.3102	0.2857	0.3163	0	1
Corporate Governance	234	0.5375	0.6729	0.3376	0	0.9285
Financial Information	234	0.4982	0.5294	0.2844	0	1
Social Responsibility Info	234	0.1920	0.0000	0.2950	0	1
Corporate Env Info	234	0.1197	0.0000	0.2568	0	1
Sustainability Information	234	0.1858	0.1200	0.1953	0	0.88
Investor Related Info	234	0.4096	0.3846	0.1999	0	1
Presentation Format	234	0.3972	0.4000	0.1804	0	0.8666
Total Voluntary Disclosure	234	0.3546	0.3398	0.2014	0	0.8593

6.3.2 Non Financial Sample:

Table 6.4 showed the descriptive statistics for the level of total voluntary disclosure and the level of disclosing each category of information using the non-financial sample for the year 2013. The results indicate that the mean total voluntary disclosure is about 29.50% which varies between 0% to 85.94% for the least and highest non financial companies of Bangladesh respectively. It can be observed that the voluntary disclosure level for non financial companies is lower than the combined sample.

Table 6.4: Descriptive Statistics of Voluntary Disclosure (non financial)

Voluntary Disclosure	N	Mean	Median	Std. Deviation	Mini-Mum	Maxi-Mum
General Corporate Info	141	0.6610	0.7	0.2154	0	1
Corporate Strategic Info	141	0.2482	0.1429	0.2772	0	1
Corporate Governance	141	0.4564	0.5	0.3413	0	0.9286
Financial Information	141	0.4189	0.4706	0.2706	0	1
Social Responsibility Info	141	0.1175	0	0.2225	0	1
Corporate Env Info	141	0.0693	0	0.2009	0	0.9231
Sustainability Information	141	0.1155	0.08	0.1226	0	0.76
Investor Related Info	141	0.3863	0.3846	0.2049	0	0.8462
Presentation Format	141	0.3631	0.3333	0.1737	0	0.8667
Total Voluntary Disclosure	141	0.2950	0.3047	0.1713	0	0.8594

It is also identified that the disclosure of general information on the website is the highest disclosing category with the value of 66.10% and the lowest disclosing category is corporate environmental information which discloses only 6.93%. Moreover, the interesting thing is that the minimum disclosure for all categories of voluntary disclosure is 0%, which means that at least one of the examined companies missed general information, corporate strategic information, corporate governance information, financial information, corporate social responsibility disclosure (CSR), corporate environmental disclosure, sustainability information, investor related information and presentation format in their website. But the maximum disclosure of all categories is 100% presented by general information, corporate strategic information, financial information and corporate social responsibility disclosure.

6.4 Sector Wise Disclosure Performance:

In order to gain a detailed understanding of corporate internet reporting practices, it is necessary to discuss sector wise performance of the listed companies in Bangladesh. It will help to identify the highest and lowest disclosing sector. From the table 6.5 it can be observed that among the fifteen sectors, the telecommunication sector discloses the most mandatory information at 85.44% followed by the financial Institution sector which discloses 81.93% mandatory information and then the banking sector, with 81.62%. The

tannery sector discloses the lowest with only 37.86% of mandatory information posted on the internet.

Table 6.5: Sector Wise Disclosure Level

Sector	Mandatory	Voluntary
Bank	81.62%	62.23%
Cement	63.38%	34.15%
Ceramics	56.50%	27.50%
Engineering	55.42%	25.72%
Financial Institutions	81.93%	47.86%
Food and Allied	59.48%	26.72%
Fuel and Power	68.03%	35.10%
Insurance	66.07%	30.09%
IT sector	72.01%	25.00%
Miscellaneous, Jute and paper	63.54%	23.09%
Pharmaceuticals and Chemical	72.77%	37.87%
Services and Real Estate	74.76%	34.38%
Tannery Industries	37.86%	22.40%
Telecommunication	85.44%	55.47%
Textile	48.27%	25.33%
Travel and Leisure	64.08%	34.64%

In the case of voluntary disclosure, the banking sector discloses the highest amount of information on the internet which is 62.23% followed by the telecommunication sector, which discloses 55.47%. The tannery sector discloses the lowest amount of voluntary information (22.40%). So it can be concluded that Tannery sector of Bangladesh discloses the lowest amount of mandatory and voluntary information on the internet.

6.5 Measuring the Determinants of Disclosure:

One of the objectives of this study is to examine the relationship between the level of disclosure and the determinants of disclosing both mandatory and voluntary information on the internet. As discussed in Chapter 5 (methodology), the determinants of the level of disclosure that are tested in this study are firm size, profitability measured by ROE and ROA, audit firm's international link,

multinational parent, leverage, liquidity measured by current ratio and quick ratio, market category, industry type, independent director, board size, dual leadership structure, ownership structure, and company age measured by listed year and establishment year. These determinants are then divided into two equations-one is for the combined sample and the other is for non-financial companies. Here the study examines the relationship between the level of disclosure and the determinants for non financial companies.

The equation based on the combined sample stands as:

Equation 1:

ICRIM = β_0 + β1 LDASST + β2 ROE +β3 ROA + β4 AUDITOR + β5 MNC + β6 FIN + β7CURRENT + β8 MKTCATE + β9 IND + β10 BOSIZE + β11 RODUAL + β12 SPONSOR + β13 LISYR + β14 ESTABYR +Є

Equation 2:

ICRIV = β_0 + β1 LDASST + β2 ROE +β3 ROA + β4 AUDITOR + β5 MNC + β6 FIN + β7CURRENT + β8 MKTCATE + β9 IND + β10 BOSIZE + β11 RODUAL + β12 SPONSOR + β13 LISYR + β14 ESTABYR +Є

The equation based on the non-financial companies stands as:

Equation 3:

ICRIM = β_0 + β1 LDASST + β2 ROE +β3 ROA + β4 AUDITOR + β5 MNC + β6 LEV + β7CURRENT + β8 QUICK + β9 MKTCATE + β10 IND + β11 BOSIZE + β12 RODUAL + β13 SPONSOR + β14 LISYR + β15 ESTABYR +Є

Equation 4:

ICRIV = β_0 + β1 LDASST + β2 ROE +β3 ROA + β4 AUDITOR + β5 MNC + β6 LEV + β7CURRENT + β8 QUICK + β9 MKTCATE + β10 IND + β11 BOSIZE + β12 RODUAL + β13 SPONSOR + β14 LISYR + β15 ESTABYR +Є

6.5.1 Descriptive Statistics for Dependent Variable (Combined Sample):

Table 6.6 represents the descriptive statistics for the determinants of disclosing information (both voluntary and mandatory) on the internet. The minimum score of zero, in the table, reveals that some companies do not disclose information under any of the categories. The mean indicates the average number of items disclosed by companies under each category.

As indicated in the table, the mean firm size is 9.53 with a minimum 0.0816 and a maximum 11.684. The profitability measured by ROE ranges from - 832% to 99.8% with an average of 9.47%, while profitability measured by ROA ranges from -36.73% to 99.1% with an average of 7.12%. It is also identified that only 19.66% observation audited by Big four audit firm and 12.82% companies are operated by multinational parents. Regarding the market category, only 12.82% of companies are in the “Z” category. The average size of board is around 10 members and the number of independent directors is only one member. In 86.75% company, different people occupy the position of CEO and chairman and 45.73% companies have a concentrated ownership structure.

Moreover, it is observed from the table that the data is not normally distributed as the skewness of firm size, profitability measured by ROE and ROA, multinational parent, liquidity, market category, board structure measured by dual leadership structure and company age measured by year of establishment exceeds the standard normality range of ± 1.96 (Haniffa and Hudaib 2006). In the same way, with reference to the standard kurtosis the data is also considered not to be normally distributed as firm size; profitability (ROE); profitability (ROA); audit firm; multinational parent; liquidity; market category; number of independent directors in the board; board size; and dual leadership structure, and company age measured both by number of year listed and number of years established exceeds the standard normality range of ±3 (Haniffa and Hudaib 2006; Gujrati 2003). The figures in table 6.5 indicate that the observations have some extreme figures (outliers) which need further investigation. Therefore, based on the skewness and kurtosis the data of the different variables is not normally distributed and is considered to be non parametric data.

Table 6.6: Descriptive Statistics for Dependent Variable (combined)

	N	Mean	Media	Std. Deviat	Mini-mum	Maxi-Mum	Skew-Ness	Kur-Tosis
Firm Size	234	9.5329	9.505	1.077	0.0816	11.684	-2.759	26.972
ROE	234	0.0947	0.090	0.591	-8.3256	0.998	-12.377	178.198
ROA	234	0.0712	0.035	0.173	-0.3673	0.991	3.793	19.501
Audit Firm	234	0.1966	0	0.398	0	1	1.527	3.332
Industry type	234	0.3974	0	0.490	0	1	0.419	1.176
Multi Parents	234	0.1282	0	0.335	0	1	2.224	5.947
Liquidity	234	1.959	1.522	1.491	0.053	9.803	1.957	7.582
Mkt Category	234	0.1282	0	0.335	0	1	2.224	5.947
Inde Director	234	1.3632	1	0.954	0	5	0.528	3.557
Board Size	234	10.0171	9	4.307	2	22	0.882	3.086
Role Duality	234	0.8675	1	0.340	0	1	-2.168	5.701
Owner Struc	234	0.4573	0	0.499	0	1	0.172	1.029
Listed Year	234	14.4872	13	10.232	0	45	0.481	2.292
Estab year	234	23.9316	18	16.402	1	190	4.731	46.220

6.5.2 Descriptive Statistics for Dependent Variable (non financial sample):

Table 6.7 shows the descriptive statistics for the determinants of disclosing both mandatory and voluntary information on the internet by the non financial listed companies in Bangladesh. From the table it can be observed that there are 141 number of observation which indicates the sample size for non-financial companies. The 'mean' indicates the average number of items disclosed by the companies under each category.

The firm size is about 9.23 with a minimum of 0.082 and a maximum of11.068: this is quite similar to the result of combined sample. Firm's profitability measured by ROE is about 0.0462 with minimum of -8.326 and maximum of 0.908: the mean of firm's profitability measured by ROA is about 0.0494. It is notable that only 16.31% companies are audited by Big four audit firms and only 14.18% companies have multinational parent. Also leverage which is measured by debt to equity ratio is 1.45:1 for non financial companies and the liquidity ratio measured by current ratio and quick ratio are 1.73 and 1.21 respectively. Only 18.44% non-financial companies are in the Z category. Regarding the

number of independent director, the average is about 1.18 or 1 person, which varies from 0 to 4 persons whereas the average size of the board is about 7.46 or 7 person. It can also be observed that 79.43% of companies have dual leadership structure while 51.06% of companies are operating under sponsor ownership.

The skewness of the different determinants indicates that the data of the different variables are not normally distributed because the maximum skewness is 9.105 represented by leverage, while the minimum skewness is -10.770 represented by profitability measured by ROE. This value of maximum skewness is not within the range of ± 1.96 which indicates that the data set is not normal (Haniffa and Hudaib 2006). Therefore the data set is considered as non parametric data. Again the maximum kurtosis is 123.42 represented by profitability measured by ROE is also not within the range of ±3 (Haniffa and Hudaib 2006). Therefore the data set is not normal and considered to be non parametric data.

Table 6.7: Descriptive Statistics for Dependent Variable (non financial)

	N	Mean	Median	Std. Deviation	Mini-Mum	Maxi-Mum	Skew-Ness	Kur-Tosis
Firm Size	141	9.2334	9.3379	1.070	0.082	11.068	-4.546	39.402
ROE	141	0.0462	0.0795	0.731	-8.326	0.908	-10.770	123.742
ROA	141	0.0494	0.0387	0.081	-0.308	0.475	0.551	11.522
Audit Firm	141	0.1631	0	0.371	0	1	1.824	4.325
Multi Parents	141	0.1418	0	0.350	0	1	2.053	5.215
Leverage	141	1.454	0.678	2.5572	-6.38	12.26	2.203	9.9207
Liqu.(Curr ratio)	141	1.735	1.3048	1.455	0.0526	9.803	2.689	11.798
Quick Ratio	141	1.212	0.8633	1.305	0.0441	8.953	3.171	15.058
Mkt Category	141	0.1844	0	0.389	0	1	1.628	3.649
Inde Director	141	1.1844	1	0.789	0	4	0.275	3.117
Board Size	141	7.5106	7	2.0305	4	14	0.6755	3.3861
Role Duality	141	0.7943	1	0.406	0	1	-1.456	3.121
Owner Struc	141	0.5106	1	0.502	0	1	-0.043	1.002
Listed Year	141	15.7305	16	11.293	0	45	0.240	2.003
Estab Year	141	26.7518	23	19.684	1	190	4.160	34.592

6.6 Correlation Analysis for Mandatory (Combined) Model:

Correlation analysis gives an estimate as to the degree of association between the variables. In fact, it tests for interdependence of the variables. In this study, correlation analysis is used to identify the degree of association between the dependent and independent variables. With the help of this type of analysis, it is also possible to identify the correlation among the independent variables. Moreover, it recognises whether the data needs to change or whether any independent variables need to remove. So, before moving to the regression analysis, this study performed correlation analysis to identify whether all the independent variables are suitable for the multiple regression analysis.

6.6.1 Correlation of Independent Variables for Mandatory Disclosure:

To start the analysis, this section examines the association between the extent of total mandatory disclosure as the dependent variable and each of the independent variables for the combined sample. As the data set is non parametric, the Spearman's rank correlation is used to test the association between the variables. After that the study also uses Pearson correlation coefficient. The significance association is identified using a confidence level of 99% and 95%.

Referred to table 6.8 the correlation coefficient of both the Spearman test and the Pearson test, shows there is a significant positive relationship (at 1% and 5% significance level) between total mandatory disclosure and firm size, audit firm, industry category, multinational parent, independent director, board size, dual leadership structure. This means that there is a strong association between these variables and the level of mandatory disclosure on the internet. The results suggest that companies with big size, audited by Big four audit firm, financial companies, multinational companies, high number of independent director in the board, large board size and dual leadership structured companies, disclose more mandatory information on their website. On the other hand there is a significant negative association between the level of mandatory disclosure and market category and company age measured by listed year. This implies that companies that are in the Z category disclose less mandatory information on their website.

Moreover according to the Spearman test, firm's profitability measured by ROE and liquidity are significantly positively associated with the level of disclosing mandatory information on the internet, although the Pearson test found non significant association between them. Similarly, while the Pearson test found that firm profitability measured by ROA, has a significant positive association with the disclosure level, it is found non-significant association in Spearman test.

However, companies' ownership structure and establishment year have no significant relationship with the level of mandatory disclosure on the internet under both tests. This result suggests that the ownership concentration does not affect the level of disclosing the information on the internet and at the same time company age also has no impact.

Table 6.8: Correlation between Mandatory Disclosure and Independent Variables (combined)

Variables	Spearman	Pearson
Firm size	.384**	.285**
ROE	.137*	.064
ROA	.088	.131*
Audit firm	.389**	.309**
Industry	.248**	.234**
Multinational parent	.219**	.162*
Liquidity	.147*	.091
Market category	-.317**	-.329**
Independent director	.304**	.305**
Board size	.246**	.175**
Role Duality	.383**	.447**
Ownership	.103	.095
Listed year	-.132*	-.136*
Establishment year	-.053	-.035

6.6.2 Categorical Independent Variables for Mandatory Disclosure:

Regarding the different categories of mandatory disclosure under Spearman correlation coefficient (table 6.9) there is a significant positive association between different categories of mandatory disclosure and firm size, audit firm's international link, industry type, multinational parent, independent director in the board, board size and dual leadership structure. The result also indicates that there is a significant negative association between the categories of disclosure and market category. In addition, there is significant positive association between the total mandatory disclosure, general disclosure and income statement disclosure with the profitability measured by ROE. On the other hand, profitability measured by ROA has only positive association with general disclosure. Liquidity measured by current ratio is also significant for disclosing total mandatory information, general information and balance sheet information on the web but company age measured by listing year is significantly negatively associated with total mandatory disclosure and general disclosure on the website.

Table 6.10 represents the correlation between the different categories of mandatory disclosure and the determinants of disclosing information on the website for the combined sample by using Pearson's correlation coefficient. The results of combined sample using Pearson's correlation do not significantly differ from the results of combined sample using Spearman's correlation with the exception of profitability (measured by ROE and ROA) and liquidity of the companies.

From the table 6.10 it can be observed that profitability measured by ROE has no significant relationship with total mandatory disclosure and its different categories but profitability measured by ROA has a significant positive relationship with total mandatory disclosure and balance sheet disclosure. Moreover liquidity has no significant relationship with the total mandatory disclosure and its different categories but company age (listing year) is negatively associated with the total mandatory disclosure, general disclosure and balance sheet disclosure.

Table 6.9: Spearman's Correlation for Dependent and Independent Variables (Mandatory- combined)

	Total Mand	General	Direct	B.sht	Income	Firm_ size	ROE	ROA	Audit Firm	Indust Ry	Mul. nati	Curren Trat	Market Cate	Ind director	Board size	Role duality	Owner Ship	Listed yr	Estab yr
Total Manda	1.00																		
General	.879**	1.00																	
Direct _repo	.891**	.821**	1.00																
Balancesheet	.920**	.813**	.770**	1.00															
Income state	.934**	.754**	.766**	.826**	1.00														
Firm size	.384**	.411**	.381**	.439**	.290**	1.00													
ROE	.137*	.208**	.099	.118	.147*	.122	1.00												
ROA	.088	.131*	.074	.047	.100	-.163*	.670**	1.00											
Audit firm	.389**	.374**	.361**	.350**	.330**	.394**	.190**	-.024	1.00										
Industry	.248**	.222**	.189**	.309**	.217**	.333**	.132*	-.098	.104	1.00									
Multinational	.219**	.169**	.199**	.169**	.213**	.147*	.168*	.070	.100	-.050	1.00								
Current ratio	.147*	.142*	.116	.173**	.126	.227**	.085	.169**	.083	.239**	-.060	1.00							
Market cate	-.317**	-.318**	-.324**	-.290**	-.306**	-.267**	-.308**	-.301**	-.190**	-.207**	-.109	-.198**	1.00						
Indepdirector	.304**	.329**	.340**	.280**	.258**	.236**	.061	.030	.205**	.217**	.140*	.002	-.147*	1.00					
Board size	.246**	.203**	.197**	.281**	.228**	.297**	.221**	.073	.195**	.745**	-.005	.137*	-.244**	.269**	1.00				
Role duality	.383**	.393**	.369**	.341**	.376**	.187**	.171**	.065	.162*	.266**	.112	.115	-.340**	.231**	.247**	1.00			
Ownership	.103	.096	.127	.070	.092	.077	.083	-.017	.194**	-.132*	.161*	-.014	-.044	.079	-.024	.131*	1.00		
Listed yr	-.132*	-.188**	-.111	-.104	-.107	-.163*	-.079	-.171**	.021	-.099	.145*	-.087	.150*	-.077	-.065	-.100	.000	1.00	
Establishe yr	-.053	-.128	-.077	-.037	-.026	-.073	-.041	-.148*	.106	-.202**	.109	-.081	.025	-.062	-.124	.102	.183**	.749**	1.00

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

Table 6.10: Pearson's Correlation for Dependent and Independent Variables (Mandatory- combined)

	Total Man	Gener	Direct	Bal. sheet	Income State	Firm size	ROE	ROA	Audit firm	Indust Ry	Mul. Nati	Curren Trat	Market Cate	Ind Direct.	Board size	Role duality	Owner ship	Listed yr	Estab Yr
TotalMandatory	1																		
General	.971**	1																	
Director_repo	.857**	.853**	1																
Balancesheet	.984**	.951**	.798**	1															
Incomestate	.974**	.910**	.792**	.942**	1														
Firm_size	.285**	.293**	.273**	.307**	.232**	1													
ROE	.064	.080	.070	.027	.084	.170**	1												
ROA	.131*	.125	.047	.151*	.126	.081	.354**	1											
Auditfirm	.309**	.296**	.351**	.283**	.300**	.319**	.043	-.029	1										
Industry	.234**	.209**	.184**	.235**	.241**	.343**	.101	.155*	.104	1									
Multinational	.162*	.155*	.196**	.137*	.166*	.138*	.043	-.006	.100	-.050	1								
Currentratio	.091	.094	.039	.090	.095	.063	.133*	.367**	-.002	.141*	-.085	1							
Marketcate	-.329**	-.325**	-.337**	-.308**	-.317**	-.288**	-.234**	-.179**	-.190**	-.207**	-.109	-.106	1						
inddirector	.305**	.309**	.319**	.286**	.288**	.201**	.096	.049	.173**	.231**	.122	.014	-.146*	1					
Boardsize	.175**	.159*	.162*	.172**	.175**	.249**	.143*	.215**	.111	.732**	-.019	.062	-.219**	.278**	1				
Roleduality	.447**	.439**	.381**	.429**	.445**	.136*	.172**	.108	.162*	.266**	.112	.113	-.340**	.215**	.224**	1			
Ownership	.095	.073	.122	.090	.098	.047	-.059	-.077	.194**	-.132*	.161*	-.089	-.044	.046	-.078	.131*	1		
Listedyr	-.136*	-.152*	-.120	-.133*	-.120	-.168*	-.018	-.137*	.047	-.150*	.159*	-.095	.126	-.096	-.101	-.089	.036	1	
Estab. yr	-.035	-.056	-.052	-.040	-.009	-.044	.028	-.060	.170**	-.212**	.177**	-.118	.016	-.041	-.107	.083	.205**	.575**	1

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

6.6.3 Correlation of Independent Variables for Mandatory Disclosure (non-financial):

To start the analysis, this section examines the association between the extent of total mandatory disclosure as the dependent variable and each of the independent variables for non-financial companies in Bangladesh. As the data set is non parametric, the Spearman's rank correlation is used first to test the association between the variables. After that the study uses the Pearson correlation coefficient.

Table 6.11: Correlation between Mandatory Disclosure and Independent Variables (non financial):

Variables	Spearman	Pearson
Firm size	.351**	.164
ROE	.175*	.040
ROA	.326**	.279**
Audit firm	.344**	.276**
Multinational parent	.340**	.267**
Leverage	-.167*	-.100
Current ratio	.159	.120
Quick Ratio	.064	.106
Market category	-.302**	-.297**
Independent director	.345**	.378**
Board size	.157	.085
Role Duality	.397**	.443**
Ownership	.186*	.186*
Listed year	-.152	-.147
Established year	-.041	.005

From the table 6.11 it can be observed that seven explanatory variables are significantly associated with the level of disclosing mandatory information on the internet under both the Spearman and Pearson correlation test. While profitability measured by ROA, audit firm's international link, multinational parent, independent director, dual leadership structure and ownership structure are all positively and significantly associated with the level of mandatory disclosure, market category is significantly negatively associated with the disclosure level. This suggests that high profitability (measured by ROA) firms,

the firms which are audited by Big four audit firms and who have independent director in the board, dual leadership structure in the board and sponsored companies are more willing to comply with the mandatory requirement.

It is also notable that firms' liquidity measured by both current ratio and quick ratio, board size and company age measured by both companies' listed year and establishment year have non-significant association with the mandatory disclosure level. Moreover, according to the Spearman test, firm size and firm's profitability measured by ROE are significantly positively associated with the level of disclosing mandatory information on the internet: however, the Pearson test found non-significant association between them. Similarly, while the Spearman test found leverage has significant negative association with the disclosure level, it is found to have a non-significant association in Pearson test.

6.6.4 Categorical Independent Variables for Mandatory Disclosure (Non Financial Companies):

Regarding the correlation coefficient of different categories of mandatory disclosure under the Spearman's rank correlation (table 6.12) firm size, profitability measured by ROA, audit firm's international link, multinational parent, independent director in the board, dual leadership structure have significant positive association with different categories of mandatory disclosure: while companies liquidity measured by quick ratio, board size and company age measured by establishment year have non significant association with different categories of mandatory disclosure on the website. Only market category is significantly negatively associated with all the categories of disclosure.

From the table 6.12 it can also be observed that under the Spearman test, profitability measured by ROE has only significant positive association with general disclosure and income statement information disclosure whereas leverage has significant negative association with the disclosure of director's report information. In addition, companies liquidity measured by current ratio is also positively and significantly related with the disclosure of balance sheet items. Moreover, company ownership has significant positive association with general disclosure, disclosure of director's report and balance sheet while

company age measured by listed year has significant negative association with the level of companies' general information disclosure on the internet.

The results of Pearson test (table 6.13) are also supportive with Spearman tests where the correlation coefficient of different categories of mandatory disclosure are significantly positively associated with firm's profitability measured by ROA, audit firm's international link, multinational parent, independent director in the board, dual leadership structure and significantly negatively associated with market category. However, firms profitability measured by ROE, firms liquidity measured by both current ratio and quick ratio and company age measured by both listed year and establishment year have non significant association with different categories of mandatory disclosure by the non-financial companies.

In addition, firm size has significant positive association with general disclosure, disclosure of director's report and disclosure of balance sheet while companies' ownership structure has significant positive association with the disclosure of director's report, balance sheet and income statement. Leverage has only significant negative association with the disclosure of the director's report on their website.

Table 6.12: Spearman's Correlation for Dependent and Independent Variables (Mandatory- non financial)

	Total Mand	Genera	Direct	Balsh	Income	Firm size	ROE	ROA	Audit firm	Multi nation	Lever age	Current ratio	Quick Ratio	Market Cate	Ind director	Board size	Dual leadest	Owner ship	Listed yr	Estab yr
Total Mandat	1.00																			
General	.893**	1.00																		
Director_repo	.891**	.825**	1.00																	
Balancesheet	.943**	.830**	.794**	1.00																
Incomestate	.946**	.802**	.785**	.875**	1.00															
Firm_size	.351**	.373**	.341**	.352**	.257**	1.00														
ROE	.175*	.238**	.122	.115	.200*	.203*	1.00													
ROA	.326**	.366**	.300**	.284**	.289**	.291**	.727**	1.00												
Auditfirm	.344**	.350**	.298**	.294**	.315**	.282**	.324**	.303**	1.00											
Multinational	.340**	.298**	.283**	.288**	.326**	.115	.276**	.253**	.151	1.00										
Leverage	-.167*	-.145	-.194*	-.157	-.159	-.098	.209*	-.204*	.031	.097	1.00									
Currentratio	.159	.115	.158	.170*	.112	.191*	.007	.337**	.094	-.098	-.384**	1.00								
Quick Ratio	.064	.028	.065	.110	.031	.117	-.035	.279**	.077	-.105	-.364**	.756**	1.00							
Marketcate	-.302**	-.288**	-.308**	-.277**	-.270**	-.293**	-.307**	-.398**	-.210*	-.141	-.036	-.239**	-.246**	1.00						
Inddirector	.345**	.372**	.408**	.330**	.290**	.271**	.154	.191*	.257**	.188*	.035	-.022	.012	-.157	1.00					
Boardsize	.157	.087	.097	.145	.161	.284**	.142	.175*	.350**	.074	.014	.071	.098	-.121	.245**	1.00				
Roleduality	.397**	.413**	.390**	.339**	.393**	.099	.160	.167*	.177*	.157	.034	.039	.065	-.301**	.238**	.099	1.00			
Ownership	.186*	.205*	.206*	.170*	.165	.201*	.323**	.122	.317**	.235**	.203*	-.004	-.004	-.120	.242**	.262**	.239**	1.00		
Listedyr	-.152	-.221**	-.154	-.114	-.112	-.333**	-.063	-.183*	.003	.147	.161	-.091	-.058	.131	-.034	.091	-.064	.039	1.00	
Establishedyr	-.041	-.126	-.100	-.017	-.007	-.133	.030	-.175*	.124	.112	.200*	-.057	-.077	.004	-.027	.156	.182*	.214*	.727**	1.00

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

Table 6.13: Pearson Correlation for Dependent and Independent Variables (Mandatory- non financial)

	Total Manda	Genera	Direct	Balsh	Income	Firm size	ROE	ROA	Audit firm	Multi nation	Lever Age	Current ratio	Quick Ratio	Market cate	Ind director	Board size	Dual leadst	Owner ship	Listed yr	Estab yr
Total Mandatory	1																			
General	.978**	1																		
Director_repo	.870**	.859**	1																	
Balancesheet	.986**	.961**	.817**	1																
Incomestat	.979**	.930**	.821**	.948**	1															
Firm_size	.164	.195*	.167*	.178*	.117	1														
ROE	.040	.066	.087	-.015	.065	.195*	1													
ROA	.279**	.286**	.294**	.271**	.255**	.369**	.289**	1												
Auditfirm	.276**	.266**	.300**	.242**	.286**	.181*	.086	.313**	1											
Multinational	.267**	.252**	.279**	.239**	.278**	.088	.082	.221**	.151	1										
Leverage	-.100	-.143	-.177*	-.048	-.059	0.144	-.056	-.035	.111	-.004	1									
Currentratio	.120	.125	.157	.117	.100	.103	.062	.198*	.032	-.111	-.140	1								
Quick Ratio	.106	.107	.021	.105	.122	.000	.040	.148	-.019	-.103	-.097	.604**	1							
Marketcate	-.297**	-.293**	-.318**	-.275**	-.289**	-.282**	-.233**	-.356**	-.210*	-.141	.124	-.142	-.130	1						
Inddirector	.378**	.376**	.425**	.364**	.348**	.187*	.126	.122	.238**	.163	-.124	-.017	-.090	-.158	1					
Boardsize	.085	.062	.103	.075	.099	.251**	.128	.163	.369**	.075	-.091	.000	-.045	-.122	.241**	1				
Roleduality	.443**	.439**	.398**	.420**	.442**	.022	.160	.180*	.177*	.157	-.123	.089	.102	-.301**	.231**	.095	1			
Ownership	.186*	.159	.201*	.185*	.184*	.170*	-.020	.139	.317**	.235**	.171*	-.015	-.071	-.120	.230**	.276**	.239**	1		
Listedyr	-.147	-.163	-.144	-.155	-.117	-.310**	.019	-.142	.005	.152	-.009	-.073	-.079	.119	-.035	.052	-.054	.048	1	
Establish yr	.005	-.022	-.029	-.004	.040	-.024	.060	-.034	.218**	.200*	.013	-.108	-.122	-.014	.028	.162	.152	.223**	.534**	1

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

6.7 Correlation Analysis for Voluntary Disclosure:

6.7.1 Correlation of Independent Variables for Voluntary Disclosure (combined):

This section examines the association between the extent of total voluntary disclosure as the dependent variable and each of the independent variables for the combined sample. As discussed earlier, Spearman's rank correlation as a non-parametric test and Pearson's correlation as a parametric test have been applied in this study. Table 6.14 represents the correlation coefficient based on the actual data.

The Spearman's correlation coefficient in table 6.14 indicates that nine explanatory variables (firm size, profitability measured by ROE, audit firm's international link, industry type, multinational parent, liquidity, independent director in the board, board size and dual leadership structure) are significantly and positively associated with the level of total voluntary disclosure on the website. On the other hand, market category and company's listing year are significantly and negatively associated with the level of voluntary disclosure.

This result suggests that the larger the size of the company, the more information is voluntarily disclosed. Similarly, companies with high profitability (measured by ROE), audited by Big four audit firm, financial companies, multinational parents, higher liquidity position, high number of independent directors in the board, large board size and dual leadership structure in the board are willing to disclose more voluntary information on their website. However, the correlation coefficient suggests a weak or non-significant association between the level of total voluntary disclosure and a company's profitability measured by ROA, a company's ownership structure and its establishment year.

As indicated in table 6.14 the Pearson correlation coefficient supports the result from the Spearman test in respect of firm size, audit firm's international link, industry type, multinational parent, liquidity, market category, independent director, board size and dual leadership structure, All these variables are significantly associated with the level of total voluntary disclosure at 1% and 5% significance level. However, results regarding the profitability measured by ROA

and companies listing year are found to be significant under Spearman test but they are non- significant according to the Pearson test.

Table 6.14: Correlation between Voluntary Disclosure and Independent Variables (combined)

Variables	Spearman	Pearson
Firm size	.625**	.538**
ROE	.216**	.076
ROA	-.001	.016
Audit firm	.434**	.450**
Industry category	.347**	.365**
Multinational parent	.254**	.291**
Liquidity	.166*	.132*
Market category	-.332**	-.310**
Independent director	.340**	.315**
Board size	.297**	.253**
Dual leadership structure	.425**	.387**
Ownership structure	.104	.108
Listing year	-.130*	-.086
Establishment year	-.100	.029

6.7.2 Categorical Independent Variables for Voluntary Disclosure:

To test the association between the dependent variable and the different categories of independent variable, Spearman and Pearson correlation tests have been employed. From the table 6.15 and 6.16, it can be concluded that firm size, audit firm's international link, industry type, multinational parent, independent director in the board, board size and dual leadership structure are significantly and positively associated with the different categories of voluntary disclosure on the website while establishment year has a non significant negative association.

According to Spearman correlation coefficient profitability measured by ROE is significantly positively associated with all the categories of voluntary disclosure except environmental disclosure on the web but profitability measured by ROA

has only significant negative association with environmental and investor related disclosure. Liquidity has also significant positive association with strategic information disclosure, corporate governance disclosure, financial disclosure, sustainability disclosure and investor related information. Market category is significantly negatively associated withall the categories of voluntary disclosure except environmental disclosure. Both ownership structure and companies listing year have mixed result. While ownership structure has a positively significant relationship with general disclosure, CSR and investor related information disclosure, companies listing year has significant negative association with general disclosure, corporate governance and investor related information disclosure on the web.

In case of Pearson correlation, profitability measured by ROE and ROA and companies establishment year has no significant relationship with the different categories of voluntary disclosure on the web. Company's liquidity and ownership structure have significant positive association and listing year has significant negative association with investor related information disclosure on the web. Company's liquidity has also significant positive association with corporate governance disclosure, whereas a company's ownership structure has a significant positive relationship with CSR disclosure. However, company's listing year has a significant negative relationship with general disclosure and corporate governance disclosure on the web. Market category has a significant negative association with all the categories of voluntary disclosure except environmental disclosure on websites.

Table 6.15: Spearman's Correlation for Dependent and Independent Variables (Voluntary- combined)

	Voluntary	General	Strategic	Governance	Financial	CSR	Environment	Sustainability	Investor	Presentation	Firm_size	ROE	ROA	Audit-firm	Industry	Mul.national	Currentrat	Market cate	Ind_dir	Board-size	Dual Istructure	Ownership	Listedyr	Establishment
Voluntary	1.00																							
General	.864**	1.00																						
Strategic	.870**	.828**	1.00																					
Governance	.888**	.785**	.755**	1.00																				
Financial	.914**	.767**	.791**	.826**	1.00																			
CSR	.768**	.624**	.667**	.598**	.635**	1.00																		
Environmental	.672**	.495**	.506**	.517**	.530**	.722**	1.00																	
Sustainability	.871**	.673**	.718**	.754**	.765**	.721**	.662**	1.00																
Investor	.751**	.635**	.653**	.592**	.641**	.488**	.413**	.578**	1.00															
Presentation	.719**	.580**	.551**	.537**	.604**	.517**	.466**	.588**	.681**	1.00														
Firm_size	.625**	.498**	.488**	.530**	.541**	.630**	.543**	.578**	.360**	.493**	1.00													
ROE	.216**	.147*	.139*	.194**	.193**	.157*	.089	.186**	.277**	.227**	.122	1.00												
ROA	-.001	-.002	.036	.018	.009	-.089	-.159*	-.067	.164*	.049	-.163*	.670**	1.00											
Auditfirm	.434**	.335**	.360**	.434**	.451**	.388**	.313**	.380**	.222**	.264**	.394**	.190**	-.024	1.00										
Industry	.347**	.226**	.242**	.304**	.361**	.249**	.232**	.407**	.162*	.233**	.333**	.132*	-.098	.104	1.00									
Multinational	.254**	.186**	.201**	.243**	.178**	.243**	.263**	.238**	.209**	.201**	.147*	.168*	.070	.100	-.050	1.00								
Currentratio	.166*	.099	.161*	.153*	.148*	.104	.033	.159*	.131*	.094	.250**	.072	.140*	.098	.242**	-.050	1.00							
Marketcate	-.332**	-.351**	-.315**	-.340**	-.335**	-.199**	-.119	-.206**	-.273**	-.240**	-.267**	-.308**	-.301**	-.190**	-.207**	-.109	-.191**	1.00						
inddirector	.340**	.358**	.311**	.356**	.318**	.193**	.155*	.228**	.264**	.259**	.236**	.061	.030	.205**	.217**	.140*	-.005	-.147*	1.00					
Boardsize	.297**	.193**	.195**	.262**	.319**	.207**	.186**	.325**	.193**	.254**	.297**	.221**	.073	.195**	.745**	-.005	.128*	-.244**	.269**	1.00				
Roleduality	.425**	.400**	.354**	.434**	.391**	.263**	.191**	.364**	.336**	.255**	.187**	.171**	.065	.162*	.266**	.112	.106	-.340**	.231**	.247**	1.00			
Ownership	.104	.134*	.104	.121	.074	.158*	.056	.001	.132*	-.014	.077	.083	-.017	.194**	-.132*	.161*	.010	-.044	.079	-.024	.131*	1.00		
Listedyr	-.130*	-.137*	-.125	-.144*	-.087	-.096	-.025	-.094	-.162*	-.087	-.163*	-.079	-.171**	.021	-.099	.145*	-.073	.150*	-.077	-.065	-.100	.000	1.00	
Establish yr	-.100	-.079	-.117	-.122	-.074	-.062	-.038	-.077	-.118	-.029	-.073	-.041	-.148*	.106	-.202**	.109	-.065	.025	-.062	-.124	.102	.183**	.749	1

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

Table 6.16: Pearson Correlation for Dependent and Independent Variables (Voluntary- combined)

	Voluntary	General	Strategic	Governance	Financial	CSR	Environment	Sustainability	Investor	Presentation	Firm_size	ROE	ROA	Audit-firm	Industry	Mul.national	Currentrat	Market cate	Ind_dir	Board-size	leadership structure	Ownership	Listedyr	Establishment
Voluntary	1																							
General	.813**	1																						
Strategic	.844**	.734**	1																					
Governance	.847**	.792**	.703**	1																				
Financial	.882**	.769**	.750**	.859**	1																			
CSR	.830**	.549**	.692**	.553**	.592**	1																		
Environmental	.728**	.417**	.519**	.420**	.470**	.777**	1																	
Sustainability	.884**	.605**	.734**	.635**	.684**	.839**	.750**	1																
Investor	.716**	.631**	.590**	.589**	.627**	.450**	.413**	.486**	1															
Presentation	.719**	.592**	.518**	.535**	.593**	.489**	.469**	.563**	.670**	1														
Firm_size	.538**	.386**	.400**	.425**	.436**	.527**	.407**	.531**	.301**	.426**	1													
ROE	.076	.100	.076	.056	.099	.040	.024	.055	.067	.052	.170**	1												
ROA	.016	.048	.047	.068	.064	-.077	-.090	-.028	.080	.048	.081	.354**	1											
Auditfirm	.450**	.319**	.378**	.394**	.429**	.403**	.302**	.442**	.224**	.263**	.319**	.043	-.029	1										
Industry	.365**	.234**	.249**	.296**	.344**	.312**	.242**	.444**	.144*	.233**	.343**	.101	.155*	.104	1									
Multinational	.291**	.186**	.202**	.228**	.180**	.314**	.304**	.259**	.228**	.214**	.138*	.043	-.006	.100	-.050	1								
Currentratio	.132*	.119	.118	.132*	.123	.077	.065	.117	.129*	.072	.182**	.091	.156*	.084	.190**	-.076	1							
Marketcate	-.310**	-.354**	-.282**	-.346**	-.345**	-.176**	-.087	-.200**	-.270**	-.235**	-.288**	-.234**	-.179**	-.190**	-.207**	-.109	-.113	1						
inddirector	.315**	.321**	.270**	.330**	.300**	.235**	.179**	.220**	.233**	.255**	.201**	.096	.049	.173**	.231**	.122	-.031	-.146*	1					
Boardsize	.253**	.169**	.164*	.193**	.255**	.206**	.137*	.270**	.172**	.221**	.249**	.143*	.215**	.111	.732**	-.019	.022	-.219**	.278**	1				
Roleduality	.387**	.429**	.314**	.452**	.401**	.230**	.167*	.277**	.316**	.237**	.136*	.172**	.108	.162*	.266**	.112	.123	-.340**	.215**	.224**	1			
Ownership	.108	.125	.123	.109	.076	.153*	.068	.032	.133*	-.011	.047	-.059	-.077	.194**	-.132*	.161*	.011	-.044	.046	-.078	.131*	1		
Listedyr	-.086	-.152*	-.070	-.146*	-.090	.003	.036	-.024	-.147*	-.078	-.168*	-.018	-.137*	.047	-.150*	.159*	-.050	.126	-.096	-.101	-.089	.036	1	
Establishedyr	.029	-.013	-.003	-.076	-.009	.063	.104	.080	-.007	.086	-.044	.028	-.060	.170**	-.212**	.177**	-.093	.016	-.041	-.107	.083	.205**	.575**	1

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

6.7.3 Correlation of Independent Variables for Voluntary Disclosure (Non Financial):

To start the analysis, this section examines the association between the extent of total voluntary disclosure as the dependent variable and each of the independent variables for non-financial companies in Bangladesh. As the data set is non parametric, the Spearman's rank correlation is used first to test the association between the variables. After that the study uses Pearson correlation coefficient.

Table 6.17: Correlation between Voluntary Disclosure and Independent Variables

Variables	Spearman	Pearson
Firm size	.478**	.324**
ROE	.315**	.107
ROA	.422**	.408**
Audit firm	.370**	.405**
Multinational parent	.018	-.068
Leverage	.307**	.391**
Current ratio	.123	.047
Quick ratio	.031	.025
Market category	-.339**	-.324**
Independent director	.437**	.419**
Board size	.163	.188*
Dual leadership structure	.441**	.410**
Ownership structure	.224**	.259**
Listed year	-.201*	-.139
Established year	-.090	.151

From the table 6.17 it can be observed that both Spearman rank correlation coefficient and Pearson correlation coefficient found eight explanatory variables that are significantly associated with the level of disclosing voluntary information on the internet. While firm size, profitability measured by ROA, audit firm's international link, leverage, independent director in the board, dual leadership structure and ownership structure are all positively and significantly associated with the level of voluntary disclosure, market category is significantly negatively

associated with the disclosure level. This suggest that large companies with high profitability (measured by ROA) , companies which are audited by one of the Big four audit firms and who have independent director in the board, dual leadership structure in the board and firms which are sponsored companies are more willing to disclose voluntary information on their website.

It is also notable that multinational firms, companies with liquidity measured by both current ratio and quick ratio and company age measured by the establishment year have a non-significant association with voluntary disclosure level. Moreover, according to the Spearman test, firm's profitability measured by ROE is significantly positively associated with the level of disclosing voluntary information on the internet. However, the Pearson test found a non-significant association between them. Similarly, while the Spearman test found company age measured by listed year, has a significant negative association with the disclosure level, it had a non-significant association in Pearson test. The Pearson test found a significant positive association between board size and the level of disclosure, whereas Spearman found a non-significant association between them.

6.7.4 Categorical Independent Variables for Voluntary Disclosure (Non Financial Companies):

The correlation between the different categories of voluntary disclosure and the determinants of disclosure is shown in the table 6.18 and table 6.19 for non-financial companies by using the Spearman Rank correlation and the Pearson correlation coefficient respectively. Under both methods, profitability measured by ROA, audit firm's international link, and leverage have significant positive association with different categories of voluntary disclosure, while companies liquidity measured by quick ratio, and multinational companies have non significant association with different categories of voluntary disclosure on the website.

From the table 6.18 it can also be observed that under the Spearman test, firm size, profitability measured by ROE, independent director in the board, dual leadership structure have significant positive association with all the different categories of voluntary disclosure. Companies' liquidity, measured by current

ratio, has significant positive association with the disclosure of investor related information on the internet. Market category has significant negative association with all the categories of voluntary disclosure except environmental disclosure, while board size has only significant positive association with corporate social responsibility disclosure (CSR). Again company ownership structure has significant positive association with all the categories of voluntary disclosure except environmental disclosure, sustainability disclosure and presentation format. On the other hand company age measured by listed year has significant negative association with all the categories except financial information disclosure, environmental disclosure and presentation format of voluntary disclosure, while establishment year has non-significant association with all the categories of disclosure.

According to the Pearson correlation coefficient (table 6.19), firm size, independent directors in the board, company ownership structure and dual leadership structure have significant positive association and market category has significant negative association with all the different categories of voluntary disclosure except environmental disclosure. Companies' profitability measured by ROE and companies liquidity measured by current ratio has non-significant association with different categories of disclosure. While a company's board size has a significant positive association with corporate social responsibility reporting and sustainability disclosure; company age, measured by establishment year, has a significant positive association with CSR, environmental disclosure and sustainability disclosure on the internet. On the other hand company age measured by listed year has a significant negative association with general disclosure, corporate governance disclosure and investor related information disclosure on the web.

Table 6.18: Spearman Correlation for Dependent and Independent Variables (Voluntary- non financial)

	Voluntary	General	Strategic	Governance	Financial	CSR	Environment	Sustainability	Investor	Presentation	Firm_size	ROE	ROA	Audit-firm	Mul.national	Leverage	Currentrat	Quick Ratio	Market cate	Ind_direct	Board-size	Dual structure	Ownership	Listedyr	Establishment
Voluntary	1.000																								
General	.866**	1.000																							
Strategic	.855**	.823**	1.000																						
Governance	.879**	.766**	.740**	1.000																					
Financial	.905**	.766**	.760**	.826**	1.000																				
CSR	.668**	.529**	.546**	.485**	.510**	1.000																			
Environmental	.542**	.370**	.379**	.359**	.398**	.640**	1.000																		
Sustainability	.838**	.607**	.698**	.692**	.735**	.648**	.556**	1.000																	
Investor	.816**	.684**	.676**	.633**	.694**	.480**	.384**	.630**	1.000																
Presentation	.738**	.630**	.551**	.551**	.601**	.491**	.357**	.561**	.706**	1.000															
Firm_size	.478**	.416**	.390**	.365**	.401**	.520**	.343**	.358**	.384**	.452**	1.000														
ROE	.315**	.254**	.200*	.271**	.256**	.310**	.196*	.289**	.319**	.247**	.203*	1.000													
ROA	.422**	.315**	.351**	.402**	.369**	.355**	.284**	.352**	.371**	.268**	.291**	.727**	1.000												
Auditfirm	.370**	.265**	.285**	.395**	.403**	.338**	.177*	.304**	.265**	.242**	.282**	.324**	.303**	1.000											
Multinational	.018	-.029	.058	.025	.082	-.011	-.122	-.030	.048	-.061	.110	-.037	.281**	.073	1.000										
Leverage	.307**	.215*	.260**	.292**	.240**	.266**	.291**	.280**	.244**	.214*	.115	.276**	.253**	.151	-.107	1.000									
Currentratio	.123	.075	.156	.080	.155	.093	-.047	.072	.169*	.058	.190*	.008	.338**	.093	.755**	-.098	1.000								
Quickratio	.031	-.014	.072	.040	.092	-.003	-.119	-.024	.055	-.049	.121	-.036	.277**	.079	.776**	-.104	.758**	1.000							
Marketcate	-.339**	-.380**	-.323**	-.345**	-.303**	-.192*	-.105	-.202*	-.304**	-.244**	-.293**	-.307**	-.398**	-.210*	-.248**	-.141	-.239**	-.246**	1.000						
inddirector	.437**	.422**	.405**	.442**	.406**	.200*	.202*	.222**	.369**	.344**	.271**	.154	.191*	.257**	.011	.188*	-.022	.017	-.157	1.000					
Boardsize	.163	.090	.111	.124	.161	.181*	.140	.130	.131	.145	.284**	.142	.175*	.350**	.105	.074	.070	.100	-.121	.245**	1.000				
Roleduality	.441**	.435**	.376**	.461**	.391**	.266**	.177*	.369**	.349**	.243**	.099	.160	.167*	.177*	.068	.157	.039	.064	-.301**	.238**	.099	1.000			
Ownership	.224**	.240**	.168*	.226**	.169*	.287**	.162	.128	.218**	.105	.201*	.323**	.122	.317**	-.012	.235**	-.005	-.001	-.120	.242**	.262**	.239**	1.000		
Listedyr	-.201*	-.174*	-.196*	-.169*	-.119	-.205*	-.148	-.182*	-.192*	-.133	-.333**	-.063	-.183*	.003	-.061	.147	-.091	-.057	.131	-.034	.091	-.064	.039	1.000	
Establishedyr	-.090	-.057	-.127	-.103	-.053	-.078	-.058	-.066	-.085	.024	-.133	.030	-.175*	.124	-.080	.112	-.058	-.076	.004	-.027	.156	.182*	.214*	.727**	1.0

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

Table 6.19: Pearson Correlation for Dependent and Independent Variables (Voluntary- non financial)

	Voluntary	General	Strategic	Governance	Financial	CSR	Environmen	Sustainabilit	Investor	Presentatio	Firm_size	ROE	ROA	Audit-firm	Mul.national	Leverage	Currentrat	Quick Ratio	Market cate	Ind_dir	Board-size	leadership structure	Ownership	Listedyr	Establishme
Voluntary	1																								
General	.818**	1																							
Strategic	.817**	.700**	1																						
Governance	.853**	.766**	.683**	1																					
Financial	.886**	.763**	.715**	.852**	1																				
CSR	.728**	.438**	.569**	.458**	.467**	1																			
Environmental	.600**	.313**	.385**	.294**	.361**	.643**	1																		
Sustainability	.836**	.533**	.693**	.583**	.639**	.809**	.644**	1																	
Investor	.799**	.670**	.634**	.627**	.685**	.462**	.407**	.561**	1																
Presentation	.730**	.634**	.509**	.534**	.597**	.414**	.385**	.518**	.699**	1															
Firm_size	.324**	.265**	.259**	.248**	.257**	.278**	.137	.275**	.282**	.324**	1														
ROE	.107	.120	.100	.055	.113	.103	.070	.104	.072	.040	.195*	1													
ROA	.408**	.296**	.317**	.351**	.335**	.416**	.255**	.407**	.310**	.168*	.369**	.289**	1												
Auditfirm	.405**	.259**	.308**	.367**	.399**	.366**	.194*	.387**	.264**	.234**	.181*	.086	.313**	1											
Multinational	-.068	-.040	-.033	-.041	-.013	-.083	-.107	-.073	-.017	-.107	-.011	.038	.140	-.032	1										
Leverage	.391**	.216*	.297**	.295**	.264**	.446**	.406**	.381**	.250**	.235**	.088	.082	.221**	.151	-.108	1									
Currentratio	.047	.078	.102	.072	.122	-.032	-.090	-.045	.104	-.018	.103	.063	.198*	.031	.564**	-.111	1								
Quickratio	.025	.055	.083	.076	.116	-.059	-.128	-.060	.067	-.037	.085	.057	.182*	.013	.622**	-.121	.756**	1							
Marketcate	-.324**	-.357**	-.285**	-.346**	-.316**	-.175*	-.059	-.198*	-.293**	-.230**	-.282**	-.233**	-.356**	-.210*	-.136	-.141	-.143	-.158	1						
Inddirector	.419**	.383**	.358**	.451**	.405**	.219**	.158	.210*	.355**	.369**	.187*	.126	.122	.238**	-.091	.163	-.018	.006	-.158	1					
Boardsize	.188*	.071	.122	.130	.157	.258**	.095	.174*	.137	.165	.251**	.128	.163	.369**	-.017	.075	.000	-.003	-.122	.241**	1				
Roleduality	.410**	.439**	.330**	.455**	.388**	.225**	.149	.291**	.335**	.216*	.022	.160	.180*	.177*	.111	.157	.089	.110	-.301**	.231**	.095	1			
Ownership	.259**	.225**	.197*	.223**	.180*	.327**	.132	.215*	.222**	.114	.170*	-.020	.139	.317**	-.099	.235**	-.016	-.011	-.120	.230**	.276**	.239**	1		
Listedyr	-.139	-.175*	-.122	-.167*	-.111	-.048	.015	-.084	-.182*	-.111	-.310**	.019	-.142	.005	-.090	.152	-.073	-.083	.119	-.035	.052	-.054	.048	1	
Establish yr	.151	.044	.057	-.024	.070	.198*	.256**	.322**	.050	.191*	-.024	.060	-.034	.218**	-.127	.200*	-.109	-.123	-.014	.028	.162	.152	.223**	.534**	1

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

6.8 Conclusion:

The main objective of this chapter is to empirically investigate the first two research question in two phases of analysis. Firstly, it examines the extent of mandatory disclosure on the internet by the Bangladeshi companies and secondly, it examines the extent of voluntary disclosure on the internet. It provides the descriptive analysis for this study. The results at least provide some sort of knowledge about corporate internet reporting practices in emerging economies, and Bangladesh in particular.

From the findings it is revealed that the level of total mandatory disclosure on the internet by the listed companies in Bangladesh is low. Among the categories of mandatory disclosure, companies disclose the most information regarding general corporate information and the least information regarding director's report. Nevertheless, the available literature also reveals that overall compliance with mandatory disclosure by Bangladeshi firms is low (for example Akhtaruddin 2005). Nurunnabi and Monirul (2012) also found that more than 95% of the companies did not disclose the IFRSs or ISA compliance on the internet in Bangladesh. They (Akhtaruddin 2005; Nurunnabi and Monirul 2012) also indicated that there are lacks of regulatory enforcement on corporate governance compliance in Bangladesh. Moreover, Nurunnabi and Monirul (2012) suggested that political connectedness and corruption are the root causes of non-compliance standards.

In the case of voluntary disclosure, the extent of disclosure is lower than the mandatory disclosure level. The most information disclosed on the internet is concerned with general corporate information and the least information is disclosed concerning corporate environmental information. The results also identified that the banking sector discloses the highest level of information while the tannery sector discloses the lowest level of information on the internet. This chapter also includes the correlation analysis between the dependent and independent variables and revealed a number of significant correlations between them. These suggest that some of the hypotheses can potentially be supported. To further assess the potential impact of these independent variables the regression analysis is performed which is discussed in the next chapter (chapter seven).

Charter: 7

Determinants of Corporate Internet Reporting

7.1 Introduction:

The previous chapter (chapter six) provides the descriptive analysis of the study and identified the extent of mandatory and voluntary disclosure on the internet by the Bangladeshi companies. The aim of this chapter is to answer the third research question – what are the determinants of disclosing mandatory and voluntary information on the internet? The current study examines the relationship between total mandatory and voluntary disclosure as a dependent variable and a number of independent variables; firm size, profitability measured by both ROE and ROA, audit firm's international link, industry type, multinational parents, liquidity, market category, independent directors in the board, board size, dual leadership structure, ownership structure, and company age measured by both listing year and establishment year.

This chapter starts with a bivariate analysis of mandatory and voluntary disclosure in section 7.2. Section 7.3 represents the multiple regression models and section 7.4 describes the regression diagnostic for the mandatory and voluntary data set. Finally, regression analysis and hypothesis testing are discussed in section 7.5 followed by a conclusion in section 7.6.

7.2 Bivariate Analysis:

In order to identify the factors affecting the mandatory and voluntary disclosure level on the internet, the current study applies bivariate analysis. Bivariate analysis is one of the simplest forms of quantitative analysis (Babbie 2009). It involves the analysis of two variables for the purpose of determining the empirical relationship between them. In order to see if the variables are related to one another, bivariate analysis can be helpful in testing hypotheses of association. Here each independent variable is examined against the dependent variable separately.

The result of bivariate analysis helps to identify whether the selection of variables is appropriate or not. As it measures the association of how well independent variable relates to the dependent variable, the result is specific. So, this type of analysis is more suitable only to examine two variables. This

study applies bivariate analysis to identify the appropriateness of independent variables.

7.2.1 Mandatory Disclosure:

Table 7.1 and table 7.2 provide the results of the bivariate analysis of mandatory disclosure for both the combined and the non-financial sample respectively. From table 7.1 it can be observed that profitability measured by ROE and ROA, audit firm's international link, industry type, multinational parent, independent directors in the board, board size, and dual leadership structure have significant positive association with the level of mandatory disclosure on the internet at 1% level. While, firm size and liquidity measured by current ratio have significant positive association with the level of mandatory disclosure, company age measured by number of listed years and market category have significant negative association at 5% level.

Table 7.1: Bivariate Analysis for Mandatory Disclosure (Combined)

Total	Coefficient	T
Firmsize	0.0790	2.06**
ROE	0.0322	2.63***
ROA	0.2264	3.94***
Audit Firm	0.2315	7.16***
Industry type	0.1427	3.9***
Multi Parent	0.1444	2.89***
Current Ratio	0.0107	1.8*
Mkt Category	-0.2929	-5.3***
Inde. Director	0.0955	5.03***
Board Size	0.0126	3***
Dual Leadership	0.3928	7.23***
Ownership	0.0571	1.47
No Listed Year	-0.0040	-2.12**
No Estab Year	-0.0006	-0.45

Table 7.2 provides the result of bivariate analysis for mandatory disclosure on the internet: it can be observed that the result is quite different from the results

for mandatory disclosure for the combined sample. Profitability measured by ROA, audit firm's international link, multinational parent, independent directors in the board, and dual leadership structure are positively and significantly associated with the level of disclosure (at 1% level) by non-financial companies. In addition, profitability measured by ROE, ownership structure, and liquidity measured by quick ratio has significant positive association with the disclosure of mandatory information. Only market category, company age measured by number of listed years, and leverage has a significant negative association.

Table 7.2: Bivariate Analysis for Mandatory Disclosure (Non Financial)

Total	Coefficient	T
Firm Size	0.0492	1.01
ROE	0.0177	1.66*
ROA	1.0985	4***
Audit Firms	0.2381	4.54***
Multi Parent	0.2439	4.23***
Current Ratio	0.0265	1.55
Mkt Category	-0.2441	-3.78***
Inde Director	0.1534	5.48***
Board Size	0.0161	1.27
Dual Leadership	0.3495	5.76***
Ownership	0.1190	2.23**
No Listed Year	-0.0042	-1.81*
No Est Year	0.0001	0.06
Leverage	-0.0038	-1.81*
Quick Ratio	0.0266	1.7*

7.2.2 Voluntary Disclosure:

Table 7.3 represents the results of voluntary disclosure on the internet for combined sample. In this case, firm size, profitability measured by ROE, audit firm's international link, industry type, multinational parents, independent directors in the board, board size, and dual leadership structure have significant positive association and market category has significant negative association with the level of voluntary disclosure on the internet at the 1% level. Moreover,

ownership structure has also significant positive association with the level of voluntary disclosure.

Table 7.3: Bivariate Analysis for Voluntary Disclosure (Combined)

Total	Coefficient	T
Firm Size	0.1006	3.24***
ROE	0.0258	3.93***
ROA	0.0181	0.36
Audit Firms	0.2277	7.62***
Industry Type	0.1501	5.74***
Multi Parent	0.1748	4.17***
Current Ratio	0.0031	0.66
Mkt Category	-0.1863	-6.96***
Inde Director	0.0665	4.72***
Board Size	0.0118	3.84***
Dual Leadership	0.2296	10.56***
Ownership	0.0437	1.65*
No Listed Year	-0.0017	-1.36
No Est Year	0.0004	0.27

In the case of voluntary disclosure of non-financial companies (table 7.4), firm size, profitability measured by both ROE and ROA, audit firm's international link, multinational parent, independent directors in the board, board size, dual leadership structure, and ownership structure have significant positive association and market category and leverage have significant negative association with the level of disclosure on the internet.

Table 7.4: Bivariate Analysis for Voluntary Disclosure (Non-Financial)

Total	Coefficient	T
Firm Size	0.0518	1.93**
ROA	0.0251	2.4**
ROA	0.8596	5.4***
Audit Firms	0.1873	4.74***
Multi Parent	0.1911	3.96***

Current Ratio	0.0055	0.74
Mkt Category	-0.1428	-5.28***
Independent	0.0909	6.22***
Board Size	0.0179	2.62**
Dual Leadership	0.1730	7.22***
Ownership	0.0883	3.18***
No Listed Year	-0.0021	-1.58
No Est Year	0.0013	1.12
Leverage	-0.0025	-2.69***
Quick Ratio	0.0033	0.45

7.3 Multiple Regression Model:

The result of bivariate analysis is specific, so to generalise the result of this study multivariate analysis is applied. Multivariate analysis can statistically estimate relationships between different variables, and correlate how important each one is to the final outcome and where dependencies exist between them. This gives a much richer and realistic picture than looking at a single variable and provides a powerful test of significance compared to bivariate analysis.

As the study contains two dependent variables and two or more independent variables, the regression model is said to be ‘multiple regression’ which is considered to be relevant and the basic choice for the relationship form between dependent and independents variables, is linear. So the model is called "multiple linear regression model".

According to Afifi et al. (2004, p. 3) “the expression Multivariate analysis is used to describe analyses of data that are multivariate in the sense that numerous observations or variables are obtained for each individual or unit studied”. Among multivariate analyses, regression analysis is one of the most common and widely used techniques in statistical analysis especially in disclosure literature (Cooke 1998). It is mainly used in situations where there is one or a group of dependent variables that is thought to be a result of one or more independent variables; the changes in the values of independents explain most of the changes in dependents' values (Abdel-Fattah 2008).

According to Hutcheson and Sofroniou (1999), the Ordinary Least Squares (OLS) regression is considered to be a powerful technique especially when the model contains continuous and dummy variables. Gujarati (2003) also suggest that under certain assumptions, the method of least squares has some very attractive statistical properties that have made it one of the most powerful and popular methods of regression analysis. The following sections present the regression diagnostics that represent the first step in choosing the relevant statistical method to analyse the collected data in the current study.

7.4 Regression Diagnostic:

Cooke (1998) suggested that detailed data screening is important in disclosure studies to identify the impact of non linearity problems with the problems of outliers before deciding the proper statistical method. There are a number of ways to estimate regression coefficients. Linear regression is usually used; the OLS method. To justify using OLS, there are four principal assumptions:

1. Linearity: The regression model is linear in the parameters. It means that the relationship should be linear between the dependent variable and each independent variable.

2. Independence and normality of error: The error terms are independent and have a zero population mean. It means that the error terms are not correlated and normally distributed with constant mean zero and constant variance σ^2.

3. Homoscedasticity: The variance of the error terms is constant or same for each observation.

4. There are no perfect linear relationships among the explanatory variables (no multicollinearity).

If one or more of these assumptions do not hold, then the results of the regression model will be inefficient or misleading. After running a multiple linear regression analysis and estimating the values of the dependent variable (TVDS) and therefore residuals (errors), one can check if the OLS linear regression is a

good choice or not by performing some model diagnostics that are basically based on checking the OLS linear regression assumptions.

7.4.1 Regression Diagnostic for Mandatory Disclosure:

7.4.1.1 Checking Linearity (Mandatory):

There needs to be a linear relationship between the dependent and independent variables. There are a number of ways to check the type of linear relationship that exists between the variables. By using STATA/SPSS, one can plot the dependent variable against independent variable, and then visually inspect the scatter plot to see how well the fitted regression line represents their relationship. Linearity can also be checked by plotting the residuals against the independent variable values, and if the relationship is linear, then there will be no obvious clustering of positive residuals or a clustering of negative residuals. The graphs (for mandatory data) indicate that most of the independent variables in the study do not have a linear relationship with the dependent variable. This may be because there are some outliers or unusual observations in the data set or may be the linear model is not a good fit to describe the relationship between the variables. So the linearity assumption is not satisfied and therefore the OLS estimators related to the nonlinear relationship variables will not be unbiased. However, this result of non-linearity is common in the majority of prior disclosure studies (Cooke 1998). The results are given in the appendix C.

7.4.1.2 Checking Normality of Residuals (Mandatory):

Normality of residuals means that errors (residuals) should be normally distributed. It is necessary only for the hypothesis tests to be valid. This study applied two methods - graphical methods and numerical methods.

Graphical Methods:

The most common plots to check the normality assumption are:

- Q-Q plot
- P-P plot
- Histogram
- Density estimate

Figure 7-1: Q-Q plot (Mandatory)

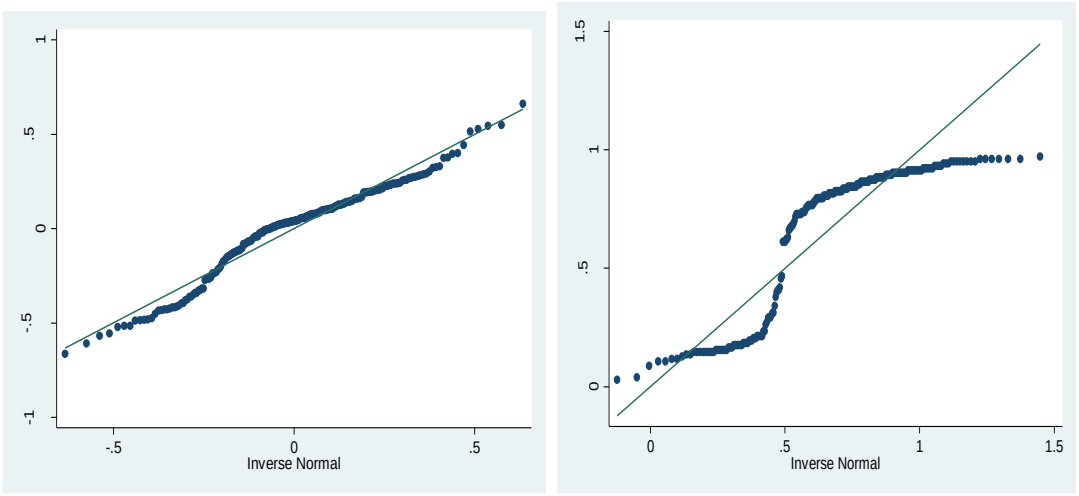


Figure 7-2: P-P Plot (Mandatory)

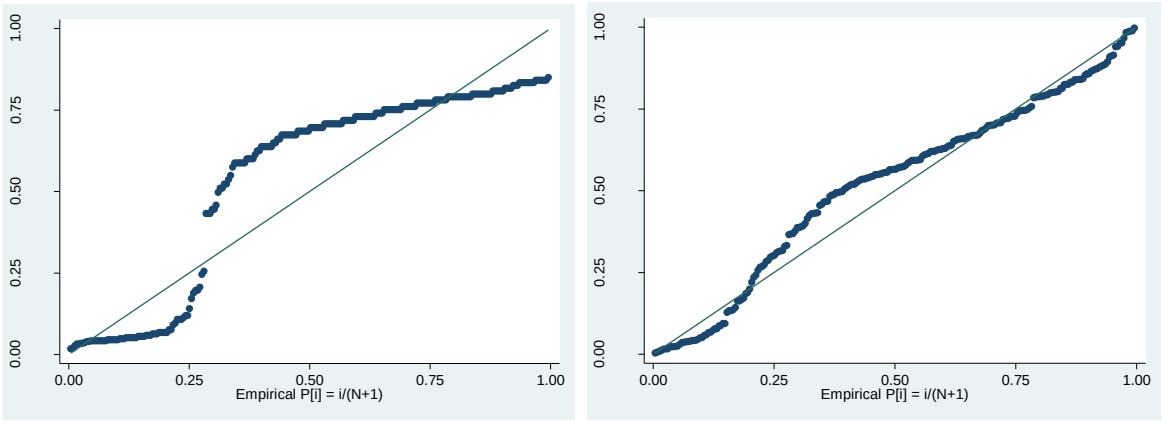
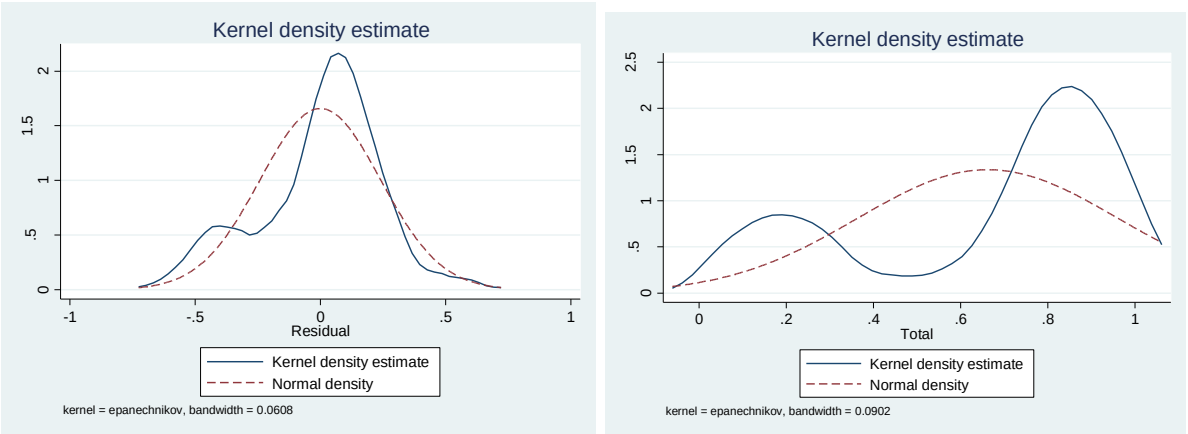


Figure 7-3: Normal curve and Kernel density estimate (Mandatory)



Numerical Method of Normality Test:

To test the normality there are many numerical methods that can be used. This study use Shapiro –Wilk W statistic as it has been shown to have a good power against a wide range of non normal distribution. On the other hand Kolmogorov – Smirnov D statistic tends to reject the null hypothesis when the sample size is

large and accept when the sample the size is small. According to Shapiro –Wilk W test, if the p value is small then the data may not be considered as normally distributed. By using Skewness it is also possible to find out how non symmetric the distribution is. Afifi et al. (2004) suggested that if the data are normally distributed then the value of skewness will be close to zero. Table 7.5 and 7.6 presents the results of two common tests: Skewness – kurtosis and Shapiro – Wilk W for both the residuals and dependent variables for mandatory data.

Table 7.5: Skewness / Kurtosis Test for Normality (Mandatory)

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
R	234	0.0037	0.5585	8.11	0.0173
Total	234	0.0000	0.0000	40.78	0

Table 7.6: Shapiro-Wilk W test for Normal data (Mandatory)

Variable	Obs	W	V	Z	Prob>z
R	234	0.96301	6.330	4.279	0.00001
Total	234	0.78659	36.52	8.343	0

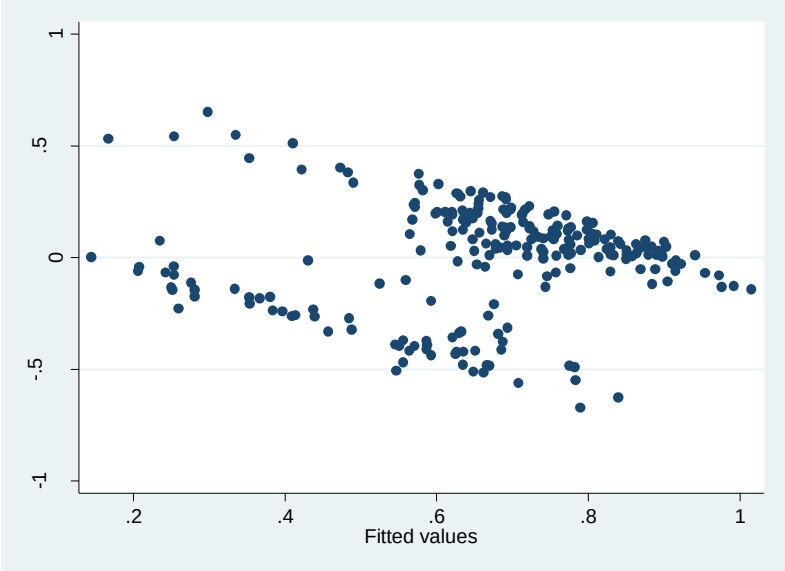
Both the graphical and numerical method suggests the same result. It can be observed that the data set is not normally distributed and this is mainly related to the skewness of the distribution.

7.4.1.3 Checking Homoscedasticity of Residuals (Mandatory):

The assumption of homoscedasticity means that variance of the error terms is constant for each observation. To check this homoscedasticity one can use both graphical and numerical methods. Graphically, one can look at plots of residuals versus predicted values and numerically STATA provides two methods for heteroscedasticity test; Cameron &Trivedi's decomposition of IM test and Breusch-Pagan / Cook-Weisberg and White's tests. This study uses both the graphical and numerical methods.

Graphical Method:

Figure 7-4: The Relationship between Residuals and Predicted Values (Mandatory)



Numerical test of Heteroscedasticity:

Tables 8.7 and 8.8 present the results of numerical tests for mandatory disclosure.

Table 7.7: Breusch-Pagan / Cook-Weisberg and White tests (Mandatory)

Test	Chi-square	Prob>chi2
Breusch-Pagan / Cook-Weisberg	26.82	0.0000
White's	156.60	0.0035

Table 7.8: Cameron &Trivedi's Decomposition of IM test (Mandatory)

Source	Chi-square	Df	Prob>chi2
Heteroscedasticity	156.60	112	0.0035
Skewness	84.51	14	0.0000
Kurtosis	0.37	1	0.5449
Total	241.47	127	0.0000

From the table it can be concluded that errors have non-constant variance (heteroscedatic), which means that the OLS estimators do not have the minimum variance for unbiased estimators. So the data set in this study suffers from heteroscedasticity.

7.4.1.4 Checking for Multicollinearity:

Multicollinearity means that there is a linear relationship between two or more independent variables. Murray (2006) suggested that it will be very difficult to differentiate the individual effects of explanatory variables and Ordinary Least Square estimators may be biased when multicollinearity exists. This means that there is a linear relationship between two or more independent variables and the estimates for a regression model cannot be uniquely computed. There are two different ways to check the presence the multicollinearity between independent variables: these are correlation coefficient and variance inflation factors (VIF) with tolerance values. VIF shows how the variance of an estimator is inflated by the presence of multicollinearity (Gujarati 2003 p. 351). In disclosure studies these two ways have been widely used. The present study employs both to check the multicollinearity between the variables.

Table 7.9 represents the variance inflation factor (VIF) and the tolerance coefficient of each explanatory variable for combined sample. For Variance Inflation Factor, it is suggested that data is normally distributed if the VIF is less than 10 (Gujarati 2003; Gaur and Gaur 2009). However, others suggested that the value of VIF should be 5 as a rule of thumb (Groebner et al. 2005). From the table it can be observed that the maximum VIF is 2.549 with mean VIF is 1.479. In addition, the lowest tolerance coefficient is 0.392 which is more than 0.20. Because according to Hair et al. (2011), the tolerance value more than 0.20 may be used as a criterion for considering the data being free from the problem of multicollinearity. Therefore, considering the rule of thumb, the result of VIF and the tolerance coefficient indicates that there is no problem of multicollinearity in this data set.

Table 7.9: VIF and Tolerance for Dependent Variables

	VIF	Tolerance
Firm Size	1.392	.719
Return of Equity	1.225	.816
Return on Assets	1.377	.726
Audit Firm Int Link	1.224	.817
Industry Type	2.549	.392
Multinational Parents	1.126	.888

Liquidity(Current ratio)	1.211	.826
Market Category	1.283	.780
Independent Director	1.163	.860
Board Size	2.333	.429
Dual Leadership Structure	1.309	.764
Ownership Structure	1.143	.875
No. of Year-listed	1.655	.604
No. of year –establishment	1.723	.580
Average	**1.479**	

Moreover, it is commonly agreed that the correlation matrix is a powerful tool for indicating the relationship between different explanatory variables but there is no agreement among researchers regarding the cut off value of correlation percentage (Alsaeed 2006). While some researchers use 0.8; e.g. Hair et al. (2011); Gujarati (2003); others suggest using 0.7; e.g. Tabachnick and Fidell (1996). Table 6.9 and 6.10 represents the correlation coefficient of non parametric and parametric tests, Spearman and Pearson correlation coefficient respectively for mandatory disclosure.

It can be observed from the tables that correlation coefficients confirm the results of VIF. According to the Spearman's test under the mandatory disclosure (table 6.9) model all the correlation coefficients of independent variables are less or equal to 0.749. Under the Spearman test, however, there are some correlation coefficient of 0.879 (for general disclosure coefficient), 0.891 (for directors report coefficient), 0.920 (for balance sheet coefficient), 0.934 (for income statement coefficient), 0.821(for director report with general disclosure) and 0.813 (for balance sheet with general disclosure) more than 0.80. However, all coefficients are the different categories of total mandatory disclosure and also these are dependent variables: these variables are not examined at the same time. They are examined separately. Therefore, it can be concluded that as there is no value more than 0.8 between dependent and independent variable, there is no potential multicollinearity problem in the data set.

Like the Spearman's correlation coefficient, Pearson's rank correlation for mandatory (table 6.10) disclosure also indicates that the highest coefficient for independent variables is 0.732 for the combined sample. There are also some correlation coefficients of total mandatory disclosure with general disclosure (0.971), director's report (0.857), balance sheet (0.984), income statement (0.974); and general disclosure with director's report (0.853), balance sheet (0.951) and income statement (0.910); and balance sheet with income statement (0.942) which are all exceeding the value of 0.8. As these are all dependent variables and general disclosure, director's report, balance sheet and income statement are different parts of total mandatory disclosure, it can be concluded that there is no potential multicollinearity problem in this study.

7.4.1.5 Regression Diagnostic Summary for Mandatory Disclosure:

From the results of the above graphical and numerical methods, it can be identified that there are some violations of OLS assumptions. The results found non-linearity for some independent variables. Also the data is not normally distributed and suffers from the problem of heteroscedasticity. However, the results of VIF and correlations coefficients under both Spearman and Pearson correlation method confirm that there is no multicollinearity.

Therefore, the data analysis needs to be applied using anon parametric test that fits with this type of non parametric data which is not normally distributed. The OLS is a parametric test, so to fit with the non parametric data it needs to be employed using robust standard error. Draper (1988); as cited in Cooke (1998); also suggested the robust approach to deal with this type of data where there is no necessity to fulfill these assumptions.

7.4.2 Regression Diagnostic for Voluntary disclosure:

7.4.2.1 Checking Linearity (Voluntary):

There needs to be a linear relationship between the dependent and independent variables. To check the linearity of the voluntary disclosure data set, independent variables are plotted against the dependent variable values. The graphs for the voluntary disclosure data indicate that most of the independent variables in the study do not have a linear relationship with the dependent variables. This may be because there are some outliers or unusual

observations in the data set or it may be that the linear model is not a good fit to describe the relationship between the variables. So the linearity assumption is not satisfied. The results are given in the appendix D.

7.4.2.2 Checking Normality of Residuals (Voluntary):

Graphical Method:

Figure 7-5: Q-Q plot (Voluntary)

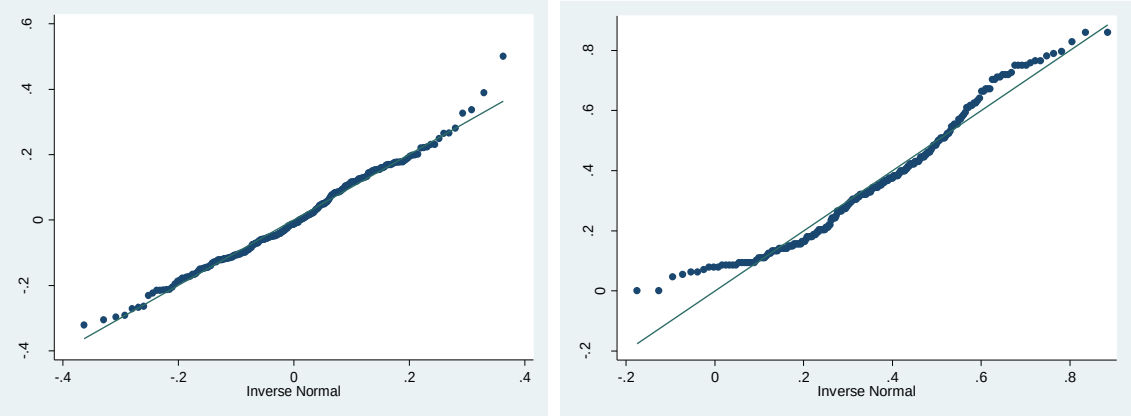


Figure 7-6: P-P Plot (Voluntary)

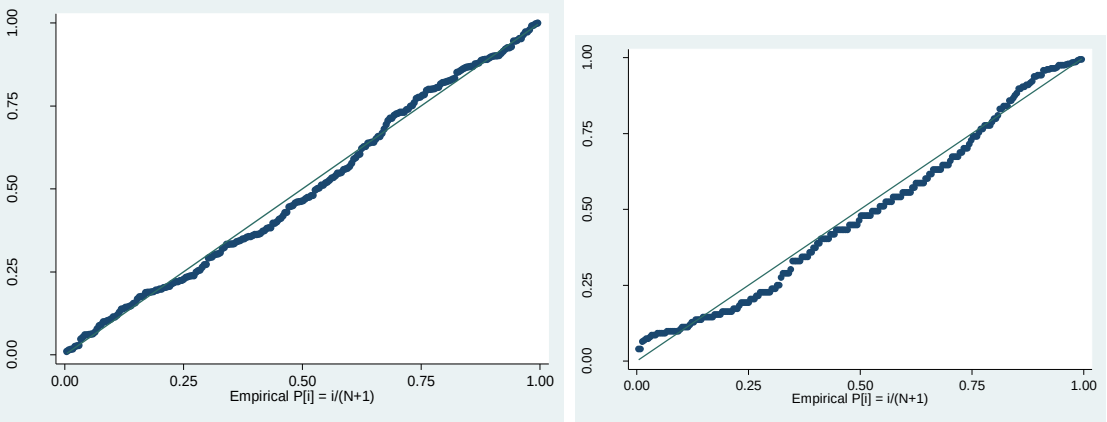
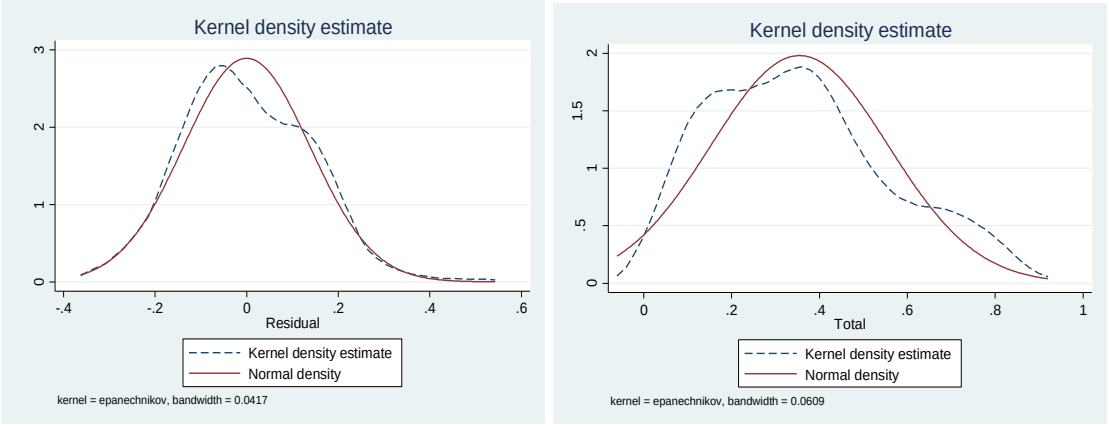


Figure 7-7: Normal curve and Kernel density estimate (Voluntary)



Numerical Method of Normality Test:

In order to check the normality of the voluntary data the study again applies Shapiro –Wilk W statistic that has a good power against a wide range of non normal distribution. Table 7.10 and 7.11 presents the results of two common tests: Skewness – kurtosis and Shapiro – Wilk W for both the residuals and dependent variables for voluntary data.

Table 7.10: Skewness / Kurtosis test for Normality (Voluntary)

Variables	Obs	Pr(skewness)	Pr(Kurtosis)	Adj chi2	Prob>chi2
R	234	0.0657	0.5961	3.7	0.1572
Total	234	0.0018	0.0544	11.74	0.0028

Table 7.11: Shapiro-Wilk W test for Normal data (Voluntary)

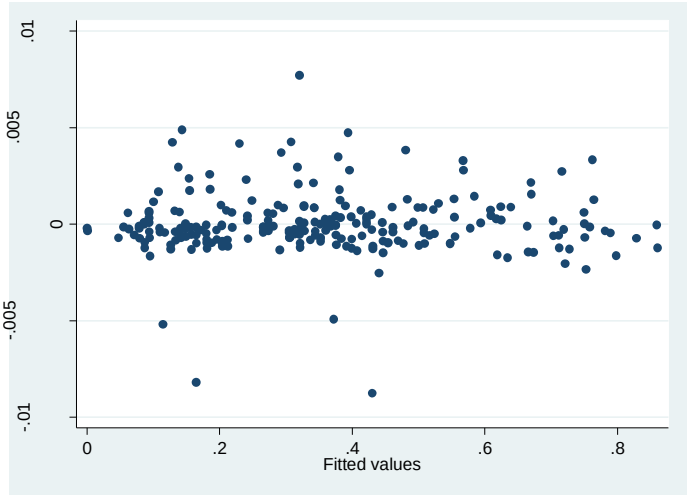
Variable	Obs	W	V	Z	Prob>z
R	234	0.98981	1.744	1.29	0.09860
Total	234	0.96153	6.583	4.37	0.00001

Both the graphical and numerical method suggests the same result. It can be observed that the data set is not normally distributed and this is mainly related to the skewness of the distribution.

7.4.2.3 Checking Homoscedasticity of Residuals (Voluntary):

Graphical Method:

Figure 7-8: The Relationship between Residuals and Predicted Values (Voluntary)



Numerical Method:

Table 7.12: Breusch-Pagan / Cook-Weisberg and White tests (Voluntary)

Test	Chi-square	Prob>chi2
Breusch-Pagan / Cook-Weisberg	9.88	0.0017
White's	149.34	0.0106

Table 7.13: Cameron &Trivedi's Decomposition of IM test (Voluntary)

Source	Chi-square	Df	Prob>chi2
Heteroscedasticity	149.34	112	0.0106
Skewness	86.43	14	0
Kurtosis	0.05	1	0.8291
Total	235.82	127	0

The results of both graphical and numerical methods are same. Therefore, it can be concluded that errors have non constant variance (heteroscedatic), which means that the OLS estimators do not have the minimum variance for unbiased estimators. So the data set in this study suffers from heteroscedasticity.

7.4.2.4 Checking for Multicollinearity (Voluntary):

As all the independent variables are the same for both the mandatory disclosure model and voluntary disclosure model so VIF and Tolerance values are same for both models. Therefore it can be concluded that there is no problem of multicollinearity in the voluntary disclosure data set.

Again this study considers the correlation matrix for indicating the relationship between different explanatory variables. Table 6.15 and 6.16 represents the correlation coefficient of non parametric and parametric tests, Spearman and Pearson correlation coefficient respectively for voluntary disclosure for the combined sample.

It can be observed from the tables that correlation coefficients confirm the results of VIF. According to the Spearman's test under the voluntary disclosure (table 6.15) model all the correlation coefficients of independent

variables are less or equal to 0.749. Under the Spearman test, however, there are some correlation coefficients of total voluntary disclosure with general disclosure coefficient (0.864), strategic information coefficient (0.870), corporate governance coefficient (0.800), financial information coefficient (0.914), sustainability disclosure coefficient (0.871), and 0.828 (for general disclosure with strategic information disclosure coefficient), and 0.826 (for corporate governance disclosure with financial disclosure coefficient) are more than 0.80. However, all the coefficients are the separate categories of total voluntary disclosure and also these are dependent variables and all these variables are not examined at the same time. They are examined separately. Therefore, it can be concluded that as there is no value more than 0.8 between dependent and independent variables, there is no potential multicollinearity problem in the current study.

Like the Spearman's correlation coefficient, Pearson's rank correlation for voluntary disclosure model (table 6.16) also indicates that the highest coefficient for independent variables is 0.732 for the combined sample. There are also some correlation coefficients of total voluntary disclosure with general disclosure (0.813), strategic information disclosure (0.844), corporate governance disclosure (0.847), financial information (0.882), CSR (0.830), sustainability disclosure (0.884); and corporate governance disclosure with financial information disclosure (0.859), and sustainability disclosure with CSR (0.839) that are all exceed the value of 0.8. As they are all dependent variables and general disclosure, strategic information disclosure, corporate governance disclosure, financial information, sustainability disclosure, and CSR are different parts of the total voluntary disclosure, it can be concluded that there is no potential multicollinearity problem in this study.

7.4.2.5 Regression Diagnostic Summary for Voluntary Disclosure Model:

From the results of the above graphical and numerical methods, it can be identified that there are some violations of OLS assumptions. The results found non-linearity for some independent variables. Also the data is not normally distributed and suffers from the problem of heteroscedasticity. However, the results of VIF and correlations coefficients under both Spearman and Pearson confirm that there is no multicollinearity.

Therefore, the data analysis needs to be applied using a non-parametric test that fits with this type of non-parametric data which is not normally distributed. The OLS is a parametric test, and to fit with the non-parametric data it needs to be employed using robust standard error.

7.5 Regression Analysis and Hypothesis Testing:

According to Hair et al. (1998) although transformation can be used to deal with the violation of classical linear regression assumptions, researchers may face a number of problems when transforming their data and therefore some general guidelines should be followed. Furthermore, the existence of outliers may affect the results even with transformed data. Therefore it is recommended to employ statistical techniques that put less emphasis on such outliers (Abdel-Fattah 2008). In the light of this, OLS regression with robust standard error analysis is used in disclosure literature such as Iskander (2008).

Based on the above discussion, the OLS regression with robust standard error analysis has been used in this study. The following section represents the results of regression analysis for both the mandatory and voluntary disclosure model.

7.5.1 Mandatory Disclosure Model:

7.5.1.1 Regression Analysis for Combined Mandatory Disclosure Model:

Table 7.14 represents the results of OLS regression with robust standard error for the mandatory disclosure model. From the table it can be observed that the total mandatory disclosure has significant positive association ($p \leq 0.01$) with audit firm's international link, independent directors in the board, dual leadership structure: it has significant negative association ($p \leq 0.01$) with profitability measured by ROE. In addition, profitability measure by ROA has significant positive association ($p \leq 0.05$) and market category has significant negative association ($p \leq 0.10$) with the level of mandatory disclosure. The positive association means that the total mandatory disclosure increases with the increase in firm's profitability measured by ROA, if the firm is audited by Big 4 audit firm, has a high number of independent directors in the board and there is dual leadership in the board. On the other hand, negative association means

that companies that are in the Z category and whose profitability (measured by ROE) increases, disclose less mandatory information on the web.

In addition, firm size, industry type, multinational parents, liquidity and ownership structure have positive non significant association: board size, company age measured by number of listed year and company's establishment year have non significant negative association with the level of mandatory disclosure on the internet. The adjusted R square of the model explains how much of the changes in the dependent variable are explained by the changes in the independent variables. The value of adjusted R square is 0.308 i.e. 30.8% and the R^2 is 34.98% means that 30.8% of the changes of total mandatory disclosure is explained by the changes in its examined determinants. Some prior studies have reported better as well as poorer explanatory power using different sets of independent variables. For example, Hassan et al. (2008) reported 53.80%, Akhtaruddin (2005) reported 57.7% and Al Akra et al. reported (2010) 6.3% for the full model and 12.6% for the reduced model in 1996, 14.7% for full and 20.7% for reduced model in 2004 and 66.7% for pooled full model and 68% for pooled reduced model.

Referred to the different categories of mandatory disclosure, there is a significant positive association of the audit firm's international link ($p \leq 0.01$), independent directors in the board ($p \leq 0.01$ and $p \leq 0.05$) and dual leadership structure ($p \leq 0.01$) with all categories of mandatory disclosure on the internet. On the other hand, profitability measured by ROE has significant negative association (at $p \leq 0.01$with balance sheet and at $p \leq 0.05$ with income statement and at $p \leq 0.10$ with general disclosure) with all the parts of mandatory disclosure except the director's report.

Firm size and industry type have non-significant positive association with all the parts of mandatory disclosure, while board size and number of years listed are negatively non-significant with the mandatory disclosure level. Profitability measured by ROA is significantly positively associated with the disclosure of balance sheet and income statement. Multinational parent have only significant positive association with the disclosure of the director's report. Liquidity ratio is positively non-significant with general disclosure and income statement but

negatively non-significant with director's report and disclosure of balance sheets. Market category has significant negative association with all the parts of mandatory disclosure except disclosure of balance sheet. Ownership structure has positive non significant association with all the categories of mandatory disclosure except general disclosure on the web. Company age measured by the establishment year of the company is only significantly negatively associated with the directors report.

Table 7.14: OLS Regression with Robust Standard Error for Combined Mandatory Disclosure

	Mandatory		General		Director		Balance Sheet		Income Statement	
	Coefficient	t	Coefficient	T	Coefficient	T	Coefficient	t	Coefficient	t
Firm Size	0.0269	0.84	0.0322	1.07	0.026	0.57	0.0440	1.26	0.0068	0.24
Return of Equity	-0.0468	-2.71***	-0.0355*	-1.96	-0.030	-1.13	-0.0762***	-4	-0.0284**	-1.97
Return on Assets	0.1634	2.47**	0.1326	1.64	0.004	0.03	0.2502***	3.43	0.1319*	1.92
Audit Firm Size	0.1388	3.93***	0.1287***	3.66	0.230***	4.15	0.1209***	3.2	0.1428***	3.96
Industry type	0.0465	0.91	0.0171	0.34	0.000	0	0.0442	0.81	0.0780	1.54
Multinational Parents	0.0738	1.36	0.0684	1.39	0.134**	2.04	0.0511	0.87	0.0866	1.52
Liquidity(Current ratio)	0.0002	0.04	0.0009	0.13	-0.001	-0.12	-0.0012	-0.17	0.0015	0.21
Market Category	-0.1114	-1.82*	-0.1056*	-1.72	-0.186***	-2.77	-0.1014	-1.47	-0.1087*	-1.87
Independent Director	0.0500	2.64***	0.0516***	2.85	0.072***	2.76	0.0485**	2.43	0.0457**	2.38
Board Size	-0.0059	-1.07	-0.0053	-0.98	-0.002	-0.3	-0.0062	-1.06	-0.0068	-1.17
Role Duality	0.2843	4.44***	0.2805***	4.52	0.282***	4.1	0.2978***	4.28	0.2738***	4.3
Ownership Structure	0.0035	0.1	-0.0098	-0.28	0.020	0.44	0.0053	0.14	0.0067	0.18
No. of Year-listed	-0.0009	-0.42	-0.0011	-0.49	-0.001	-0.2	-0.0004	-0.16	-0.0014	-0.64
Year –establishment	-0.0011	-0.89	-0.0015	-1.14	-0.003*	-1.8	-0.0013	-0.94	-0.0005	-0.38
Constant	0.1401	0.46	0.2206	0.76	-0.021	-0.05	-0.0331	-0.1	0.2977	1.07
R	0.591		0.584		.577		.578		.570	
R Square	0.3498		0.341		.333		.335		.325	
Adjusted R square	0.308		0.299		.291		.292		.282	

7.5.1.2 Test of Hypothesis for Combined Mandatory Disclosure Model:

The result of the regression analysis agree with research hypotheses concerning the existence of positive significant relationship between the total mandatory disclosure and profitability measured by ROA (hypothesis H2b), audit firm's international link (hypothesis H3), independent director in the board (hypothesis H9) and dual leadership structure (hypothesis H10). On the other hand, the regression result found significant negative association of total mandatory disclosure with the firms profitability measured by ROE (hypothesis H2a) and market category (hypothesis H8).

The regression result of profitability measured by ROA is consistently in line with Wallace (1987), Wallace et al. (1994), Karim (1996), Owusu – Ansah (1998), Hossain (2000). This implies that more profitable companies disclose more mandatory information on their website. It is also supported by signaling theory which indicates that companies with high profit or good news have the incentive to distinguish themselves from those with less profit or bad news: this helps to raise capital at the lowest possible price and it can be achieved through corporate internet reporting.

The positive significant association of an audit firm's international link is also consistent with Singhvi and Desai (1971), Ahmed and Nichols (1994), Street and Gray (2001), Naser et al. (2002), Karim and Jamal (2005), Nurunnabi and Monirul (2012). This means that the company, whose auditor has an international link with Big 4 companies, discloses more mandatory information on the internet to retain their reputation and differentiate themselves from other companies in Bangladesh.

Moreover, the result of the independent directors in the board hypothesis is also consistent with Chen and Jaggi (2000), Abdelsalam and Donna (2007), Ezat and Ahmed (2008) and Xiao et al. (2004) who suggest that the ratio of independent directors to the total number of directors on corporate boards is positively associated with the comprehensiveness of financial disclosures. This indicates that a higher proportion of independent directors encourage the companies to disclose more mandatory information: this leads to better

monitoring and control of the action of executive directors and safeguards the interest of different investors, who need accurate information.

In addition, dual leadership structure is also consistent with the result of Forker (1992), Gao and Kling (2012), Nandi and Ghosh (2013). The positive association implies that the existence of the role duality in the leadership structure would improve the board's effectiveness allowing it good control over the board and encourage the disclosure of more information on the internet. Forker (1992) also argued that role duality increases the monitoring quality and improves the level of disclosure.

The result of profitability measured by ROE has significant negative association, which is different from profitability measured by ROA. This means that companies, whose profitability in terms of ROE are higher; disclose less information on the internet. This result is also consistent with Bujaki and Mc Conomy (2002), Belkaoui and Kahl (1978) who measured profitability by ROE. The negative significant association of market category is consistent with Karim and Jamal (2005). This implies that the disclosure level was lower for a company whose security is categorised as Z category. The reason may be the company's intention to hide information as they failed to provide a dividend or to hold a general meeting or if they fail to run their business continuously or incur loss continuously.

On the other hand, inconsistent with hypothesis H1, this study found non-significant association of firm size with the level of disclosing mandatory information on the internet and does not accept the hypothesis. The result is consistent with Stanga (1976), Malone et al. (1993), Ahmed and Nicholls (1994), Ahmed (1996). This means that firm size has no impact on the level of mandatory disclosure. The possible reason is that the corporate internet reporting is still voluntary in Bangladesh and is not regulated.

Regarding the hypothesis H4, this study found non association of industry type with the level of mandatory disclosure on the internet and also reject the hypothesis. This implies that the disclosure of mandatory information on the internet is not affected by whether the company is financial or non-financial. The

result is consistent with Wallace et al. (1994), Naser et al. (2002), Raffournier (1995), Inchausti (1997), Patton and Zelenka (1997), Owusu-Ansah (1998), Naser and Al-Khatib (2000).

Moreover this study found non-significant association of multinational parent (hypothesis H5) with the level of disclosing mandatory information on the internet and does not accept the hypothesis. This means that the level of disclosure does not depend on whether the company is a MNC or local. The result is consistent with Oyelere et al. (2003).

Inconsistent with hypothesis H7, the present study found non-significant association of company liquidity with the level of disclosure on the internet. The result is consistent with Wallace and Naser (1995), Owusu and Ansah (1998) Belkaoui and Kahl (1978). This implies that company's liquidity position does not affect the level of disclosure on the internet.

This study also found non significant association of board size (hypothesis H11), ownership structure (hypothesis H12), and company age (hypothesis H13) and does not accept those hypotheses. The result of board size is consistent with Holthausen and Larcker (1993) and non association of ownership structure is consistent with Wallace and Naser (1995), Craswell and Taylor (1992); Naser and Al-Khatib (2000), Naser et al. (2002) and finally non association of company age is consistent with Akhtaruddin (2005), Alsaeed (2006), Curtis (1979).

7.5.1.3 Regression Analysis for Non-Financial Mandatory Disclosure Model:

Table 7.15 represents the results of OLS regression with robust standard error for the mandatory disclosure model. From the table it can be observed that the total mandatory disclosure have significant positive association ($p \leq 0.05$) with audit firm and multinational parents while it has significant negative association ($p \leq 0.05$) with firms profitability measured by ROE. In addition, independent directors in the board and dual leadership structure have significant positive association ($p \leq 0.01$) and leverage has significant negative association ($p \leq 0.10$) with the level of mandatory disclosure. The positive association means

that the total mandatory disclosure increases if the firm is audited by a Big four audit firm, have multinational parent, high number of independent directors in the board and the existence of dual leadership in the board. On the other hand, negative association means that highly levered firms and highly profitable (measured by ROE) firms disclose less mandatory information on the web.

In addition, firm size, profitability measured by ROA, liquidity measured by current ratio, and ownership structure has positive non significant association: quick ratio, market category, board size, number of listed year and company's establishment year have non significant negative association with the level of mandatory disclosure on the internet. The adjusted R square of the model explains how much of the changes in the dependent variable are explained by the changes in the independent variables. The value of the adjusted R square is 0.323 i.e. 32.3% and the R^2 is 62.9% which means that 32.3% of the changes of total mandatory disclosure are explained by the changes in its examined determinants for non-financial companies.

Referred to the different categories of mandatory disclosure, there is a significant positive association of audit firm ($p \leq 0.05$ and $p \leq 0.10$), multinational parent ($p \leq 0.01$ and $p \leq 0.05$), and number of independent director ($p \leq 0.01$ and $p \leq 0.05$) and dual leadership structure ($p \leq 0.01$) with all categories of mandatory disclosure on the internet. On the other hand, Profitability, measured by ROE, has significant negative association ($p \leq 0.01$ and $p \leq 0.05$) with all the parts of mandatory disclosure except income statement.

Moreover, Firm size and firms liquidity measured by current ratio have non significant positive association with all the parts of mandatory disclosure while firms liquidity measured by quick ratio and company age measured by both number of yeas listed and number of years established are negatively non significant with all the categories of mandatory disclosure.

Firm's profitability measured by ROA is significantly positively associated with the disclosure of director's report and balance sheet. Firm leverage has significant negative association with general disclosure and director's report.

Market category has significant negative association only with director's report and board size has significant negative association only with general disclosure. Ownership structure has positive non-significant association with all the categories of mandatory disclosure except income statement where it has non-significant negative association.

Table 7.15: OLS Regression with Robust Standard Error for Non-financial Mandatory Disclosure

	Mandatory		General		Director		Balance Sheet		Income Statement	
	Coeff.	T	Coeff.	T	Coeff.	T	Coeff.	T	Coeff.	T
Firm Size	0.018	0.56	0.034	1.12	0.022	0.57	0.027	0.79	-0.002	-0.05
Return of Equity	-0.147	-2.26**	-0.162	-2.06**	-0.242	-2.75***	-0.169	-2.35**	-0.095	-1.44
Return on Assets	0.411	1.61	0.397	1.55	0.567	1.73*	0.496	1.75*	0.300	1.18
Audit Firm Size	0.119	2.39**	0.124	2.49**	0.179	2.47**	0.089	1.69*	0.132	2.36**
Multinational Parents	0.144	2.49**	0.129	2.44**	0.175	2.18**	0.125	2.06**	0.165	2.76***
Leverage	-0.013	-1.77*	-0.017	-1.85*	-0.028	-2.62***	-0.012	-1.52	-0.008	-1.1
Liquidity-Current ratio	0.040	0.79	0.046	0.93	0.045	0.82	0.044	0.83	0.032	0.61
Quick ratio	-0.039	-0.77	-0.048	-0.96	-0.058	-1.08	-0.041	-0.79	-0.027	-0.52
Market Category	-0.086	-1.24	-0.076	-1.14	-0.149	-2.11**	-0.078	-1.01	-0.086	-1.25
Independent Director	0.096	3.01***	0.092	3.2***	0.133	3.45***	0.100	2.93***	0.087	2.59**
Board Size	-0.013	-1.13	-0.017	-1.68*	-0.018	-1.25	-0.013	-1.08	-0.008	-0.71
Role Duality	0.250	3.51***	0.253	3.74***	0.246	3.2***	0.252	3.33***	0.246	3.39***
Ownership Structure	0.007	0.14	0.001	0.02	0.045	0.7	0.012	0.22	-0.001	-0.01
No. of Year-listed	-0.002	-0.84	-0.002	-0.67	-0.002	-0.52	-0.002	-0.8	-0.003	-0.98
Year –establishment	-0.001	-0.51	-0.001	-0.89	-0.002	-1.54	0.000	-0.41	0.000	-0.06
Constant	0.231	0.74	0.251	0.86	0.081	0.21	0.131	0.4	0.352	1.1
R	.629		.637		.666		.609		.602	
R Square	.395		.406		.444		.371		.362	
Adjusted R square	.323		.334		.377		.296		.286	

7.5.1.4 Test of the Hypothesis for Non-Financial Mandatory Disclosure Model:

The result of the regression analysis agrees with research hypotheses concerning the existence of positive significant relationship between the total mandatory disclosure and audit firm's international link (hypothesis H3), multinational parent (hypothesis H3), number of independent director in the board (hypothesis H9) and dual leadership structure (hypothesis H10). On the other hand, the regression result found significant negative association of total mandatory disclosure with the firms profitability measured by ROE (hypothesis H2a) and firms leverage (hypothesis H6). This result is quite similar with the result of mandatory disclosure of the combined model.

However, the study found non-significant association of firm size (hypothesis H1), profitability (hypothesis H2b), multinational parent (hypothesis H5), liquidity (hypothesis H7), market category (hypothesis H8), board size (hypothesis H11), ownership structure (hypothesis H12), and company age (hypothesis H13) with the level of disclosing mandatory information on the internet.

7.5.2 Voluntary Disclosure Model:

7.5.2.1 Regression Analysis for Combined Voluntary Disclosure Model:

The result of the OLS regression with robust standard error for the voluntary disclosure model is presented in table 7.16. From the table it can be observed that the total voluntary disclosure has significant positive association ($p \leq 0.01$) with audit firm, industry category, multinational parent, and dual leadership structure. Firm size and industry category have also significant association ($p \leq 0.05$) with the level of disclosing voluntary information on the internet while they have significant negative association ($p \leq 0.01$) with firms profitability measured by ROE. The positive association means that the total voluntary disclosure increases with the increase in firm's size, a firm being audited by a big four audit firm, for financial companies, having multinational parents, having a high number of independent directors in the board and the existence of dual leadership in the board structure. On the other hand, negative association means that voluntary disclosure increases for non profitable companies (measured by ROE) on the web.

In addition, firm's profitability measured by ROA, firm's liquidity, market category, board size, ownership structure and company age measured by number of listed year have negative non-significant association: company age measured by company's establishment year has non significant positive association with the level of voluntary disclosure on the internet. The adjusted R square of the model explains how much of the changes in the dependent variable are explained by the changes in the independent variables. The value of the adjusted R square is 0.501 i.e. 50.10% which means that 50.10% of the changes of total voluntary disclosure are explained by the changes its examined determinants. Some prior studies have reported stronger as well as weaker explanatory power using different sets of independent variables. For example, Depoers (2000) reported 65%, Barako et al. (2006) reported 53.4% and Iskander (2008) reported 45%, Haniffa and Cooke (2002) reported 47.9%.

Referred to the different categories of voluntary disclosure, there is a significant positive association of firm size with all categories of voluntary disclosure on the internet. Audit firm size has significant positive association with all the categories of voluntary disclosure except investor information and presentation format on the website. In the same way, multinational parent has significant positive association with all categories except financial information and dual leadership structure also has significant positive association with all categories except environmental information.

In addition, firm's profitability measured by ROE is significantly negatively associated with corporate governance information, investor information and presentation format of voluntary disclosure on the website. ROA has also significant negative association with corporate social responsibility disclosure and environmental disclosure. Like profitability, market category is negatively associated with general disclosure, strategic information disclosure, corporate governance and financial disclosure. Board size has only significant negative association with sustainability disclosure and ownership structure has only significant negative association with presentation format. On the other hand, industry category has significant positive association with financial information, corporate social responsibility disclosure, environmental disclosure and sustainability disclosure; the number of independent directors has significant

positive association with general disclosure, strategic information disclosure, corporate governance disclosure, financial information disclosure and presentation format and company age measured by number of establishment years has significant positive association only with presentation format.

Moreover, company's liquidity and company age measured by the number of listed years has non significant association with all the categories of voluntary disclosure.

Table 7.16: OLS Regression with Robust Standard Error for Combined Voluntary Disclosure

	Voluntary		General		Strategy		Goverance		Financial	
	Coeff.	T	Coeff.	T	Coeff.	t	Coeff.	T	Coeff.	t
Firm Size	0.060	2.57**	0.039	1.81*	0.063	2.37**	0.069	2.44**	0.056	1.8*
Return of Equity	-0.018	-2.34**	-0.011	-1.04	-0.019	-1.38	-0.053	-3.97***	-0.019	-1.37
Return on Assets	-0.045	-0.87	-0.021	-0.33	0.006	0.07	0.061	0.54	0.021	0.28
Audit Firm Int	0.129	4.42***	0.077	2.88***	0.178	3.49***	0.202	4.97***	0.197	5.8***
Industry type	0.089	2.6***	0.028	0.81	0.084	1.55	0.092	1.6	0.105	2.15**
Multinational Parents	0.116	3.53***	0.055	1.84*	0.105	1.89*	0.140	2.73***	0.074	1.63
Liquidity(Current ratio)	0.000	-0.05	0.000	-0.02	0.003	0.46	-0.001	-0.14	-0.003	-0.57
Market Category	-0.030	-1.06	-0.087	-1.98**	-0.078	-1.75*	-0.108	-2.19**	-0.096	-1.99**
Independent Director	0.023	2.18**	0.036	3.13***	0.038	1.99**	0.053	2.64***	0.033	1.96*
Board Size	-0.004	-1.2	-0.004	-1.13	-0.007	-1.31	-0.010	-1.6	-0.005	-0.91
Role Duality	0.127	4.69***	0.172	4.03***	0.154	3.44***	0.314	5.85***	0.201	4***
Ownership Structure	-0.003	-0.14	0.011	0.46	0.024	0.63	0.005	0.14	-0.011	-0.34
Year-listed	0.000	-0.33	-0.001	-1	0.001	0.2	0.000	-0.04	0.000	0.17
Year establishment	0.000	0.04	0.000	-0.29	-0.001	-0.44	-0.003	-1.51	-0.001	-0.6
Constant	-0.377	-1.72	0.171	0.82	-0.473	-1.86	-0.377	-1.38	-0.259	-0.87
R	.728		.616		.573		.686		.658	
R Square	.531		.379		.328		.471		.433	
Adjusted R square	.501		.340		.286		.437		.397	

	CSR		Environmental		Sustainability		Investor		Presentation	
	Coeff.	T	Coeff.	T	Coeff.	T	Coeff.	T	Coeff.	t
Firm Size	0.102	2.77**	0.069	2.62***	0.057	3.06***	0.032	1.99**	0.051	2.44**
Return of Equity	-0.012	-1.12	-0.006	-0.74	-0.011	-1.6	-0.017	-3.02***	-0.023	-3.43***
Return on Assets	-0.177	-2.6***	-0.172	-2.92***	-0.080	-1.52	0.028	0.38	-0.017	-0.23
Audit Firm Int	0.159	2.74***	0.101	1.84*	0.136	4.12***	0.043	1.31	0.044	1.47
Industry type	0.134	2.33**	0.117	2.14**	0.167	4.53***	-0.034	-0.86	0.008	0.21
Multinational Parents	0.197	3.08***	0.188	2.95***	0.112	3.34***	0.097	2.5**	0.079	2.55**
Liquidity(Curr. ratio)	-0.001	-0.32	0.002	0.53	-0.001	-0.43	0.001	0.16	0.002	0.56
Market Category	0.035	0.91	0.064	1.47	0.021	1.15	-0.056	-1.45	-0.029	-0.81
Independent Director	0.018	1.14	0.012	0.82	0.004	0.41	0.019	1.54	0.022	1.76*
Board Size	-0.004	-0.81	-0.005	-1.01	-0.006	-1.71*	0.004	0.92	0.003	0.69
Role Duality	0.077	2.56**	0.048	1.56	0.063	3.1***	0.119	3.55***	0.055	1.66*
Ownership Structure	0.035	1.1	-0.012	-0.38	-0.026	-1.27	0.019	0.75	-0.040	-1.87*
Year-listed	0.001	0.53	0.000	0.05	-0.001	-0.41	-0.002	-1.36	-0.002	-1.43
Year –establishment	0.000	-0.03	0.001	0.87	0.001	1.23	0.000	-0.07	0.002	2.61***
Constant	-0.957	-2.79	-0.661	-2.62	-0.466	-2.64	-0.041	-0.26	-0.210	-1.05
R	.673		.557		.722		.493		.541	
R Square	.452		.311		.522		.243		.292	
Adjusted R square	.417		.267		.491		.194		.247	

7.5.2.2 Test of Hypothesis for Combined Voluntary Disclosure Model:

The result of the regression analysis agree with research hypotheses concerning the existence of positive significant relationship between the total voluntary disclosure and firm size (hypothesis H1), audit firm's international link (hypothesis H3), industry type (hypothesis H4), multinational parent (hypothesis H5), number of independent director (hypothesis H9) and dual leadership structure (hypothesis H10). On the other hand, the regression result found significant negative association of total voluntary disclosure with the firm's profitability measured by ROE (hypothesis H2a).

The positive association of firm size indicates that larger firms tend to disclose more voluntary information on the internet. This result is also supported by agency and capital need theory: companies may think that greater disclosure will reduce investor uncertainty as well as information asymmetry. The result is consistent with some prior studies (Ahmed and Courtis 1999, Abd-El Salam 1999, Oyelere et al. 2003, Marston and Annika 2004, Barako et al. 2006, Bonson and Thomas 2006, Sriram and Laksmana 2006, Alsaeed 2006, Uyar 2011, Alves et al. 2012, Hajji and Ghazali 2013. For example, Marston and Annika (2004) proved that firm size is a significant explanatory variable for the amount of financial and other investor-related information presented on companies' web sites. One of the conclusions of the study conducted by Sriram and Laksmana (2006) was that larger firms, on average, report more financial and non-financial data on the corporate web sites than is reported by smaller firms. Lastly, Oyelere et al. (2003) also showed that firm size has a significant and positive impact on internet financial reporting practice, and therefore, larger firms are more likely to engage in internet financial reporting.

The result of audit firm's international link is consistent with Al-Shammari (2007), Bonson and Thomas (2006), Nurunnabi and Monirul (2012). It is also supported by signalling theory as the audit firm may benefit from the higher level of disclosure of its clients as a signal of its own quality and reputation and so differentiate themselves from other audit firms. The client company may attempt to improve the appearance of its financial position and results of operations, errors and inadequate disclosure, which support such motives, may be considered to be purposely caused by the management of the company.

Therefore, auditing firms may support and encourage their clients to disclose more voluntary information which also helps to reduce cost of capital by reducing investor's uncertainty: this logic is supported by capital need theory.

The positive significant relation of Industry type is consistent with Bonson and Thomas (2006), Oyelere et al. (2003) and Xiao et al. (2004), Aly et al. (2010), Garg and Divya (2010). Signalling theory also suggests industry differences in disclosure. Companies within the same industry tend to adopt the same level of disclosure. If a company within an industry fails to follow the same disclosure practices, including internet disclosures, as others in the same industry, then it may be interpreted as a signal that the company is hiding bad news (Craven and Marston 1999).

Consistent with hypothesis H5, multinational parent has significant positive association with the level of voluntary disclosure on the internet. This result is consistent with Raffournier (1995), Bollen et al (2006). This means that the companies, who have a multinational parent, disclose more information on their website. The reason may be they have to comply with the regulation of the host country as well as the parent company. Owusu-Ansah (1998) also indicated that multinational corporations are expected to demand more information because of various issues associated with emerging economies.

Regarding the hypothesis H9, the number of independent directors in the board affects the level of internet corporate reporting. The result is consistent with Fama and Jensen (1983), Rosenstein and Wyatt (1990), Klein (1998), Chen and Jaggi (2000), Ho and Wong (2001), Cheng and Courtenay (2006), Abdelsalam and Donna (2007), Ezat and Ahmed (2008), Chau and Gray (2010), Samah and Dahawy (2010), Duchin et al. (2010). This indicates that a higher proportion of independent directors encourage the companies to disclose more voluntary information on their web sites. Therefore, a large proportion of independent directors lead to better monitoring and control over the action of executive directors: it safeguards the interests of different investors, who need accurate information.

The positive significant association of dual leadership structure is consistent with Eisenhardt (1989), Dahya et al.1996; Rechner and Dalton 1991; Donaldson and Davies (1991), Nandi and Ghosh (2013), Gao and Kling (2012). This result indicates that the existence of role duality encourage the management to disclose more voluntary information. Moreover, a significant negative association of firms profitability measured by ROE is consistent with Camfferman and Cooke (2002), Wallace and Naser (1995), which implies that more profitable companies disclose less voluntary information.

On the other hand, the current study found a non-significant association of profitability measured by ROA (hypothesis H2b) with the level of voluntary disclosure on the internet and so does not accept the hypothesis. The result is consistent with Oyelere et al. (2003), Marston and Annika (2004), Uyar (2011). This implies that profitability has no significant impact on the level of disclosure of voluntary information.

Inconsistent with company liquidity (hypothesis H7) the result does not accept the hypothesis and found a non-significant association with the level of disclosure. This means that the liquidity position of a company has no impact on the corporate internet reporting. The result is consistent with Alsaeed (2006), Belkaoui and Kahl (1978), Ahmed and Courtis (1999), Aly et al. (2010), Puspitaningrum and Sari (2012).

Regarding the board size (hypothesis H11), this study does not find any significant association with the level of disclosing voluntary information on the internet which means the level of voluntary disclosure does not affect internet reporting. The result is consistent with Arcay and Vazquez (2005), Cheng and Courtenay (2006), and Gandia (2008).

Inconsistent with ownership structure (hypothesis H12) the study does not accept the hypothesis as it found non-significant association with the internet disclosure level. This means that the structure of ownership of a company has no impact on internet disclosure. The result is consistent with Craswell and Taylor (1992), Naser and Al-Khatib (2000), Raffournier (1995), Abdel-Salam and Donna (2007), Trabelsi and Labelle (2006).

Moreover, the present study found non-significant association of company age (hypothesis H13) with the level of corporate internet reporting. The result is consistent with Alsaeed (2006), Hossain et al. (2008), Nandi and Ghosh (2013), Al-Shammari et al. (2007), Al-Shayeb (2003), Nurunnabi and Monirul (2012). The possible reason is that corporate internet reporting is voluntary in Bangladesh and there is no regulatory pressure to disclose information on the internet.

Regarding hypothesis H8 (market category), this study found non-significant association with the level of voluntary disclosure on the internet. This implies that the level of disclosing voluntary information on the internet does not depend on the company's market category.

7.5.2.3 Regression Analysis for Non-Financial Voluntary Disclosure:

The result of OLS regression with robust standard error for voluntary disclosure model is presented in table 7.17. From the table it can be observed that the total voluntary disclosure has significant positive association with firm size ($p \leq 0.10$), company's profitability measured by ROA ($p \leq 0.01$), audit firm's international link ($p \leq 0.01$) multinational parent ($p \leq 0.01$), independent director in the board ($p \leq 0.01$) and dual leadership structure ($p \leq 0.01$) while it has significant negative association with firms profitability measured by ROE ($p \leq 0.01$) and firm leverage ($p \leq 0.05$). The positive association means that total voluntary disclosure increases with the increase in firm's size, firm's profitability measured by ROA, audited by big four audit firm, having multinational parents, high number of independent directors in the board and the existence of dual leadership in the board structure. On the other hand, negative association means that voluntary disclosure on the internet decreases for profitable companies (measured by ROE) and highly levered firm.

In addition, firm's liquidity measured by quick ratio, market category, board size, ownership structure and company age measured by number of listed years have a negative non-significant association. A company's liquidity measured by current ratio and company age measured by established year have non-Significant positive association with the level of voluntary disclosure on the internet. The value of adjusted R square is 46.5% which means that 46.5% of

the changes of total voluntary disclosure are explained by the changes in its examined determinants. Some prior studies have reported stronger as well as weaker explanatory power using different sets of independent variables. For example, Depoers (2000) reported 65%, Barako et al. (2006) reported 53.4% and Iskander (2008) reported 45%, Haniffa and Cooke (2002) reported 47.9%.

Referred to the different categories of voluntary disclosure, there is a significant positive association of multinational parent with all categories of voluntary disclosure on the internet except general disclosure. Firm size has significant positive association with strategic information, corporate governance, corporate sustainability, and presentation format. Company's profitability measured by ROE has significant negative association with all the categories of voluntary disclosure except environmental information, investor information and presentation format on the website. Also company's profitability measured by ROA has significant positive association with all the categories except investor information and presentation format. Audit firm's international link has significant positive association with strategic information, corporate governance disclosure, financial disclosure and sustainability disclosure.

In the same way, leverage is significantly and negatively associated with strategic information, corporate governance disclosure, financial disclosure, CSR disclosure and sustainability disclosure. Although investor relation is positively and significantly associated with current ratio, it is negatively and significantly associated with quick ratio. Market category is negatively and significantly associated with general and corporate governance disclosure. Independent director in the board has significant positive association with general, strategic, corporate governance, financial, investor and presentation format. Moreover, role duality has significant positive association with general, strategic, corporate governance, financial, sustainability and investor information. Ownership structure has significant positive association only with CSR disclosure. Company's listed year has significant negative association with environmental, sustainability, investor and presentation format while company's established year has significant positive association with environmental, sustainability and presentation format. Moreover, board size has non-significant association with all the categories of voluntary disclosure.

Table 7.17: OLS Regression with Robust Standard Error for Non-financial Voluntary Disclosure

	Voluntary		General		Strategy		Governance		Financial	
	Coeff.	T	Coeff.	T	Coeff.	T	Coeff.	T	Coeff.	t
Firm Size	0.026	1.77*	0.027	1.26	0.039	2.1**	0.038	1.76*	0.038	1.42
Return of Equity	-0.076	-2.7***	-0.062	-1.7*	-0.117	-2.94***	-0.155	-2.35***	-0.122	-2.34**
Return on Assets	0.409	3.45***	0.256	1.72*	0.436	1.77*	0.625	2.16**	0.415	2.19**
Audit Firm Size	0.088	2.67***	0.051	1.4	0.119	1.76*	0.197	3.12***	0.191	4.34***
Multinational Parents	0.113	3.08***	0.043	1.11	0.137	1.97*	0.148	2.41**	0.095	1.8*
Leverage	-0.008	-2.25**	-0.007	-1.5	-0.013	-2.65***	-0.013	-1.76*	-0.014	-2.17**
Current ratio	0.013	0.69	0.033	1.14	0.028	0.77	0.0001	0	0.012	0.31
Quick Ratio	-0.020	-1.04	-0.041	-1.37	-0.036	-0.97	-0.014	-0.38	-0.018	-0.48
Market Category	-0.033	-1.07	-0.090	-1.88*	-0.066	-1.34	-0.108	-1.98**	-0.070	-1.39
Independent Director	0.048	3.94***	0.063	3.79***	0.071	2.82***	0.116	4.13***	0.079	3.22**
Board Size	-0.004	-0.92	-0.013	-1.56	-0.010	-1.1	-0.014	-1.3	-0.010	-1.15
Role Duality	0.100	3.35***	0.159	3.34***	0.131	2.69***	0.271	4.32***	0.165	2.94***
Ownership Structure	-0.0002	-0.01	0.024	0.67	0.011	0.23	-0.0003	-0.01	-0.019	-0.43
No. of Year-listed	-0.002	-1.58	-0.002	-1.28	-0.002	-0.55	-0.001	-0.41	-0.001	-0.34
Year –establishment	0.001	1.4	0.0003	0.49	0.0002	0.12	-0.002	-1.46	0.0001	0.08
Constant	-0.066	-0.47	0.318	1.58	-0.231	-1.25	-0.089	-0.4	-0.083	-0.32
R	.723		.631		.580		.707		.644	
R Square	.522		.399		.337		.500		.414	
Adjusted R square	.465		.327		.257		.440		.344	

	CSR		Environmental		Sustainability		Investor		Presentation	
	Coeff.	t	Coeff.	T	Coeff.	T	Coeff.	T	Coeff.	t
Firm Size	0.024	1.2	0.006	0.3	0.014	1.66*	0.019	1.01	0.039	2**
Return of Equity	-0.083	-2.77***	-0.036	-1.37	-0.050	-2.69***	-0.020	-0.49	-0.058	-1.37
Return on Assets	0.737	3.06***	0.478	1.94*	0.420	2.98***	0.307	1.42	-0.008	-0.07
Audit Firm Size	0.083	1.33	0.022	0.36	0.062	1.95*	0.036	0.77	0.033	0.87
Multinational Parents	0.196	2.77***	0.188	2.5**	0.083	2.61***	0.079	1.68*	0.069	1.82*
Leverage	-0.010	-2.65***	-0.004	-1.2	-0.006	-2.61***	0.0003	0.07	-0.005	-0.87
Current ratio	0.005	0.15	0.018	0.77	-0.006	-0.41	0.050	1.87*	0.013	0.52
Quick Ratio	-0.012	-0.38	-0.025	-1.01	0.002	0.12	-0.052	-1.98**	-0.020	-0.79
Market Category	0.026	0.74	0.044	0.92	0.011	0.51	-0.051	-1.18	-0.044	-1.02
Independent Director	0.004	0.27	0.017	0.89	0.005	0.55	0.061	3.35***	0.059	3.18***
Board Size	0.007	0.76	-0.001	-0.15	-0.002	-0.58	-0.003	-0.38	0.000	-0.04
Role Duality	0.036	1.36	0.021	0.66	0.039	2.26**	0.098	2.68***	0.041	1.14
Ownership Structure	0.058	2.03**	-0.018	-0.54	-0.006	-0.32	0.008	0.23	-0.037	-1.31
Year-listed	-0.002	-1.15	-0.003	-1.74*	-0.003	-2.58**	-0.003	-1.72*	-0.003	-1.77*
Year –establishment	0.002	1.46	0.003	3.14***	0.002	3.36***	0.001	0.85	0.002	3.73***
Constant	-0.277	-1.49	-0.089	-0.49	-0.076	-0.96	0.063	0.35	-0.085	-0.47
R	.646		.528		.677		.581		.566	
R Square	.417		.279		.459		.337		.320	
Adjusted R square	.348		.192		.394		.258		.238	

7.5.2.4 Test of Hypothesis for Non-Financial Voluntary Disclosure Model:

The result of the regression analysis agree with the research hypotheses concerning the existence of positive significant relationship between the total voluntary disclosure on the internet with firm size (hypothesis H1), profitability measured by ROA (hypothesis H2b), audit firm's international link (hypothesis H3), multinational parent (hypothesis H5), independent director in the board (hypothesis H9) and dual leadership structure (hypothesis H10). On the other hand, the regression result found significant negative association of total voluntary disclosure on the internet with the profitability measured by ROE (hypothesis H2a) and leverage (hypothesis H6).

However, the study found non-significant association of liquidity (hypothesis H7), market category (hypothesis H8), board size (hypothesis H11), ownership structure (hypothesis H12), and company age (hypothesis H13) with the level of disclosing voluntary information on the internet.

7.6 Conclusion:

This chapter identified the factors affecting corporate internet reporting practices in Bangladesh. It examines whether the firm size, profitability, audit firm's international link, industry type, multinational parent, leverage, liquidity, market category, independent director in the board, dual leadership structure, board size, ownership structure, and company age affect the disclosure of information on the internet. This chapter includes two phases of analysis. Firstly, it examines the association of each independent variable separately with the dependent variable through bivariate analysis. Finally, it examines the association of all independent variables with the dependent variable through multivariate analysis to identify the combined effect of applying all independent variables at the same time.

The findings of the bivariate analysis indicate that most of the independent variables are related to the dependent variables. In the case of the mandatory disclosure model (combined), firm size, profitability, audit firm's international link, industry type, multinational parent, liquidity, independent directors in the board, board size, dual leadership structure are significantly and positively related with the disclosure of mandatory information on the internet. Only

market category and company age measured by the number of listed years have significant negative association with mandatory reporting on the internet.

This result of combined sample is slightly different in the case of the non-financial sample companies. The study found significant positive association of profitability, audit firm's international link, multinational parent, independent director in the board, dual leadership structure, ownership structure, liquidity measured by quick ratio and significant negative association of market category, company age measured by number of listed year, leverage with the disclosure of mandatory information. Although firm size and board size are significant in case of combined sample, they are non-significant association in case of non-financial sample. Only the company's establishment year has non-significant association with the mandatory disclosure in both samples.

Regarding voluntary disclosure (combined), firm size, profitability measured by ROE, audit firm's international link, industry type, multinational parent, independent director in the board, board size, dual leadership structure, ownership structure have significant positive association and market category has significant negative association with the disclosure of voluntary information on the internet. In the case of non-financial sample companies, the disclosure of voluntary information has significant positive association with firm size, profitability, audit firm's international link, multinational parent, independent director in the board, board size, dual leadership structure, ownership structure and significant negative association with market category and leverage. In both cases liquidity and company age have non-significant association.

Although most of the variables are significant in bivariate analysis, the result is quite different in multivariate analysis where all variables are examined together to identify the combined effect. Based on the findings of the mandatory disclosure model, the study found significant positive association between mandatory disclosure on the internet and audit firm's international link, independent directors in the board and dual leadership structure and significant negative association with profitability measured by ROE. In the combined sample profitability measured by ROA have significant positive association with the mandatory disclosure but it is non-significant in the non-financial sample.

While market category has significant negative association with mandatory disclosure in non-financial sample, it is non-significant in combined sample. Again, multinational parent has significant positive association with the mandatory disclosure in non-financial sample companies, but it has a non-significant association in the combined sample. Although leverage has significant negative association with mandatory disclosure in the non-financial sample, it has non-significant association in the combined sample. Market category is also significantly and negatively associated in the combined sample. However, in both cases, firm size, industry type, board size, ownership structure and company age have no association with mandatory disclosure on the internet.

Regarding the voluntary disclosure model, firm size, audit firm's international link, multinational parent, independent directors in the board and dual leadership structure has significant positive association: profitability measured by ROE has significant negative association with the voluntary disclosure on the internet. On the other hand, profitability measured by ROA, liquidity, market category, board size, ownership structure and company age have non-significant association with the voluntary disclosure. Although profitability measured by ROA has significant positive association and leverage has significant negative association with voluntary disclosure in the non-financial sample, they are non-significant in the combined sample. Moreover, industry type has significant positive association with voluntary disclosure in combined sample.

This chapter concludes that the determinants of mandatory and voluntary disclosure vary among the different categories. This result will help to identify the characteristics of companies disclosing more mandatory or more voluntary information on the internet. Moreover, the explanatory power of the model varies among the different categories.

Chapter: 8

Conclusions and Recommendations

8.1 Introduction:

There has been tremendous growth in corporate sector and market activities in transitional and emerging economies in recent times. As the capital requirements of companies in these economies grow to support their increased business activities, so does the requirement for greater financial disclosure. Corporate internet reporting provides an additional cost-effective channel for companies in these economies to voluntarily deposit financial information in the market place. This research has examined the extent to which companies listed in the Dhaka Stock Exchange are taking advantage of the opportunity afforded by the Internet to communicate their financial information.

The current chapter summarises the results and conclusions from chapter six and chapter seven. It starts with section 8.2 that outlines the objective, research questions and methodology. The findings of the study are summarised in section 8.3. Section 8.4 outlines the contributions made to the knowledge, followed by the recommendation for improving corporate internet reporting in section 8.5. Limitations and the scope of further research are discussed in section 8.6. The chapter ends with section 8.7 that presents the conclusion of this study.

8.2 Research Objectives, Questions and Methodology

The main objective of the present study is to identify the extent of corporate internet reporting practices in an emerging economy through the extent of disclosing mandatory and voluntary information on the internet. It also addresses the determinants of such reporting practices. It uses a sample from Bangladesh as an emerging capital market that lacks enough number of disclosure studies regarding corporate internet reporting.

The first two research questions mentioned in chapter one have been answered by applying a descriptive analysis of mandatory reporting and voluntary reporting and its different categories on the internet by the Bangladeshi companies. The results of the disclosure checklist, the research instrument, have been analysed in different categories and in total. In order to find out the

answer of third research question, the study formulated a number of research hypotheses. These hypotheses are developed on the basis of a theoretical framework and evidence from the prior literature review on corporate reporting and they are tested empirically by applying different statistical techniques. The following section summarises the results of the study.

8.3 Findings of the Study:

In general the current study highlighted the corporate internet reporting practices in an emerging economy like Bangladesh. The data were collected by visiting the website of 234 listed companies in Bangladesh. The study revealed that 90.70% companies have website and all of them discloses some sort of information on their website whereas Nurunnabi and Monirul (2012) found only 83 companies (29.12 percent) that have websites in 2009. So it can be concluded that the use of internet for business reporting is increasing in Bangladesh which justified the necessity of this study.

By developing two separate disclosure checklist, firstly it examines the extent of mandatory disclosure on the internet by the Bangladeshi companies and secondly it examines the extent of voluntary disclosure on the internet. From the findings, it is revealed that the level of total mandatory disclosure on the internet by the listed companies in Bangladesh is low: the figure stands at 66.24%. Among the categories of mandatory disclosure, companies disclose the most information regarding general corporate information and the least regarding the director's report. There is huge discrepancy in the disclosure of mandatory information on corporate websites. In the case of non-financial companies the mean of total mandatory disclosure score is about 60.57% with a standard deviation of 32.04%. Here also the general information disclosure represents the highest disclosure level of 71.94% on the internet while disclosure of director's report presents the lowest disclosure level of 45.30%.

The study revealed that many company do not meet the disclosure requirements of the regulatory bodies in Bangladesh. The reason may be the disclosure of information on the internet is still voluntary. The low level of overall compliance with mandatory disclosure by Bangladeshi firms can be attributed to organizational culture, poor monitoring, and lapse in enforcement by the

regulatory body. Disclosure decisions are culture-driven (El-Gazzar et al. 1999). Ho and Wong (2001) also argued that in countries where the culture supports a high level of secrecy, managements become less transparent and are less likely to favor a high level of disclosure.

Regarding voluntary disclosure, the result revealed that the level of disclosing voluntary information on the internet is only 35.46% which is also very low in comparison to mandatory disclosure. General corporate information represents the highest disclosure level of 70%, while the corporate environmental information disclosure presents the lowest disclosure level of 11.97%. Disclosure of social responsibility reporting and sustainability information on the internet is also low, 19.20% and 18.58%respectively. However, in case of non-financial companies; the average disclosure rate is 29.50% which is lower than the combined sample. It is also identified that the disclosure of general information on the website is the highest disclosing category with the value of about 66.10% and the lowest disclosing category is corporate environmental information which is only about 6.93%.These results clearly suggest that the listed companies in Bangladesh are not using the full potential of the Internet for communicating corporate information to stakeholders.

In order to gain a clear overview of corporate internet reporting practices by the listed companies in Bangladesh, sector wise analysis is performed which helped to identify the highest and lowest disclosing sector. It is observed that among the fifteen sectors, the telecommunication sector discloses highest mandatory information at 85.44% and the tannery sector discloses the lowest with only 37.86%.Inthe case of voluntary disclosure, the banking sector discloses the highest amount of information (62.23%) and the Tannery sector discloses the lowest amount of information (22.40%). So it can be concluded that Tannery sector of Bangladesh discloses the lowest amount of mandatory and voluntary information on the internet.

Finally the study identified the determinants of mandatory and voluntary reporting on the internet through correlation, bivariate and multivariate analysis. The correlation coefficient of both the Spearman test and the Pearson test, showed that the level of mandatory disclosure has significant positive

relationship with firm size, audit firm's international link, industry category, multinational parent, independent director in the board, board size, role duality and significant negative association with market category and company age measured by listed year. But in case of non-financial companies, while profitability measured by ROA, audit firm, multinational parent, independent director, role duality and ownership structure are all positively and significantly associated with the level of mandatory disclosure, market category is significantly negatively associated with the disclosure level.

Regarding voluntary disclosure, the correlation coefficient of both the Spearman test and the Pearson test, represented that the level of voluntary disclosure has significant positive relationship with firm size, audit firm's international link, industry category, multinational parent, liquidity, independent director in the board, board size, role duality and significant negative association with market category. But in case of non-financial companies, while firm's size, profitability measured by ROA, audit firm's international link, leverage, independent director in the board, role duality and ownership structure are all positively and significantly associated with the level of voluntary disclosure, market category is significantly negatively associated with the disclosure level.

The result of bivariate analysis showed that firm size, profitability measured by ROE, audit firm's international link, industry type, multinational parent, independent directors in the board, board size, dual leadership structure, and market category have significant association with both mandatory and voluntary disclosure. But these results are very specific. So, to generalize the result of this study multivariate analysis was applied.

The result of multivariate analysis differed slightly from bivariate analysis which revealed that the level of mandatory disclosure on the internet has significant positive association with firm's profitability measured by ROA, audit firm's international link, independent director in the board, dual leadership structure and significant negative association with firm' profitability measured by ROE and market category. But in case of non-financial companies, audit firm's international link, multinational parent, independent director in the board, dual leadership structure have significant positive association and profitability (ROE)

and leverage have significant negative association with the level of mandatory disclosure.

The study also indentified the determinants of voluntary disclosure on the internet. The level of voluntary disclosure depends on the firm size, audit firm's international link, industry type, multinational parent, independent director in the board, dual leadership structure and profitability (ROE) whereas in non-financial companies, the disclosure level depends on firm size, profitability (both ROE and ROA), audit firm's international link, multinational parent, independent director in the board, dual leadership structure and leverage.

From the findings it can be concluded that audit firm's international link, independent director in the board, dual leadership structure have significant positive association and profitability measured by ROE has significant negative association with the level of disclosure of mandatory and voluntary information by the Bangladeshi companies. However, firm size, multinational parent, and industry type have significant positive association with the level of disclosing voluntary information: they are non-significant in mandatory disclosure. In addition, board size, ownership structure and company age has a non-significant association with the level of disclosure (both mandatory and voluntary). Nurunnabi and Monirul (2012) also found the significant relationships of audit firm's with the level of internet reporting. The reason may be larger audit firms may have more influence over their clients to disclose more information than the minimum, which is adequate in order to maintain their reputation in the market.

8.4 Contribution to Knowledge:

Regarding the issue of "corporate internet reporting", the most important decisions made by corporations is whether to disclose information about their organisation and to what extent they should do soon the internet. The decision to disclose information on the internet has some relevant advantages, such as an increase in the investors' trust in the firm which usually helps to raise capital at the lowest cost. It ensures transparency in disclosing information which is very important in an emerging capital market. The users of financial reporting, including investors, need confidence in financial markets and information

disclosure is a vital element to build this confidence. Given this, this thesis focused on determining the extent of mandatory and voluntary reporting practices on the internet and the determinants that affects the level of disclosure: as the use of the internet to disseminate corporate information is increasing, this empirical study provides a communication bridge to the various stakeholders in the society. This research aims to expand the understanding about internet financial reporting and increasing the overall disclosure level, which will be an incentive to encourage investment in Bangladeshi companies as well as other emerging countries.

The thesis is expected to contribute to corporate reporting literature both in macro and micro level. The study classifies the information as mandatory and voluntary information and developed two separate sets of disclosure checklists to identify the current status of internet reporting in an emerging economy. These indexes were modified to be suitable for companies working in the Bangladeshi environment context and could be used by other researchers to investigate internet financial reporting and disclosure for companies working in other emerging countries that are experiencing similar economic changes.

These checklists were then classified into different categories: there are four categories of information in the mandatory and nine categories of information in the voluntary checklist which helped to identify the highest and lowest disclosure categories of information. Moreover, both the mandatory and voluntary data set is classified into two categories: the total data set named as combined data and non-financial data to examine the effects of the determinants in non-financial sector separately.

The thesis provides a comprehensive view of the previous studies that have discussed corporate internet reporting in developed and emerging economies and especially in Bangladesh. By providing the current status of disclosing mandatory and voluntary information on the internet, this study reduces the existing gap in the literature relating to emerging economy.

The study conveyed the importance of employing a wider theoretical framework by encompassing several disclosure theories to obtain a full explanation of

mandatory and voluntary reporting practices on the internet. The results signify that disclosure theories that originating from developed countries are also applicable in emerging capital markets.

The study provides the evidence that at present 90.70% companies have websites and all of them disclose some sort of mandatory and voluntary information on the internet. While some sectors are disclosing the most information like the Telecommunication sector, others sectors are disclosing little information, Tannery sector. This study will help to identify those lower disclosing sectors.

The result of the study will provide beneficial insights and recommendations for legislators, accounting professionals and researchers to assess the current status of corporate internet reporting in Bangladesh and the characteristics of the companies that are, and that are not, satisfying national and international investors' demand for online information. In macro level, it also helps regulators to assess the necessity of developing a framework and guidelines for corporate internet reporting which will reduce the information asymmetry and increase investors' confidence. As an increasing number of companies all over the world are using the internet for financial disclosure, it is high time to think about an International Internet Accounting Standards (IIASs) for harmonisation of financial reporting practices. Though regulations alone can do little to ensure disclosure because companies view that disclosure excellence lies in the hands of regulatory bodies who work for safeguarding the company's value for shareholders (Ho and Wong (2001).So the regulatory bodies need to create an environment that helps become aware of the companies consequences of nondisclosure of adequate information.

This study provides an update result after the Directive Circular (which was issued by the order of the Securities and Exchange Commission SEC/CMRRCD/ 2009-193/09, Mrs. Ruksana Chowdhury, Executive Director on January 17, 2010) regarding the disclosure of quarterly financial statements in company web-sites. It is believed that the result of this study will contribute to develop further rules or guidelines regarding internet reporting.

It is expected that this research will be beneficial to companies, investor relations, financial analysts, auditors, investors and other users. Companies need to attract investors by disclosing timely, relevant information. Financial analysts will save time and effort in collecting and analysing the information their clients need. International investors can easily access and obtain information required for their investment decisions. This study will help to identify the importance of corporate internet reporting.

8.5 Recommendations for Improving Corporate Internet Reporting:

In the near future, corporate reporting on the internet will not be just about providing traditional information, it is expected that future internet disclosures are more likely to provide certain advantages over the traditional annual reporting by extending the amount of information, improving timeliness, allowing a degree of interactivity, and also likely to provide annual financial data on an updated monthly basis or on a rolling basis. As the findings revealed that most of the companies have a web page, so it can be said that having a corporate web site is a common practice in Bangladesh. The regulators like BSEC and ICAB can play an important role in promoting corporate websites as a communication tool for investors by issuing guidelines for corporate internet reporting which can be considered as a motivating factor for companies. They should update the standards and guidelines of corporate reporting.

The study offers certain implications for corporations, regulators and market participants. First, corporations need to take investor relations more seriously. They can do this by setting up separate investor relations departments and can use corporate web sites for investor relations more effectively by disclosing relevant information on a timely basis. The findings indicate that the information level disclosed on corporate web sites varies among firms. While some firms disclose comprehensive information that stakeholders may benefit from, others disclose very little information. The gap in information disclosure level among different sectors shows this succinctly and this can be closed by implementing the guidelines.

Furthermore, there are differences among subcategories of disclosure items. While the disclosure percentage of some items is high, others are quite low.

This does not mean that every item deserves equal disclosure. Nevertheless, attention ought to be paid to the percentage of items or categories. For example, corporate environmental disclosure is the least among subcategories, and hence needs improvement. It is the appropriate time to make it mandatory for all companies to publish corporate social responsibility reporting, environmental reporting and sustainability reporting on the internet. It is also important for companies to disclose the audited financial statements and differentiate these from un-audited financial statements.

Secondly, the study has some implications for regulators as well. The current "comply or explain" approach regarding corporate governance guidelines seems to be insufficient to motivating companies to disclose information. In addition there is only a directive circular regarding corporate internet reporting which is also insufficient. There is a need to enforce disclosure of at least some minimal level of information. Policies incorporating rewards and sanctions may be helpful in improving the situation. A new company act is supposed to be drafted and passed into laws regarding internet reporting.

Finally, some responsibilities fall on the shoulders of stakeholders as well. They can contact the investor relations departments of firms, and demand more information disclosure. Present or potential investors may send messages to the management. Shareholders may express the hardships they face in finding necessary information in the firm's web page. Users can sign up for copies of all company announcements and press releases to be emailed to them after they hit the stock exchange screen.

To increase the transparency of these companies, and consequently that of the financial markets, it is necessary that the company's analysed should devote much more effort to the use of the internet as a medium for the disclosure of corporate information. It is necessary to protect the investors. In a developed economy, like the European economy, companies have accepted the importance of the internet as a corporate reporting medium and they are very interested in digital reporting (Bonson and Thomas 2002). Like the developed economy, corporate reporting in the emerging economy should be digitalised in

order to attract potential investors world-wide and to improve relations with stakeholders.

It is recommended that members of the accounting profession should consider and encourage the improvement of increased content, improved accessibility, improved verification and more sophisticated use of the website as a mechanism for feedback. Companies can enhance their ability to have two-way communications with a broader range of potential stakeholders.

8.6 Limitation and Scope of Further Research:

There is no perfect study and this study is no exception. It has some limitations that need to be acknowledged and addressed when assessing the findings of the study. This section summarises these limitations.

This study presents a snapshot of internet financial reporting of Bangladeshi companies from December 2013 to March 2014. As internet reporting is a new phenomenon in Bangladesh, this study could not examine the longitudinal data of internet reporting, and so is limited to a cross-sectional study. However, this study provides a base for future longitudinal studies of internet reporting in Bangladesh.

The explanatory power in the multiple regression analysis ranged between 30% and 50%; although this percentage is considerable, it might indicate that other variables that were not included in the model affect the level of disclosure. Some variables are excluded in this study because of their unavailability, for example, the qualification of accountants, the attitude of management to IT, audit committee, and the technological infrastructure. Therefore, future studies might usefully employ other variables, which could affect internet financial reporting and disclosure in Bangladesh. Moreover, the study could not consider the endogeneity / causality issues in the empirical models.

In this study, all items included in the disclosure index are equally weighted, which means that all information items are assumed to be of the same degree of importance for investors. However, assigning different weights for different items in the list might mislead because the relative importance of each item

varies from company to company. Future studies could use a weighted disclosure index but would need to ensure that the internet reporting standards are harmonized.

The current study developed a self constructed checklist to measure the extent of disclosure using the disclosure index technique. While a number of steps have been followed to lessen subjectivity in selecting information items to be included in the checklist (see section 5.6), it cannot be argued that the study is free from subjectivity. Moreover, measuring the extent of disclosure may be a problem but the use of disclosure index methodology seems reasonable as it satisfies the requirements of reliability and validity and has been extensively used in previous disclosure studies (Marston and Shrives 1991). Furthermore, Cooke and Wallace (1989), suggest that it is a suitable proxy to gain insight into the level of information disclosed by companies.

This study investigated the extent of internet reporting and characteristics of companies adopting internet financial reporting and as such it focused on supply rather than demand. Therefore, a better understanding of the different needs of users and the potential for effective reporting activity could be achieved by measuring demand side factors such as the frequency of visits to corporate web sites to download or view financial information.

8.7 Conclusion:

The previous discussion explained in a comprehensive fashion the overview of the whole thesis. This thesis is considered to be unique for the following reasons. First, it is examining the corporate internet reporting practices with one of the most detailed checklists in this area of research. Second, the checklists categorized the mandatory disclosure into four categories and voluntary disclosure into nine categories of disclosure and examined the determinants of internet disclosure not just for the total mandatory and voluntary disclosure, but for every single category over the examined period of time.Third, the thesis is introducing a recent area of corporate reporting, corporate internet reporting, which acts as an effective method in reducing information gap compared to the other traditional methods.

While it is recognised that this research has some limitations, it is believed that the findings of this research provide a useful insight into the corporate internet disclosure practices of Bangladeshi companies with regard to two disclosure categories i.e. corporate mandatory disclosure and voluntary disclosure: areas which have been neglected by previous studies. This adds a new dimension to the studies on corporate internet disclosure and the study has achieved its aims, has made policy recommendations and also provides a starting point for many future research possibilities in the area of financial reporting as discussed above.

This study will help to realize the importance and determinants of corporate internet reporting in any emerging economy. It can be concluded that while numerous variations exist, the pressures on companies, worldwide to become widely accessisable, more transparent, accountable, responsible and ultimately to help supply chains and economies to become more sustainable. From the findings companies as well as regulators will be able to identify the gap between existing rules and the reporting practices by the companies and also help to develop rules and guidelines both in national and international level to harmonize the corporate internet reporting practices.

The result of this study indicates that the existence of low level of voluntary disclosure is considered to be a sign of the existence of the information gap which contributes to the information asymmetry. It is believed that increasing the level of internet disclosure will reduce this information asymmetry and reduces the cost of external financing. Accordingly, this type of disclosure is considered to be an effective solution for the reduction of the information gap.

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Appendix-A

Mandatory Disclosure Checklist

S. N.	A. General disclosures	Sources
1	Auditor's report	CA-1994, Sec-183(3)
2	Review of the company's financial statements	IAS – 1.27(a)
3	A significant acquisition or disposal of fixed assets	IAS – 1.28
4	Gains and losses on the disposal of non-current assets	IAS – 1.34
5	Audited financial statements (BS and P & L a/c)	CA – 1994, Sec – 183(3)
6	The period covered by the financial statements	CA – 1994, Sec- 183(4); IAS – 1.49
7	Balance sheet and Profit and Loss account	CA – 1994, Sec – 183(1)
8	Performance at a glance- 3 years	CA – 1994
9	Cash flow statement	CA – 1994, Sec – 183(a)
10	All sales and purchase of goods by the company	CA – 1994, Sec – 183(b)
11	Comparative information shall be disclosed in respect of the previous period	IAS – 1.36
12	Board of Director's report	CA – 1994, Sec – 183
13	Legal form of the entity, its country of incorporation and the address of its registered office	IAS – 1.126 (a)
14	Nature of the entity's operation and its principal activities	IAS – 1.126 (b)
15	Summary of significant accounting policies	IAS – 1.105
16	The date of financial statements authorisation of issue	IAS – 10.17
17	The nature and quantity of changes in accounting policy	CA – 1994,Schedule – XI, Part - I; IAS 8.28(c)
18	Notes to the accounts	CA – 1994, Sec – 185(6); SEC rules – 1987,

		Sec – 12(1)
19	Disclosure of all significant accounting policies	CA – 1994,Schedule – XI, Part – I
20	Statement of changes in financial position	CA – 1994, Schedule – XI, Part – I
21	Nature of the activities of the enterprise	CA – 1994, Schedule – XI, Part – I
22	All material information should be disclosed	CA – 1994, Schedule – XI, Part – I
23	Any restriction on the title to assets should be clearly stated	CA – 1994, Schedule – XI, Part – I
	B. Director's Report	
24	Statement of company's affairs	CA – 1994, Sec – 184(1)(a)
25	The amount proposed by the board to carry to any reserve	CA – 1994, Sec – 184(1)(b)
26	The amount of dividend recommended by the board	CA – 1994, Sec – 184(1)(c)
27	Material changes and commitments affecting the financial position of the company	CA – 1994, Sec – 184(1)(d)
28	Changes in the nature of business during the year	CA – 1994, Sec – 184(2) (a)
29	Changes in the nature of company's subsidiaries business during the year	CA – 1994, Sec – 184(2) (b)
30	Changes in the classes of business of company's interest	CA – 1994, Sec – 184(2) (c)
31	Fullest information of every reservation, qualification or adverse remark contained in the audit report	CA – 1994, Sec – 184(3)
	C. Contents of Balance Sheet	
32	Total fixed assets and its composition	CA – 1994, Sec – 185, Schedule – XI, Part – I
33	Fundamental accounting assumptions	CA – 1994, Sec – 185, Schedule – XI, Part – I
34	Method of depreciation	CA – 1994, Sec – 185, Schedule – XI, Part – I
35	Original cost of each fixed assets	CA – 1994, Sec – 185, Schedule – XI, Part – I

36	Addition to the fixed assets during the year	CA – 1994, Sec – 185, Schedule – XI, Part – I
37	Amount of depreciation / deductions during the year	CA – 1994, Sec – 185, Schedule – XI, Part – I
38	Total amount of accumulated depreciation during the year	CA – 1994, Sec – 185, Schedule – XI, Part – I
39	Aggregate book value of company's quoted investments and also market value	CA – 1994, Sec – 185, Schedule – XI, Part – I
40	Aggregate book value of company's unquoted investments and also market value	CA – 1994, Sec – 185, Schedule – XI, Part – I
41	Nature of investment and its classification (Govt. securities, shares, debentures or bonds)	CA – 1994, Sec – 185, Schedule – XI, Part – I
42	Mode of valuation of investments (cost or market)	CA – 1994, Sec – 185, Schedule – XI, Part – I
43	Inventory valuation method	CA – 1994, Sec – 185, Schedule – XI, Part – I
44	Current assets and its composition	CA – 1994, Sec – 185, Schedule – XI, Part – I
45	Net realizable value of inventories	CA – 1994, Sec – 185, Schedule – XI, Part – I
46	Debt classification	CA – 1994, Sec – 185, Schedule – XI, Part – I
47	Amount of debt due by directors	CA – 1994, Sec – 185, Schedule – XI, Part – I
48	The maximum amount of debt due by directors	CA – 1994, Sec – 185, Schedule – XI, Part – I
49	Cash in hand and bank	CA – 1994, Sec – 185, Schedule – XI, Part – I
50	Amount of leasehold property and expenditure on property development	BAS 16,17
51	Cash which is not immediately available for use	CA – 1994, Sec – 185, Schedule – XI, Part – I
52	Classification of loan and advances	CA – 1994, Sec – 185, Schedule – XI, Part – I
53	Trade and other receivables	CA – 1994, Sec – 185, Schedule – XI, Part – I
54	Advances recoverable in cash or in kind	CA – 1994, Sec – 185, Schedule – XI, Part – I

55	Current liabilities and its composition	CA – 1994, Sec – 185, Schedule – XI, Part – I
56	The amount of contingent liabilities	CA – 1994, Sec – 185, Schedule – XI, Part – I
57	Classification of long term secured and unsecured loans	CA – 1994, Sec – 185, Schedule – XI, Part – I
58	Current posting of long term liabilities	CA – 1994, Sec – 185, Schedule – XI, Part – I
59	Accrued interest on loan	CA – 1994, Sec – 185, Schedule – XI, Part – I
60	Provision for taxation	CA – 1994, Sec – 185, Schedule – XI, Part – I
61	Proposed dividends	CA – 1994, Sec – 185, Schedule – XI, Part – I
62	Provision for contingencies	CA – 1994, Sec – 185, Schedule – XI, Part – I
63	Provision for provident fund schemes	CA – 1994, Sec – 185, Schedule – XI, Part – I
64	Provision for insurance, pension and similar staff benefit schemes	CA – 1994, Sec – 185, Schedule – XI, Part – I
65	Other provisions	CA – 1994, Sec – 185, Schedule – XI, Part – I
66	Classification of share capital	CA – 1994, Sec – 185, Schedule – XI, Part – I
67	Specify the sources from which bonus shares are issued	CA – 1994, Sec – 185, Schedule – XI, Part – I
	D. Profit & Loss Account	
68	The working result of the company during the year	CA – 1994, Sec – 185, Schedule – XI, Part – I
69	The aggregate amount of sales	CA – 1994, Sec – 185, Schedule – XI, Part – I
70	The amount of sales in respect of each class of goods	CA – 1994, Sec – 185, Schedule – XI, Part – I
71	Quantity of sales for each class of goods	CA – 1994, Sec – 185, Schedule – XI, Part – I
72	Commission paid to selling agent	CA – 1994, Sec – 185, Schedule – XI, Part – I
73	Brokerage /discount on sales (other than trade discount)	CA – 1994, Sec – 185, Schedule – XI, Part – I
74	The gross income derived from different heads	CA – 1994, Sec – 185, Schedule – XI, Part – I
75	Classification of payments made to the managing director or managing	CA – 1994, Sec – 185, Schedule – XI, Part – I

	agents during the year	
76	Net profit & loss according to Sec- 119 of Company Act 1994	CA – 1994, Sec – 185, Schedule – XI, Part – I
77	Amount to paid to the auditors as fees or others	CA – 1994, Sec – 185, Schedule – XI, Part – I
78	Amount paid to the advisor	CA – 1994, Sec – 185, Schedule – XI, Part – I
79	Value of imports calculated on CIF basis during the year	CA – 1994, Sec – 185, Schedule – XI, Part – I
80	Expenditure in foreign currency	CA – 1994, Sec – 185, Schedule – XI, Part – I
81	Value of all imported raw materials consumed and their % to the total consumption	CA – 1994, Sec – 185, Schedule – XI, Part – I
82	The amount remitted during the year in foreign currencies on account of dividend	CA – 1994, Sec – 185, Schedule – XI, Part – I
83	Classification of earnings in foreign exchange	CA – 1994, Sec – 185, Schedule – XI, Part – I
84	The amount provided for depreciation, renewals in value of fixed assets	CA – 1994, Sec – 185, Schedule – XI, Part – I
85	The amount of interest on the co's debentures and other loans paid to directors / managers	CA – 1994, Sec – 185, Schedule – XI, Part – I
86	The amount reserved for repayment of share capital	CA – 1994, Sec – 185, Schedule – XI, Part – I
87	Reserved amount for repayment of loans	CA – 1994, Sec – 185, Schedule – XI, Part – I
88	Provisions made for meeting liabilities, contingencies of commitments	CA – 1994, Sec – 185, Schedule – XI, Part – I
89	Expenditures on consumption of stores and spare parts	CA – 1994, Sec – 185, Schedule – XI, Part – I
90	Expenditure on power and fuel	CA – 1994, Sec – 185, Schedule – XI, Part – I
91	Expenditure on rent	CA – 1994, Sec – 185, Schedule – XI, Part – I
92	Expenditure on repair to buildings	CA – 1994, Sec – 185, Schedule – XI, Part – I
93	Repairs to machinery expenses	CA – 1994, Sec – 185, Schedule – XI, Part – I

94	Expenses on salaries, wages and bonus	CA – 1994, Sec – 185, Schedule – XI, Part – I
95	Contribution to provident and other funds	CA – 1994, Sec – 185, Schedule – XI, Part – I
96	Workmen and staff welfare expenses	CA – 1994, Sec – 185, Schedule – XI, Part – I
97	Breakup of income from investment	CA – 1994, Sec – 185, Schedule – XI, Part – I
98	Profits and losses on investments	CA – 1994, Sec – 185, Schedule – XI, Part – I
99	Staff remuneration more than tk 36000 per year	CA – 1994, Sec – 185, Schedule – XI, Part – I
100	The amount of income tax	CA – 1994, Sec – 185, Schedule – XI, Part – I
101	Dividends from subsidiary companies	CA – 1994, Sec – 185, Schedule – XI, Part – I
102	Provisions for losses of subsidiary companies	CA – 1994, Sec – 185, Schedule – XI, Part – I
103	The aggregate amount of dividend paid	CA – 1994, Sec – 185, Schedule – XI, Part – I

Appendix B

Voluntary Disclosure Index

S.N.	A. General Corporate Information	Sources
1.	Objectives, mission and company philosophy	Sobhani et al. 2012; Bhuiyan et al. 2007
2.	Company History and Background	Bhuiyan et al. 2007
3.	Product & Services	Bhuiyan et al. 2007
4.	Organogram	Dutta and Bose, 2007
5.	Stock exchanges on which shares are held	Akhtaruddin and Rouf (2011)
6.	Company's contribution on national economy	GRI 2006; Sobhani et al. 2012
7.	Discussion of major factors underlying performance	GRI (2006)
8.	Information about company listing (date)	Rouf (2011)
9.	Web address or e-mail address	Bhuiyan et al. (2007)
10.	Annual report in PDF and/or HTML format	Dutta and Bose (2007)
	B. Corporate Strategic Information	
11.	Statement of corporate strategy and objectives – general.	Chow and Wong - Boren (1987), Ferguson et al.(2002), Chau and Gray (2002), Haniffa and Cooke (2002), Eng and Mak (2003), Leventis and Wetman (2004), Ghazali and Weetman (2006), Barako et al. (2006), Abdel- Fatah (2008).
12.	Statement of corporate strategy and objectives – financial.	Akhtaruddin and Rouf (2011)
13.	Statement of corporate strategy and objectives – marketing.	Akhtaruddin and Rouf (2011)

14.	Impact of strategy on current performance.	Gray et al. (1995), Hossain et al. (2008).
15.	Statement of corporate strategy and objectives – social	Akhtaruddin and Rouf (2011)
16.	Market share analysis	Haniffa and Cooke (2002), Leventis and Weetman (2004), Barako et al.(2006), Abdel-Fatah (2008)
17.	Managing risk and uncertainties	UNEP-FI (2006); GRI 2006; Sobhani et al. 2012
	C. Corporate Governance/Directors Information	
18.	Name of principal shareholders	Leventis and Weetman (2004), ACCA (2005), Hassan et al. (2006), Abdel-Fatah (2008).
19.	List of directors.	Hossain et al. (1994), Barako et al. (2006), Hassan et al. (2006), GRI (2006), UNEP-FI (2006), Tsamenyi et al. (2007), Abdel Fatah(2008).
20.	Outside affiliations of the directors	Hossain et al. (2008).
21.	Meeting held and Attendance. Resolutions of shareholders' meetings	Dutta and Bose, 2007
22.	Educational qualifications of the directors.	Hossain et al. (1994), Haniffa and Cooke (2002), Barako et al. (2006), Tsamenyi et al. (2007), Abdel Fatah (2008).
23.	Experience of the directors.	Hossain et al. (1994), Haniffa and Cooke (2002), Barako et al. (2006), Tsamenyi et al. (2007), Abdel Fatah (2008).
24.	Executive Officers' information	Dutta and Bose, 2007
25.	Other directorship held by executive directors.	Gray et al. (1995).
26.	Articles of association Full text	Dutta and Bose, 2007
27.	Number of shares	Dutta and Bose, 2007

28.	Classes of shares	Dutta and Bose, 2007
29.	Members of the audit committee	Dutta and Bose, 2007
30.	Remuneration of the members of the management board and directors Individualized	Dutta and Bose, 2007
31.	Disclosure of risks	Dutta and Bose, 2007
	D. Financial Information	
32.	Financial ratios	Dutta and Bose, 2007
33.	Financial reports of the subsidiaries	Dutta and Bose, 2007
34.	Segment reporting	Dutta and Bose, 2007
35.	Current share price Current trading day (internal or external link)	Dutta and Bose, 2007
36.	Share price history Internal or external link	Dutta and Bose, 2007
37.	Current dividend	Dutta and Bose, 2007
38.	Dividend of past year Internal or external link	Dutta and Bose, 2007
39.	Press releases or news	Dutta and Bose, 2007
40.	Reports of analysts	Dutta and Bose, 2007
41.	Analysts' list Analyst's name and contact details	Dutta and Bose, 2007
42.	Graphs on Financial Performance	Leventis and Weetman (2004), Abdel- Fatah (2008), Rouf (2011).
42.	Dividend payout policy	Leventis and Weetman (2004), Abdel- Fatah (2008), Sobhani et al. 2012
43.	Sources of their revenue and amount	GRI (2006); Rouf (2011)
44.	Foreign currency information	Rouf (2011)
45.	Interim report	Bhuiyan et al. (2007); Dutta and Bose (2007); Nurunnabi and Monirul

		(2012)
46.	Comparative financial growth with previous years	Hossain et al. (1994), Chau and Gray (2002), Haniffa and Cooke (2002), Eng and Mak (2003), Leventis and Weetman (2004), Ghazali and Weetman (2006), Tsamenyi et al (2007), Abdel- Fatah (2008).
47.	Infrastructural and institutional development	GRI (2006), Sobhani et al.(2012).
	E. Corporate Social Responsibility Information	
48.	Special CSR page	Dutta and Bose, 2007
49.	Stand-alone CSR report	Dutta and Bose, 2007
50.	Donations to charitable bodies information	Dutta and Bose, 2007
51.	Product quality and safety	Dutta and Bose, 2007
52.	Sponsoring public health, sponsoring of recreational projects	Meek et al. (1995), Gray et al. (1995), Ferguson et al. (2002), SAI (2002), Chau and Gray (2002), Haniffa and Cooke (2002), Leventis and Weetman (2004), Ghazali and Weetman (2006), Abdel-Fatah(2008), Azim et al.(2011), Sobhani et al.(2012).
53.	Patronizing religious functions and activities	Sobhani et al. (2012)
54.	Commitment for HR development	Sobhani et al. 2012
55.	Information about employee appreciation	Sobhani et al. 2012
56.	Amount spent on CSR activities	Sobhani et al. 2012
57.	Commitment to societal development	Sobhani et al. 2012
58.	Poverty alleviation programmes	Sobhani et al. 2012
59.	Rural development programmes	Sobhani et al. 2012
60.	Social awareness programmes	Sobhani et al. 2012

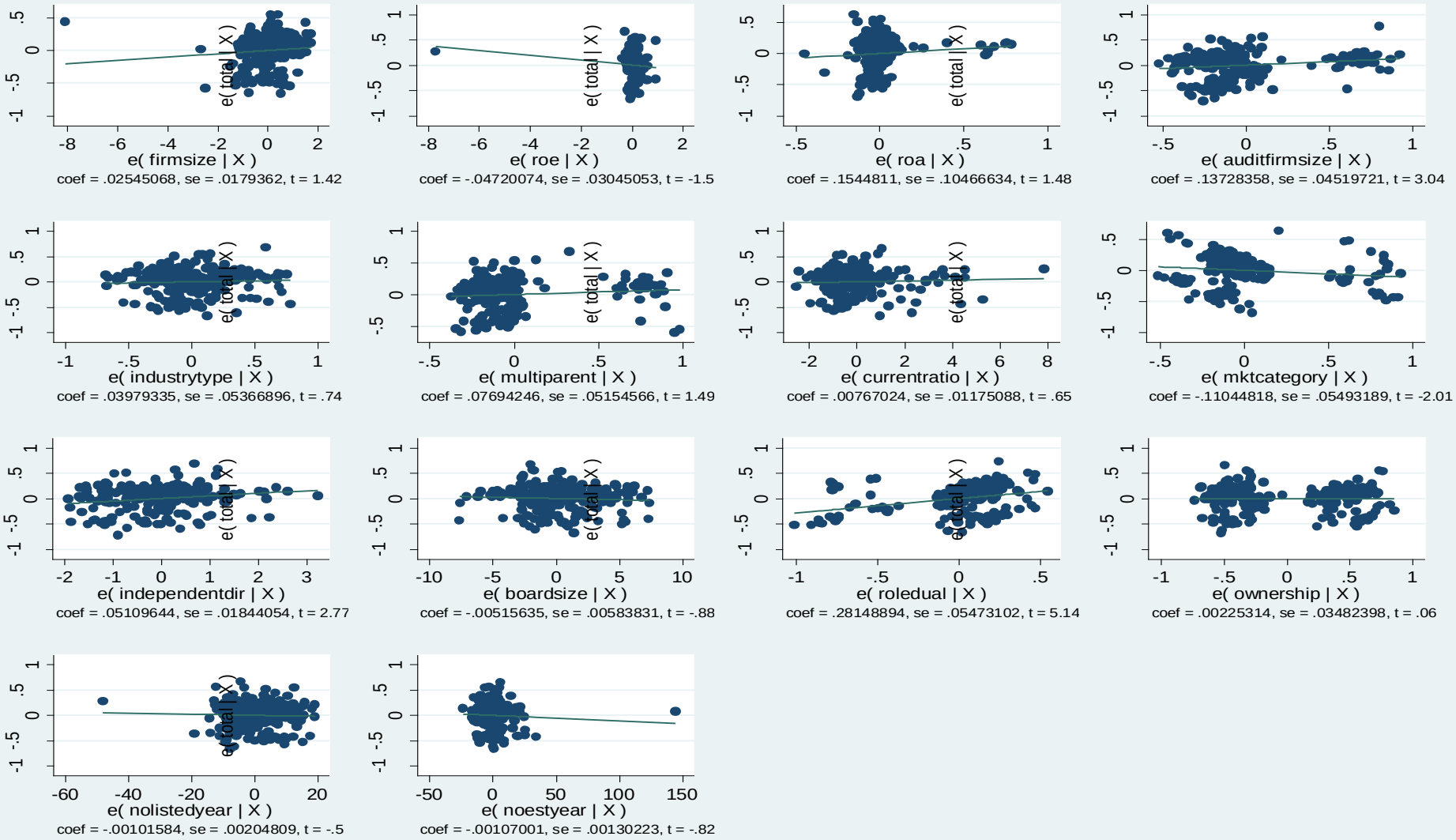
61.	Financial assistance for poor women and children	Sobhani et al. 2012
	F. Corporate Environmental Information	
63.	Information on energy savings	Dutta and Bose, 2007
64.	Environmental policies or company concern for the environment.	Dutta and Bose, 2007
65.	Recycling plant of waste products	Dutta and Bose, 2008
66.	Financing for pollution control equipment or facilities	Dutta and Bose, 2008
67.	Land reclamation and forestation programmes.	Dutta and Bose, 2008; Sobhani et al. 2012
68.	Pollution control of industrial process	Dutta and Bose, 2008
69.	Research on new methods of production to reduce environmental pollution	Dutta and Bose, 2008
70.	Support for public or private action designed to protect the environment	Dutta and Bose, 2008
71.	Conservation of energy in the conduct of business Operations	Dutta and Bose, 2008
72.	Discussion of the company's efforts to reduce energy consumption	Dutta and Bose, 2008
73.	Issues concerning climate change	Sobhani et al. 2012
74.	Amount spent for environmental activities	Dutta and Bose, 2008
75.	Conservation of natural resources	Dutta and Bose, 2008
	G. Sustainability Information	
76.	Creating job opportunities for unemployed youth	Sobhani et al. 2012

77.	Anti-corruption measures	Sobhani et al. 2012
78.	HRD plans and policies	Sobhani et al. 2012
79.	Employee compensation, welfare or donation	Sobhani et al. 2012
80.	Male female ratio in employment	Sobhani et al. 2012
81.	Training employees through in-house Programmes	Dutta and Bose, 2007; Sobhani et al. 2012
82.	Healthy and safe workplace for staff	Sobhani et al. 2012
83.	Healthcare facilities for the employees	Sobhani et al. 2012
84.	Other loan facilities to the employees	Sobhani et al. 2012
85.	Provisions for maternity and paternity leaves	Sobhani et al. 2012
86.	Disclosure on child labour or free from child labour	Sobhani et al. 2012
87.	Appreciating customers for their support	Sobhani et al. 2012
88.	Customer service and facilities	Sobhani et al. 2012
89.	Information related to new products	Sobhani et al. 2012; Sobhani et al. 2012
90.	Information on the ground of the products & service	Dutta and Bose, 2007; Sobhani et al. 2012
91.	'Research & development' for products& services	Sobhani et al. 2012
92.	Complaints received and resolution Information	GRI 2006; Sobhani et al. 2012
93.	Arrangement for receiving complaints	GRI 2006; Sobhani et al. 2012
94.	Corporate policy and strategy for sustainable development	ACCA 2005; Sobhani et al. 2012
95.	Future cash flow forecast	SAI (2002), Gul and Leung (2004), Lim et al. (2007), Abdel-Fatah (2008), Rouf (2011).
96.	Market share forecast	Gul and Leung (2004), Lim et al. (2007), Abdel-Fatah (2008), Rouf

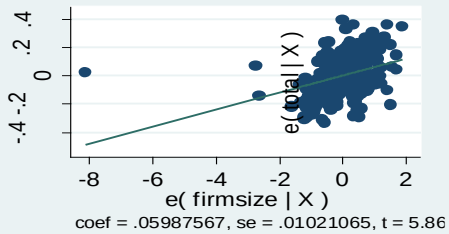
		(2011).
97.	Competitor analysis- quantitative and qualitative	Hossain et al. (1994), Haniffa and Cooke (2002), Barako et al. (2006), GRI (2006), Lim et al. (2007), Abdel-Fatah (2008).
98.	Factors that may affect future performance	Barako et al. (2006),
99.	Planned advertising and publicity expenditure	Rouf (2011).
100.	Amount spent for sustainability activities	GRI (2006), Sobhani et al. (2012).
	H. Investor Related Information	
101.	Name of investor relations officer	Dutta and Bose, 2007
102.	E-mail to investor relations	Dutta and Bose, 2007
103.	Phone number to investor relations	Dutta and Bose, 2007
104.	Postal address to investor relations	Dutta and Bose, 2007
105.	Frequently asked questions	Bhuyan et al. 2007; Dutta and Bose, 2007
106.	Financial Calendar	Dutta and Bose, 2007
107.	One click Current news	Bhuyan et al. 2007; Dutta and Bose, 2007
108.	One click Investor relation	Bhuyan et al. 2007; Dutta and Bose, 2007
109.	Future plan	Bhuyan et al. 2007
110.	Proxy form	Bhuyan et al. 2007
111.	Financial statement signed	Bhuyan et al. 2007
112.	Webmail	Bhuyan et al. 2007
113.	Online investor information order service	Dutta and Bose, 2007
	I. Presentation Format	
114.	Financial data in Processable format: Spread sheet	Bhuyan et al. 2007

	compatible (xls), or ASCII(txt)	
115.	Format of annual report (current) PDF or http	Bhuyan et al. 2007; Dutta and Bose, 2007
116.	Audio/ video files	Bhuyan et al. 2007; Dutta and Bose, 2007
117.	English version of annual report	Bhuyan et al. 2007; Dutta and Bose, 2007
118.	Web-site (English version)	Bhuyan et al. 2007; Dutta and Bose, 2007
119.	Search engine	Bhuyan et al. 2007; Dutta and Bose, 2007
120.	Site map	Bhuyan et al. 2007
121.	Links to related sites	Bhuyan et al. 2007
122.	Feedback	Bhuyan et al. 2007
123.	The use of graphics	Dutta and Bose, 2007
124.	Hyperlinks to accounting data	Dutta and Bose, 2007
125.	Trend data and analysis	Dutta and Bose, 2007
126.	Date last modified	Dutta and Bose, 2007
127.	Mailing list/ e-mail news alert	Dutta and Bose, 2007
128.	Availability of help section	Dutta and Bose, 2007

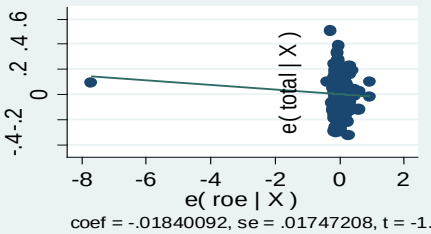
Appendix C: Mandatory Disclosure Scatter Plots



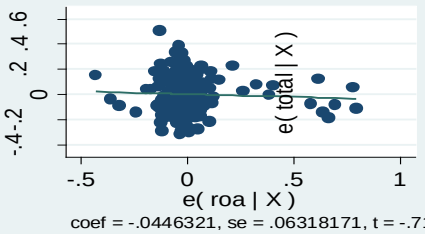
Appendix D: Voluntary Disclosure Scatter Plots



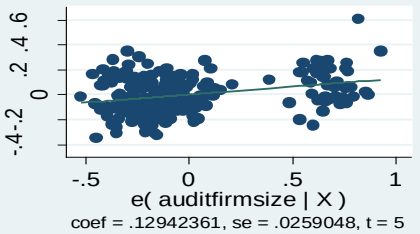
coef = .05987567, se = .01021065, t = 5.86



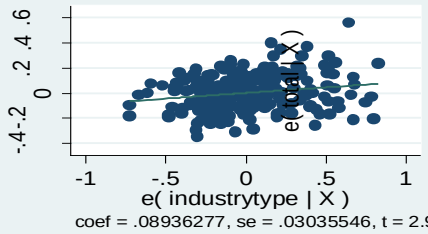
coef = -.01840092, se = .01747208, t = -1.0



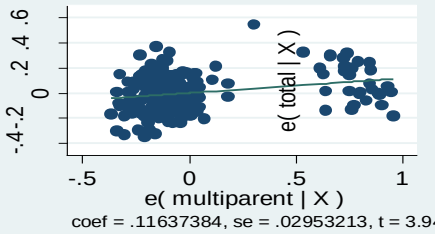
coef = -.0446321, se = .06318171, t = -.71



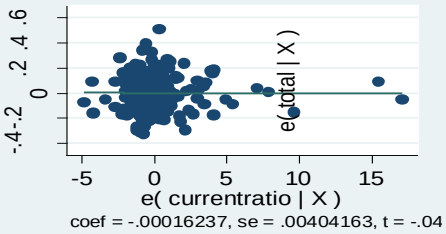
coef = .12942361, se = .0259048, t = 5



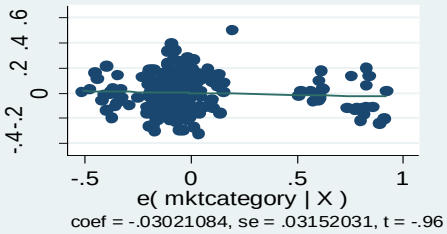
coef = .08936277, se = .03035546, t = 2.94



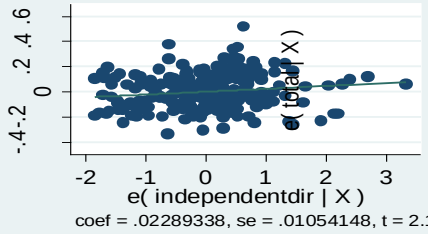
coef = .11637384, se = .02953213, t = 3.94



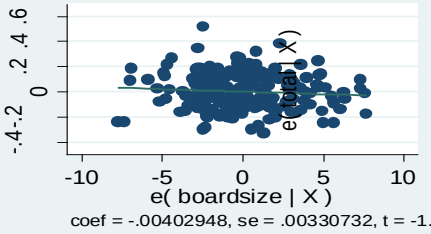
coef = -.00016237, se = .00404163, t = -.04



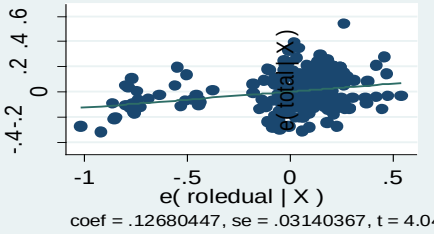
coef = -.03021084, se = .03152031, t = -.96



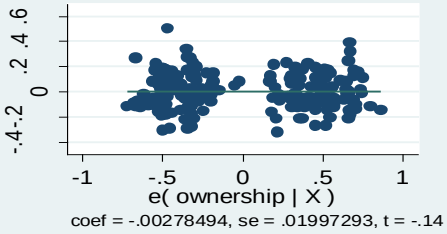
coef = .02289338, se = .01054148, t = 2.17



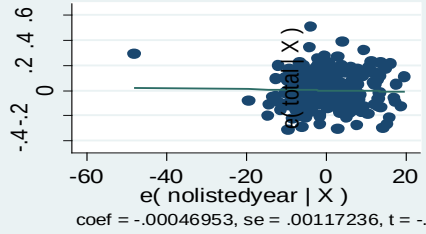
coef = -.00402948, se = .00330732, t = -1.2



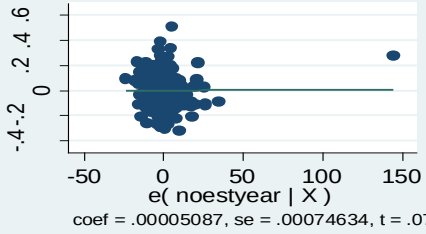
coef = .12680447, se = .03140367, t = 4.04



coef = -.00278494, se = .01997293, t = -.14



coef = -.00046953, se = .00117236, t = -.4



coef = .00005087, se = .00074634, t = .07