

CORPORATE ENVIRONMENTAL REPORTING AND PROFITABILITY: A STUDY ON LISTED COMPANIES IN BANGLADESH

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Abstract

Corporate environmental reporting has become an emergent issue in today's world. It communicates the environmental effects of organizations economic actions to the stakeholder through the corporate annual report or a separate stand-alone publicly available environmental report. This study highlights the current practices of environmental information disclosure in the annual reports of listed Companies in Bangladesh. For the analysis ,85 companies listed in the Dhaka Stock Exchange Ltd. (DSE) have been selected from seven sectors namely Banking ,Non Banking, Chemical and Pharmaceuticals, Cement, Ceramics, Fuel & Power and Textile .This study also aims to find out whether there are any relationship between the level of corporate environmental reporting and the profitability of the firms, by calculating Return on Asset(ROA) and Earnings Per Share(EPS) .The study concludes that the modes of corporate environmental reporting are mostly qualitative in nature and diversified in locations and it also erects that the Return on Asset (ROA) and Earnings per Share (EPS), are significantly related with the level of corporate environmental reporting.

Keywords: Environment, Corporate Environmental Reporting, Return on Asset, Earnings Per Share.

1. Introduction

Business survives by using soil, air, water, manpower and all the elements of environment. The European Commission defines environment as "the natural physical surroundings and includes air, water, land flora, fauna and non-renewable resources as fossil fuels and minerals" (Commission Recommendation 2001/453/EC). Business environment is the combination of internal and external factors that influence a company's operating situation. It can include factors such as: clients and suppliers; its competition and owners; improvements in technology; laws and government activities; and market, social and economic trends. (www. Business Dictionary. com, 2015).

Legitimacy theory asserts that organizations continually seek to ensure that they are perceived as operating within the bounds and norms of their respective societies. This theory relies on the notion that there is a social contract between the organization and the society in which it operates. Traditionally profit maximization was perceived to be the optimal measure of corporate performance (Abbott & Monsen, 1979; Heard & Bolee, 1981; Patten, 1991, 1992; Ramanathan, 1976).

However, public expectation has changed significantly during the decades. Heard & Bolee, 1981 noted that companies in United States made increasing number of legislation during the 1960s and 1970s regarding the environment and employees health and safety. With heightened social expectations it is anticipated that successful

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business corporations will react and attend to the human, environment and other social consequences of their activities.

As environmental performance is increasingly seen to have an influence over financial performance and financial risk assessment, disclosure of environmental issues in the Annual Report is a fundamental requirement for a company in order to satisfy the information needs of its stakeholders. In the recent years environmental effect of economic development has become a matter of great concern. A number of companies all over the world have started the practice of making environmental disclosures in annual reports. More and more voluntary and regulatory guidelines are emerging to encourage companies to disclose environmental issues in the Annual Report.

1.1 Concept of corporate environmental reporting

Environmental reporting requires the incorporation of environmental information in the annual report. It not only involves reporting of physical environment but also social environment. The Association of Chartered Certified Accountants, defined environmental reporting as: Environmental reporting is the term commonly used to describe the disclosure by an entity of environmentally related data, verified (audited) or not, regarding environmental risks, environmental impacts, policies, strategies, targets, costs, liabilities, or environmental performance, to those who have an interest in such information, as an aid to enabling/enriching their relationship with the reporting entity via either:

1. the annual report and accounts package;
2. a stand-alone corporate environmental performance report;
3. a site-centered environmental statement; and
4. some other medium (e.g. staff newsletter, video, CD-ROM, website).

According to Gray & Bebbington, (2002), corporate environmental reporting is an activity which includes, outlines of the organization's attitude to the environment, glossy pictures of bits of the environment, reference to EMS and environmental audit, tables showing selected data on the levels of emissions and wastes produced by the organization and suggestions about levels of environmental investment.

1.2 Accounting Standards Related to Environmental Issues

Financial Accounting Standard Board (1994, FAS – 1) identifies the main objectives of financial reporting as: "... to provide information that is useful to present and potential investors and creditors and other users in making rational investment, credit and similar decisions. The information should be comprehensible to those who have a reasonable understanding of business and economic activities and are willing to study the information with reasonable diligence". The reasonable and rational decision should be made by considering the environmental impacts of business.

Review on "international accounting standards for environmental issues", deals with six main issues identifying areas where individual standards would benefit by

the inclusion of additional requirements on implementation guidance: i) disclosure of environmental costs and liabilities; ii) criteria for capitalizing environmental expenditures; iii) recognizing provisions for environmental costs; iv) disclosure of environmental risk and uncertainties; v) impairments of assets, including damage to own property; and vi) fines and penalties, pollution permits and emission rights.

According to the indicator areas identified as key indicator area by the World Business Council for Sustainable Development and by the Global Reporting Initiative, the most relevant types of environmental information, area) Environmental policy b) Environmental impacts c) Environmental management systems d) Environmental targets e) Ecological products f) Reference and/or cross reference to the Environmental Report; g) Environmental financial information, such as operative expenses and environmental investments; extraordinary environmental costs; environmental liabilities; accounting policies of environmental items; environmental commitments and contingencies; environmental insurance; tangible and intangible environmental assets.

2. Review of Related Literature

Salomone and Gallucci (2001) showed the reporting practices of environmental issues in the financial reports of the Chemical, Oil & Gas Industries in Europe, USA and Canada. They found high percentage of environmental disclosures addressed by the companies surveyed. Furthermore, most companies produce a separate section dedicated to the environmental issues within their Annual Reports. Quantified financial information on environment is still less common in Northern Europe, while the United States and Canada are the nations with the greatest number of quantitative disclosures of financial environmental information. The trends of environmental information disclosure in the annual reports are increasing.

Corporate Environmental Reporting is crucial for sustainable Development (Bebbington and Gray, 2000).

In 1991 a transnational research of the United Nation (UNCTAD-ISAR, 1991) highlighted that 85% of the considered Annual Financial Reports already disclosed some kind of environmental data. One of the first comprehensive studies in this area was the CICA (Canadian Institute of Certified Accountants) paper "Environmental Costs and Liabilities: Accounting and Financial Reporting Issues" published in 1993. The document "Environmental Issues in Financial Reporting" prepared by ICAEW, the Institute of Chartered Accountants of England and Wales, in October 1996 also added values to this research area. Other European relevant sources include, a paper on environmental issues in financial reporting issued in 1995 by the European Commission Accounting Advisory Forum (AAF), a consultative Commission set up by the European Commission in 1990, comprising representatives of the accounting standard setting bodies in the member States and of interested profession, the document "Environmental Issues in Financial Reporting" prepared by ICAEW, the Institute of Chartered Accountants of England and Wales, in October 1996, the study "Information Financière et Environnement" edited by the French standard setting body in 1996.

In 1998 the Italian accounting standard-setting body established an environmental task force and undertook a study on the environmental disclosure in annual and financial reports, published in October, 1998. On 20th January 1998, an Interpretative Communication on a number of issues dealt within the main EU Accounting Directives was adopted by the European Commission. The EU document includes some clarifications on the inclusion of environmental issues in the financial statements. This document emphasized particularly on recognition of provisions for environmental liabilities and risks, definition and treatment of environmental expenditures, environmental information that ought to be included in the notes on the accounts, environmental information that could be usefully be given in the annual report.

Deegan and Gordon (1996) examined the environmental disclosure practices of Australian companies revealing low voluntary environmental disclosure in Australia. Cunningham and Gadenne (2003) investigated whether an enhancement in environmental regulations acts as a momentum for changes in annual report disclosure behavior and concluded that environmental regulation acts as an impetus for companies to include information on certain environmental issues in the annual report. Harte and Owen (1991) analyzed the annual reports of 30 British companies to investigate the environmental reporting in their annual reports and suggested for external standards on environmental reporting.

Gray et al. (2001) examined the relation between corporate characteristics and environmental disclosures by taking a sample of 100 UK companies drawn from the Center for Social and Environmental Accounting Research (CSEAR). The authors observed that the volume of disclosure is related to the turnover, capital employed, number of employees and profit, as larger and more profitable firms have disclosed more environmental information. Fortes (2002) examined the significance of environmental reporting in Sweden and observed that environmental reporting showed notable benefits to businesses.

Gamble et al. (1995) investigated the quality of environmental disclosures in 10K and annual reports for 234 companies and concluded that companies belonging to petroleum refining, hazardous waste management, steel works and blast furnaces industries provided the highest quality of disclosures. ACCA published a report entitled "The State of Corporate Environmental Reporting in Singapore in 2002" that summarized the findings of a study of the latest annual reports, and any stand-alone reports, of 160 listed companies and 13 Government Linked Companies (GLCs) and Statutory Boards (SBs). Some 14% of listed companies and 23% of GLCs and SBs had some form of CER. Rajapakse (2003) carried out a study on environmental reporting practices in Sri Lanka and found no sign of any significant improvement in social and environmental reporting. Lodhia (2002), in his study that explained environmental reporting in Fiji, reports that the current practices in Fiji were far from satisfactory; with limited disclosures in corporate annual reports and in these reports the focus was good news disclosures.

Savage (1994) examined corporate social disclosure practices in South Africa. He pointed out that environmental accounting needs much more attention there.

Niskala (1994) studied environmental accounting issues in Finland and concludes that issues relating to environmental accounting are just beginning to be widely discussed in Finland.

Surmen and Kaya Thomson and Zakarai (2004) examined the extent, nature and form of corporate social and environmental disclosure made by Malaysian companies and observed that the corporate environmental reporting of these companies was poor in quality and low in quantity. Bhate (2002) investigated the extent to which consumers of India are aware of environmental issues and it was found that Indians are most involved with environmental issues. Paul and Pal (2001) examined corporate environmental reporting in the annual reports of 23 companies for the sample period of 13 years (i.e., from 1986-87 to 1998-99) and concluded that reporting is gaining momentum with the passage of time even in the absence of any compulsion and standards or guidelines. Nuhoglu (2003) also examined environmental reporting practices in Turkish companies and reported that Turkish companies' reports were lower standard and prepared much less seriously vis-à-vis multinational companies' reports. Romlah et al. (2002) studied the practices in Malaysian companies and showed that 74 out of 362 companies (20.44 percent) is environmentally sensitive industries and provide environmental information in their annual reports. The study by Thompson (2002) reveals that 7 of the top ten largest Malaysian companies provide information on environmental issues. Ahmed and Sulaiman (2004) examined the extent and type of voluntary environmental disclosures in annual reports for the year 2000 by Malaysian companies belonging to construction and industrial products industries and concluded that the extent of environmental disclosure was very low and was scattered throughout the report without any concentration.

Imam (1999) conducted a study on environmental reporting in Bangladesh and reported that environmental disclosures remain at a minimal level. Shil and Iqbal (2005) conducted a study based on the annual reports of 121 companies in Bangladesh and found that only 13 companies (11percent) out of 121 disclosed the environment related information in a qualitative way. Rahman and Muttakin (2005) selected 196 companies in Bangladesh for their study out of which 125 are manufacturing companies and the rest 71 are service companies that gives same result.

The main reason for incorporation of environmental information within the annual reports is to increase stakeholders' awareness of the company's activities, performance, and interactions with the environment. It was hoped that stakeholders might use the information to assist their decision-making process (Jones 2000).

A significant number of studies also took place to relate the Environmental performances with the financial performances. Stanwick and Stanwick (1998) discussed that there is a positive relationship between low emission level and high profitability for firms with excellent reputation for social responsibility. Russo and Fouts (1997) found that there is a positive relationship between environmental performance and return on assets. Also Hart and Ahuja (1994) determined that emission reduction and pollution prevention initiatives have a positive impact on

return on asset, return on equity, and return on sale. Murphy, (2002) found that Financial accounting measures, such as return on equity (ROE) and return on assets (ROA), have been shown to improve with improved environmental performance. Companies reporting on environmental performance note that significantly improved awareness of environmental costs and opportunities increase efficiency, (UNEP and Sustainability2001).

However a considerable number of studies have been conducted to show the association between environmental and sustainability reporting with the investor's perception and effects on the company's share value. Feldman, Soyka, Ameer (1996) indicated that firms that improve their environmental management system and their future environmental performance will be able to increase their shareholders wealth perhaps five percent. As mentioned by Dowell, Hart, Yeung (1998), there were three studies during 90s that link proactive environmental management to superior stock performance. Hamilton (1995), Klassen and McLaughlin (1996), and White (1995) demonstrated that 1) there is a positive relationship between news of toxic emission and negative abnormal return, 2) Firms with strong environmental management practices have greater stock price returns compare to firms with weak practices after major environmental disasters, 3) There is positive relationship between environmental performance awards and positive abnormal returns. Konar and Cohen (2001) cited that there is an association between reduction in toxic emission release and greater firm value.

As indicated by Gottsman and Kessler (1998) portfolios of firms with good environmental performance return more than portfolios of poor environmental performers. Murphy (2002) found that there is a positive association between innovative pollution prevention technology and stock returns, also mentioned that chemical leaks, and oil spills have a negative impact on stock price. Amir et.al (2012) studied with 45 Malaysian public listed companies in three years (2008-10) and indicated that companies with higher level of sustainability disclosure have higher share price and have higher net profit.

Despite the increasing attention paid to the environmental issues, very few works have been done in Bangladesh regarding this Corporate Environmental Reporting. Many authors e.g. Imam (1999), Shil and Iqbal (2005), Rahman and Muttakin (2005) conducted vast survey regarding this issue but could not come out with any quantitative figures or would not able to set any relationship between the level of disclosures and the company's performance. This point is vital and will act as a motivating factor behind the Corporate Environmental Reporting. In this study the concept of Corporate Environmental Reporting has been clarified and a relationship has been established between the level of Corporate Environmental Reporting and the company's performance.

2.1 Objectives of the study

The study is designed to achieve the following objectives:

- (i) to examine the overall status of environmental disclosures in the Annual Reports;

- (ii) to identify location and typology of current practices on corporate environmental reporting of selected companies;
- (iii) to examine the association between the level of environmental information disclosure in the annual report and the financial accounting measures of the firm's profitability, such as Return on Asset (ROA) and Earning Per Share (EPS); and
- (iv) to make some recommendation for the policy implication.

2.2 Methodology of the study

For the purpose of the study secondary data have been used. The annual reports of 85 Companies listed in the Dhaka Stock Exchange (DSE) Ltd. have been selected. Seven sectors have been taken namely Banking, Non Banking, Chemical and Pharmaceuticals, Cement, Ceramics, Fuel & Power and Textile for the study. The companies have been selected randomly and according to the availability of their annual reports. Three years data from 2011-12, 2012-13, 2013-14, have been collected and analyzed. Sources of secondary data such as newspaper, journal, internet, published magazines, etc are also used. The research is conducted in two stages.

At first stage, the research shows the status of environmental disclosures in the annual report and their type and location. Content analysis method has been used to analyze the data. At the second stage, the research has calculated the environmental reporting index for each of the selected companies. After studying various literature and articles on corporate environmental reporting, 10 indicators of environmental disclosures have been identified. Those indicators are Information about Environmental policy, Information about Environmental impacts, Information about Environmental management systems, Information about Environmental targets, Information about Ecological products, Information about environmental commitments and contingencies, Information about environmental costs; environmental liabilities; environmental assets; environmental investments, Indication of any environmental related standards, Information about environmental insurance and finally any sorts of Quantitative information regarding carbon emission, biodiversity, ETP project, water degradation etc. In the first step of coding, if a company has disclosed about the indicators the research put 1 and if a company has not disclosed about specific indicator, the research put zero.

For the second part of index calculation, the research considered quality of disclosure. If a company does not disclose any Information regarding environment, the research puts 1. If companies disclose qualitative information the research puts 2. If a firm disclose about quantitative environmental disclosure, then the research puts 3. If a company disclosed both quantitative and qualitative aspect of sustainability reporting for a specific indicator, the research puts 4. For the indication of Environmental financial information such as environmental cost and liabilities, assets, contingencies etc. the research puts 5.

Table 1: Environmental Index calculation of ACI LTD

Environmental indicators	Disclose	Score	Level of disclosure	Score
1. Information about Environmental policy	Yes	1	Qualitative	2
2. Information about Environmental impacts	No	0		
3. Information about Environmental management systems	Yes	1	Qualitative	2
4. Information about Environmental targets	No	0		
5. Information about Ecological products	Yes	1	Qualitative	2
6. Information about environmental commitments and contingencies;	No	0		
7. Information about environmental costs; environmental liabilities, environmental Assets, environmental investments.	No	0		
8. Indication of any environmental related standards	Yes	1	Qualitative	2
9. Information about environmental insurance	No	0		
10. Quantitative information regarding carbon emission, biodiversity, ETP project, water degradation etc.	No	0		
Sum		4		8
Environmental Reporting Index=8/4=2				

Source: Author's computation, based on Annual Report

In the next step, a Bivariate correlation has been calculated to see the relationship between the Environmental Reporting Index and the variables ROA and EPS. Then the research has calculated simple regression analysis of variables to test hypothesis.

Here are two regression analyses. First, regression analysis has been calculated through Environmental Reporting Index and Return on Assets (ROA) of our selected companies, assuming Environmental Reporting Index as independent variable and Return on Assets (ROA) as dependent variable and the following hypothesis has been developed:

H₀: There is no significant relation between Environmental Reporting Index and Return on Assets (ROA) of our selected companies

H₁: There is significant relation between Environmental Reporting Index and Return on Assets (ROA) of our selected companies.

Secondly simple regression analysis has been calculated between Environmental Reporting Index and Earnings per Share (EPS), assuming Earning per Share as dependent variable and the following hypothesis has been developed

H0: There is no significant relation between Environmental Reporting Index and Earnings per Share of our selected companies.

H2: There is significant relation between Environmental Reporting Index and Earnings per Share of our selected companies

To compute Return on assets (ROA) and Earnings per share (EPS) the following simple formulas have been considered.

$$\text{ROA} = (\text{Net profit after tax} / \text{Average operating assets}) \times 100.$$

$$\text{EPS} = \text{Net profit after tax} / \text{Number of ordinary shares outstanding}.$$

Then the simple average of these ratios have been calculated for 3 years (From 2011-12, 2012-13, 2013-14).SPSS 11.5 has been used to analyze the data.

3. Findings and Analyses

The first thing of investigation is to see whether the companies disclose any kind of environmental information in their annual report or not? Following are the lists of the companies which disclosed the environmental information in their Annual Report. The following table also shows some of the companies' environmental information and their location in the annual report:

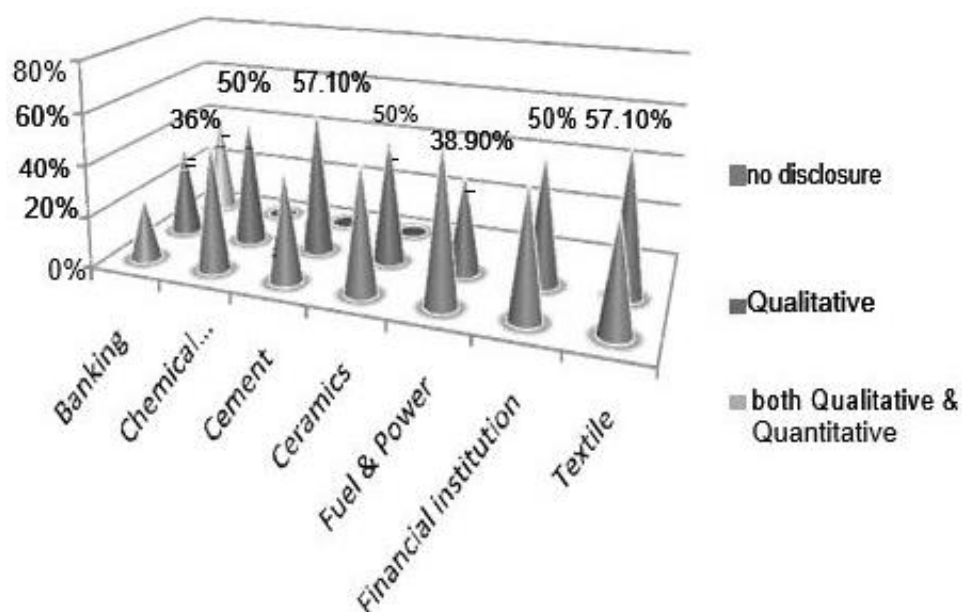
Table 2: Comparative figures showing the level of Corporate Environmental Reporting in Bangladesh.

	No Disclosure	Qualitative Disclosure	Both Qualitative & Quantitative Disclosure
Banking	24%	36%	40%
Chemical & Pharmaceuticals	50%	50%	
Cement	42.90%	57.10%	
Ceramics	50%	50%	
Fuel & Power	61.10%	38.90%	
Financial	50%	50%	
Institution	42.90%	57.10%	
Textile	24%	36%	

Source: Author's calculation based on Annual Report

Table 2 demonstrates the reporting practices of different sectors in Bangladesh in percentage form. It shows that Fuel and Power sector does the maximum disclosures among other sectors and Both Textile and Banking sector do the lowest.

Figure 1: Comparative scenario of level of Corporate Environmental Reporting in Bangladesh



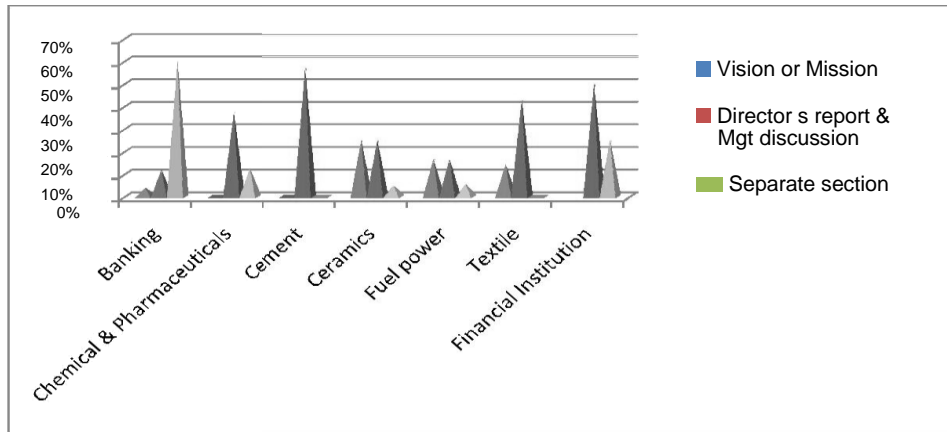
Source: Author's own calculation based on Annual Report

Table 3: Comparative figures showing the location of Corporate Environmental Reporting in Bangladesh.

Sectors	Vision or Mission	Directors report & Management Discussion	Separate section
Banking	4%	12%	60%
Chemical & Pharmaceutical		37.50%	12.50%
Cement		57.10%	
Ceramics	25%	25%	
Fuel & Power	16.70%	16.70%	5.60%
Financial institution		50%	25%
Textile	14.30%	42.90%	

Source: Author's own calculation based on Annual Report

Table 3 demonstrates the location of environmental reporting among the different sectors in Bangladesh in percentage form. It shows that in banking sectors 60 % of the companies disclose their environmental information in separate section of annual report.

Figure 2: Comparative scenario showing the location of Corporate Environmental Reporting in Bangladesh

Source: Author's calculation based on Annual Report

At the next stage of the research, a Bivariate Correlation has been calculated to show the relationship between the variables Environmental Reporting Index and ROA as well as with EPS. Here is a table of correlation analysis among variables. The Spearman test has been conducted.

Table 4 : Result of correlation analysis between Environmental Reporting Index and Return on Assets.

		Environmental Reporting index	Return on Asset
Environmental Reporting	Pearson Correlation	1	.329(*)
Index	Sig. (2-tailed)	.	.011
	N	59	59
Return on Asset	Pearson Correlation	.329(*)	1
	Sig. (2-tailed)	.011	.
	N	59	59

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

Source: Author's own calculation based on Annual Report

Table 4, shows that there is a significant relationship between Environmental Reporting Index and Return on Assets of our selected companies;

Table 5: Result of correlation analysis between Environmental Reporting Index and Earnings per share (EPS).

		Environmental Reporting index	Earnings per Share
Environmental Reporting	Pearson Correlation	1	.273(*)
Index	Sig. (2-tailed)	.	.036
	N	59	59
Return on Asset	Pearson Correlation	.273(*)	1
	Sig. (2-tailed)	.036	.
	N	59	59

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

Source: Authors calculation based on Annual Report

Table 5 shows that there is a significant relationship between Environmental Reporting Index and Earnings per Share.

Table 6: Result of Regression Analysis between Environmental Reporting Index and Return on Assets.

Mod E1	R	R	Adjusted R	Unstandardized Coefficients		Standardized Coefficients	T	sig
		square	square	B	Std. Error	Beta		
1(Constant)	329(a)	.108	.093	.131	1.206		.109	.914
environmental reporting index				1.690	.642	.329	2.631	.011

Table 6, demonstrates there is a positive significant relationship with coefficient beta of .131 and significant level of 0.011 ($p < 0.005$), between Environmental Reporting Index and Return on Assets of our selected companies. Meanwhile, the coefficient of determination (R Square) is 0.108, and adjusted R square is 0.093. This means 9.3% of total variation in Return on Assets can be explained from Environmental Reporting Index.

Table 7: Result of Regression Analysis Between Environ Index and Earnings per Share.

Mod	R	R	Adjusted R	Unstandardized Coefficients		Standardized Coefficients		
		Square	Square	B	Std. Error	Beta	t	Sig.
1 (Constant)	.262	.069	.052	.395	2.707		.146	.884
environmental reporting index				2.956	1.441	.262	2.051	.045

Table 7 demonstrates there is a positive significant relationship with coefficient beta of .395 and significant level of 0.045 ($p < 0.005$), between environmental reporting index and Earnings per Share among our selected companies. Meanwhile, the coefficient of determination (R Square) is 0.069, and adjusted R square is 0.052. This means 5.2% of the total variation in Earnings per Share can be explained from environmental reporting index.

4. Conclusion

Environmental information disclosed in the annual report make stakeholders more trustworthy that the companies are concerned for the environment. The study explains a moderate percentage of environmental disclosures addressed by the companies. The research found most of the companies are providing only qualitative disclosures regarding the environmental issues in annual reports. Among the selected companies, only banking sector is showing some sort of quantitative data regarding the green investment and project in their hands, which are environment friendly. Quantification of their environment related information in other sector is rare. No information is available on the annual reports regarding the environmental assets, liabilities, cost, expenses and investments. The pattern of showing environmental information is either on the vision and mission part or in director's report and management discussion part. Very few of the companies are reporting in a separate section dedicated for the environment. Companies are disclosing environmental information in their annual report as a part of voluntary reporting. However more and more reviews are coming and there should be a framework for the environmental disclosures. The research also found a significant association between the level of environmental reporting and the company's return on asset and the earning per share, which are the vital indicators for measuring the company's profitability. As public expectation is more on the listed companies, these sorts of companies should show responsible behavior towards the environment. We need to reduce the environmental impact of society at a level that the Earth's abilities to recover can deal with it and we need to Save the environment to save the Globe.

5. Recommendations for the Policymaking

Corporate environmental reporting has drawn a growing attention from the public in the recent time. Disclosure of environmental information in the annual report intends to reveal the impacts of various corporate activities on the environment and it increases the performance and efficiency of the organization. More international cooperation's are coming forward regarding the matters and in many countries it has already become mandatory. Although still there is a debate whether the reporting is only voluntary or not, the study believe that this is the high time to through away all the debates.

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