Environmental Reporting Practices in Annual Report of Selected Listed Companies in Bangladesh

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Abstract

This study is an empirical investigation of the extent of environmental disclosure by selected listed companies in Bangladesh. This study also endeavors to report the association between company specific attributes and environmental disclosure of the sample companies. The study revealed that on an average sample companies disclosed 8.53 (15.23%) of the expected information in their annual reports and environmental disclosure volume and total asset of the companies are significantly correlated. The study opined that companies of Bangladesh are disclosing very inadequate environmental information in their annual reports. This study is expected to play an important role in creating consciousness among the users and preparers in disclosing more environmental information in annual reports.

Key Words: Environment, Disclosure, Content Analysis, Annual Report and Bangladesh.

1. Introduction

Now-a-days environment has become a very crucial issue not only for personal life but also for business life and hence, environmental movement and environmental reporting practices by different organizations throughout the world have gathered great momentum in recent years. Advancement and improvement of quality of environment is the major issue for their activities. Environmental Accounting (EA) more specifically, Environmental Management Accounting (EMA) has emerged during the last two decades in response to this issue. EA is a broad term that is used in the context of different meanings and applications. EMA has a focus on providing better information on the actual environmental costs already incurred by the entity to the management of an organization (Shil & Iqbal, 2005). Disclosure of different environmental related information in corporate annual reports begins in the 1970s and it expanded in the 1990s (Kukobo et al, 2002). Before 1990s, there was no specific evidence that any listed company in Dhaka Stock Exchange (DSE) has disclosed environmental related information in their annual reports (Shil & Iqbal, 2005). This paper investigated the extent of corporate environmental information disclosure in the annual report of selected listed companies in Bangladesh. To prevent result from being contaminated by inter-industry factors, the study selected a number of companies from different sectors. Since environmental pollution in the industries is very alarming, hence it requires justifying how much they are producing environmental information in their annual reports in creating awareness among the stakeholders. The more environmental information disclosure in annual reports of the companies supposed to create more awareness regarding environment. In comparison with previous studies, the present study found that more and more companies came forward to disclose more environmental information in annual reports. But the present disclosure volume is not considered to be sufficient in creating environmental awareness. Therefore, it is necessary to encourage or compel them in reporting environmental information in their annual reports.

The concept of environmental reporting is relatively new in Bangladesh. Very few studies have been conducted on environmental reporting in the context of Bangladesh (Dutta & Bose, 2008). But Bangladesh is one of the most vulnerable countries because of environmental changes throughout the world. So, this study deserves importance in reporting the present position of environmental disclosure in annual reports of the selected listed companies in Bangladesh and in identifying the factors influencing the volume of disclosure justifying the association between company attributes and the volume of disclosure.

The balance of this research is organized as follows: Section 2 reviews prior studies identifying the motivational factors behind environmental information disclosure. Following this, section 3 provides objectives of the study. Then section 4 delineates methodology and section 5 describes findings and analysis of the study. Finally, the study concludes with providing some practical implications and directions to further study.

2. Literature Review

There were enormous researches on environmental accounting but there were no studies on environmental disclosure before 1970s. The first environmental accounts were introduced by Norway in the 1970s and were slowly adopted by other countries (Shil & Iqbal, 2005). In the following years, many countries, like UK, USA,

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Canada, Japan etc, actively conducted research on environmental accounting information and have taken different crucial steps in environmental protection (Zhang et al, 2009). Firms' environmental performances in four industries from 1970 to 1975 were investigated by Shane and Spicer (1983). They found that comparatively larger companies significantly increased to disclose environmental information. Over the period of 1982 to 1991, the environmental information disclosures in the annual reports of Canadian public companies operating in the mineral extraction, forestry, oil and gas, and chemical industries were analyzed by Neu, Warsame and Pedwell (1998). They focused their analyses on following: the influence of external pressure concerning environmental disclosures in annual reports; the characteristics of environmental disclosure vis-à-vis other 'social' disclosure; and the association between environmental disclosure and actual performance.

In the early 1990's, World Bank conducted a review of EA, providing a compendium of which countries had complied EA, the method that had been used to construct EA, and the extent of coverage (Peskin and Lutz, 1990). Moneva and Liena (2000) opined that the environmental reporting practices in the annual reports published by companies is sensitive for the environment in Spain, and determine the evolution of these practices during the period 1992-1994. Moneva and Liena (2000), on the basis of stakeholder theory, also found out that the environmental reporting of these sample companies has a fundamentally narrative character, although there has been an increase in both quantitative and financial reporting, as well as in the number of companies that are reporting.

The environmental disclosure made by 51 United States manufacturing firms for 1992 and 1993 were focused by Hughes et al (2001). They used content analysis to analyze the annual reports and found that disclosure performance differs between firms which they rated as good, mixed or poor. The American Financial and Accounting Standards Board (2001) reported that companies can improve their business reporting by voluntarily disclosing more available proper information in which the investment community and shareholders have a keen interest. They stated that these matters include identifying factors important to the financial success of the company, delineating management's plans and strategies for managing those factors in the past and future, and specifying measurements used by management to assess its effectiveness in executing those plans and strategies for corporate governance and corporate social responsibility (CSR). While Dye (2001, cited in Zhang et al, 2009) argued that the theory of voluntary disclosure is a special case of game theory with the following central premise: any entity contemplating making a disclosure will disclose information that is favorable to the entity, and will not disclose information unfavorable to the entity. Shil & Iqbal (2005) stated that EA has been used increasingly day by day in the developed and developing countries and now-a-days, a good number of companies are putting their concern regarding EA and they are disclosing different environmental information in their annual reports.

3. Objectives of the Study
Main Objective:
The main objective of the study is to evaluate the environmental disclosure practices of the listed companies in Bangladesh.
Specific Objectives:
The specific objectives of the study are as given below:
(a) To know about environmental reporting practices of selected listed companies in Bangladesh.
(b) To know the volume of environmental information reported in annual reports of the selected listed companies in Bangladesh.
(c) To justify whether there is any relationship between extent of environmental reporting and company attributes.

4. Methodology of the Study
This section contains the research methodology of the study. This section describes sample selection procedures, selection of period, sources of data, calculation of environmental reporting index and technique used for content analysis.

4.1 Sample Selection
There are 22 sectors in Dhaka Stock Exchange (DSE) and 20 sectors in Chittagong Stock Exchange (CSE). To prevent result from being contaminated by inter-industry factors, the study selected sample companies from different sectors. Six sectors were purposively selected from the available sectors which are listed in both DSE and CSE. The selected sectors are textile, cement, engineering, food, power & fuel, and banking. Again, from these stratified six sectors, purposively five companies from each stratum were selected randomly. List of the 30 selected sample companies provided in Appendix-1:

Table No. 1: Selected sectors and number of companies available in the sector and selected sample

S/N	Sectors	Available No. of listed Companies	Selected No. of listed Companies
1	Textile	28	5
2	Cement	6	5
3	Engineering	23	5
4	Food	16	5
5	Power & Fuel	14	5
6	Banking	30	5
	Total		30

Source: Developed by authors

4.2 Selection of period

The study was conducted in 2012. To make study a contemporary and up to date, the data should be of latest and current year. Therefore, 30 annual reports of the 30 sample companies were collected because the annual report of 2011 was the latest data in 2012.

4.3 Data Sources

The present study was conducted on the basis of secondary data. The secondary data were collected from annual reports of the selected sample companies, research papers, etc. Maximum annual reports were collected from the websites of the respective companies and remaining annual reports, which were not possible to collect from the websites, were collected from DSE. Research papers were also collected from websites.

4.4 Content Analysis

A manual content analysis approach was followed in analyzing the annual reports to measure the volume of environmental information disclosure. A data set consisting of 56 items of environmental information (Appendix-3) was developed through literature review. These 56 items were classified into six classes as environmental policy items (5), environmental pollution items (20), environmental energy items (7), environmental audit items (7), environmental financial items (9) and environmental other items (8). The data set of 56 items were collected from the study of Shirley, et al, (2009), Lodhia (1999), Dutta and Bose (2008), Islam and Deegan (2010), Hossain, Islam, and Andrew (2006), Zhang, et al, (2009), Kamla, Gallhofer and Haslam, (2006), and others.

4.5 Calculation of Reporting Index

For determining disclosure volume both weighted disclosure index and un-weighted disclosure index can be used. Researchers such as Wallace et al. (1994), Cook (1991 and 1992), Karim (1995), Hossain et al (1994), Ahmed and Nicholls (1994), Hossain (2000 and 2001), and Ullah (2013) adopted a dichotomous procedure in which an item scores '1', if disclosed and '0' if not disclosed. Past experience shows that the use of weighted and un-weighted scores for the items disclosed in the corporate annual reports and calculation can make little or no difference to the findings (Coomba and Tayib, 1998). Thus, the study used this un-weighted disclosure index methodology. So, the un-weighted disclosure method measures the total disclosure (TD) score of a selected company (suggested by Cooke, 1992) as follows:

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

Where,

d = 1 if item di is disclosed
0 = if the item is not disclosed
n = number of items

However, the main theme of the un-weighted disclosure index is that all items of the disclosed information in the index are considered equally crucial to the average users.

4.6 Techniques used for data analysis

There techniques used for analyzing data include average, standard deviation, co-efficient of variation, percentage, and correlation etc. SPSS software version 19 was used to analyze the data.

4.7 Model Development and Hypotheses

In order to assess the association between company attributes and environmental disclosure volume, the following Ordinary Least Square (OLS) regression model is to be fitted to the data:

$$UDI_i = \beta_0 + \beta_1 Log\_TA + \beta_2 Log\_GR + \beta_5 NOP + \beta_6 NOE + \beta_3 Age + \beta_4 EPS + e_i$$

Where, UDIi = total disclosure score received for each sample
β_0 = the intercept, ei = the error term.

4.7.1 Size:

Many disclosure studies (e.g. Cooke, 1991 and Ahmed and Nichollas, 1994) suggest that there is a significant relationship between firm size and the extent of voluntary disclosure. Ullah (2013), Hossain, (2010); Silva and

Christensen, (2004); Spiegel, M.M. and Yamori, N., (2004); Ismail, T.H., (2002) and Hossain et al. (1995) found a positive relationship between size and the level of information disclosed, while McNally et al. (1982) concluded that size is a dominant corporate characteristic in establishing the leaders in voluntary disclosure practice. Several measures can be taken as the measure of size of the firms. In the present study, total assets (TA), gross revenue (GR), number of projects (NOP) and number of employees (NOE) were used as the measure of size of the firms.

H1: There is no significant association between size of the companies (measured by total assets, gross revenue, number of projects and number of employees) and the volume of environmental disclosure.

4.7.2 Age:

It is argued that older, well-established companies are likely to disclose more than newly established companies. The extent of a company's disclosure may be influenced by its age, i.e. stage of development and growth (Owusu-Ansah, 1998; Akhtaruddin, 2005 and Ullah, 2013).

H$_2$: There is no significant association between Age and the volume of environmental disclosure.

4.7.3 EPS:

Earlier studies of Cerf, (1961); Singhvi and Desai, (1971); Wallace, (1987); Raffournier, (1995); Wallace and Naser, (1995); Inchausti, (1997); Owusu-Ansah, (1998); Hossain, (1998) identified that profitability is capable of influencing the level of corporate information disclosure.

H3: There is no significant association between Profitability (measured by EPS) and the volume of environmental disclosure.

5. Findings and Analysis

5.1 Sentences, Words, Charts, and Pictures

It was found that sample companies disclosed environmental information basically in written form and sometimes through pictures but no company disclosed environmental information using charts in their annual reports. Table No. 2 shows that maximum 53.33% of the sample companies used 100-200 words and maximum 46.67% of the sample companies used 5-10 sentences in disclosing environmental information in their annual reports. Only four (13.33%) of the sample companies used pictures ranging from 1-6 in this regard. The analysis found that Heidelberg Cement Bd. Ltd. used maximum 495 words, Pran Food Ltd. used maximum 6 pictures and Heidelberg Cement Bd. Ltd. used maximum 33 sentences in environmental disclosure in their annual reports (Appendix-2).

Table No. 2: showing the ranges words and sentences used for environmental disclosure

Range of Word used	No. of Company	% in the Sample	Range of Sentences used	No of Company	% in the Sample
Below 100	5	16.67%	Below 5	5	16.67%
100-200	16	53.33%	5-10	14	46.67%
200-300	5	16.67%	10-15	7	23.33%
300-400	3	10.00%	15-20	3	10.00%
Above 400	1	3.33%	Above 20	1	3.33%
Total	30	100.00%	Total	30	100.00%

Source: Analyzed by authors

Table No. 3 shows that sample companies used on an average 181.30 words, 8.67 sentences and 0.43 pictures in environmental disclosure in annual report. The highest standard deviation, that is, highest variation is found in case of words which varied from minimum 0 to maximum 495.

Table No. 3: showing the mean, standard deviation and co. var. of word, sentences and pictures

	Word	Sentence	Picture
Mean	181.30	8.67	0.43
Std. Deviation	113.44	6.30	1.33
Co. Var.	0.63	0.73	3.09
Minimum	.00	.00	.00
Maximum	495.00	33.00	6.00

Source: Developed by authors

Table No. 4 shows that sample companies did not disclose environmental information in a specific part but different companies disclosed in different parts of their annual reports and also a particular sample disclosed environmental information in different locations. From table-4, it is observed that maximum 12 (17.91%) sample companies disclosed environmental information in Board of director's statement and only minimum 3 (4.48%) sample companies disclosed in their balance sheet.

Table No. 4: showing the location of environmental disclosure of the annual reports

Location in annual report	Total	% of the total items of information
Chairman's Statement (C/S)	9	13.43%
Managing Director's statement	6	8.96%
Board of director's statement (BOD)	12	17.91%
Balance sheet(B/S)	3	4.48%
Income statement(I/S)	4	5.97%
Corporate philosophy Report	8	11.94%
Corporate governance Report	8	11.94%
Corporate Social Responsibility Report	6	8.96%
Others	11	16.42%

Source: Developed by Authors

5.2 Total Environmental Disclosure

Total environmental disclosure was calculated by adding the disclosure scores of the scores of six separate classes, that are, the scores of environmental policy items, environmental pollution items, environmental energy items, environmental audit items, environmental financial items, and environmental other items. Table no. 5 shows that the mean disclosure score, standard deviation, variance, minimum and maximum score of each category and of total as a whole. It is found that maximum mean of 3.30 items disclosed by environmental pollution items followed by environmental policy items (1.80) and by environmental energy items (1.53). Maximum variation is also observed in case of environmental pollution items and maximum 13 items out of 20 were disclosed by this category.

Table No. 5: showing the total environmental disclosure and disclosure under different classes

	Envt_Policy	Envt_Pollution	Envt_Energy	Envt_Audit	Envt_Financial	Envt_Other	Total Disclosure
Mean	1.80	3.30	1.53	0.43	0.77	0.70	8.53
Std. Deviation	1.21	2.79	1.25	0.90	1.04	1.02	6.02
Variance	1.48	7.80	1.57	0.81	1.08	1.05	36.26
Minimum	.00	.00	.00	.00	.00	.00	.00
Maximum	4.00	13.00	4.00	4.00	4.00	3.00	27.00

Source: Developed by authors using SPSS Software

5.3 Ranking of Sample Companies:

Table No. 6 provides the ranking of the companies on the basis of un-weighted total environmental disclosure score to evaluate their relative position. It is found that the Heidelberg Cement Bd. disclosed maximum of 27 items (48.21%) out of 56 expected items in their annual reports and Gemini Sea Food, and Aftab Automobiles disclosed no information regarding environmental issues in their annual report. In the ranking, Heidelberg Cement Bd. followed by Dutch-Bangla Bank limited which disclosed 25 items (44.64%), Summit Power Limited disclosed 15 items (26.79%), British American Tobacco Bangladesh Corporation disclosed 13 items (23.21%) and so on. Average environmental disclosure is 15.23% of the expected items.

Table No. 6: showing ranking of the sample companies based on total disclosure score

S/N	Company Name	Envt _Policy	Envt_ pollution	Envt_E nergy	Envt _Audit	Envt_F inancial	Envt _Other	Total Factors
1	Heidelberg Cement Bd.	4	10	4	2	4	3	27
2	Dutch-Bangla Bank	4	13	0	2	3	3	25
3	Summit Power Limited	4	2	2	4	2	1	15
4	BATBC	3	5	3	1	1	0	13
5	IFIC Bank	1	6	0	1	1	3	12
6	Maksons Spinning Mills Ltd	4	3	1	0	1	2	11
7	Pran Food Ltd.	2	4	3	0	2	0	11
8	Anlimayarn Deying Ltd	2	5	1	0	0	2	10
9	Lafarge Surma Cement Ltd.	3	3	1	0	1	2	10
10	GPH Ispat Ltd.	2	4	3	1	0	0	10
11	Rahim Textile	2	4	3	0	0	0	9
12	Square Textile	1	4	3	0	1	0	9
13	Metro Spinning	3	4	1	0	0	1	9
14	BSRM Steels Limited	1	3	3	0	1	1	9
15	Padma Oil Co.	2	3	3	0	0	1	9
16	Aramit Cement	1	5	1	0	0	0	7
17	Dhaka Electric Supply Co. Ltd	1	3	3	0	0	0	7
18	City Bank	2	3	0	1	1	0	7
19	United Commercial Bank Ltd.	2	2	0	0	2	1	7
20	Bank Asia Ltd.	2	3	0	0	1	1	7
21	Fu Wang Food	2	2	2	0	0	0	6
22	Jamuna Oil Company Limited	1	3	2	0	0	0	6
23	Golden Son Ltd.	1	2	2	0	0	0	5
24	Power Grid Co. of Bd. Ltd.	2	2	1	0	0	0	5
25	Apex Foods	0	1	1	0	2	0	4
26	Confidence Cement	1	0	2	0	0	0	3
27	Meghna Cement	1	0	0	1	0	0	2
28	S. Alam Cold Rolled Steels Ltd.	0	0	1	0	0	0	1
29	Aftab Automobiles	0	0	0	0	0	0	0
30	Gemini Sea Food	0	0	0	0	0	0	0

Source: Developed by authors

The following graph shows the total environmental disclosure position of the sample companies in Bangladesh.
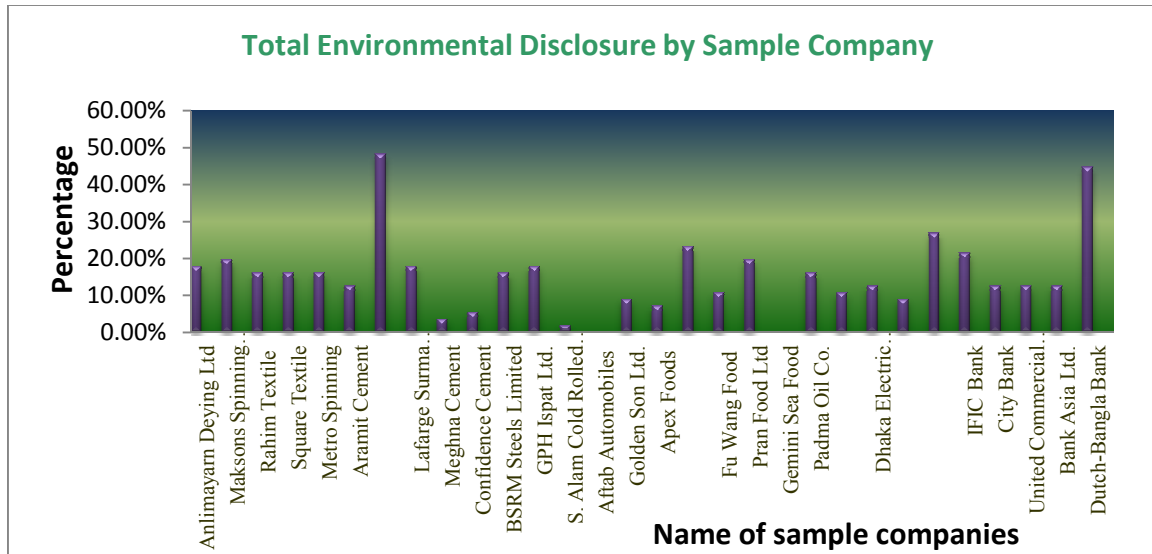
Source: Developed by authors

5.4 Range of Total Environmental Disclosure Score

Table no. 7 shows the distribution of disclosure performance by expressing them in number of items disclosed as a percentage of total 56 items in disclosure index. The environmental disclosure performance presented in the table shows that maximum 17 (56.67%) of the sample companies disclosed only 10%-20% of the expected 56 items in their annual reports and 8 (26.67%) of the sample companies disclosed less than 10%, only 3 (10%) of the companies disclosed between 20%-30% and there is only 2 (6.67%) sample companies disclosed between 40%-50%. As no company disclosed more than 50% environmental items and maximum sample companies disclosed only between 10%-20% and hence it can be said that the environmental disclosure performance of the sample companies are not satisfactory in Bangladesh.

Table no. 7: showing range of total environmental disclosure of the sample companies

% of Disclosure	No. of companies	% of Companies
Less than 10%	8	26.67%
10%-20%	17	56.67%
20%-30%	3	10.00%
30%-40%	0	0.00%
40%-50%	2	6.67%
50%-over	0	0.00%
Total	30	100.00%

Source: Developed by authors

5.4 Comparison of Mean, Std. Deviation, and Variance among Different Sectors:

Information presented in Table No. 8 shows a comparative environmental disclosure performance of the sample companies in Bangladesh. It is observed that the sample banking companies (mean 11.60) on an average disclosed more environmental information in their annual reports than that of other companies. On the basis of the mean disclosure, banking sector is followed by cement industries (mean 9.80) which are followed by textile industries (mean 9.60) and minimum disclosure is observed in case of engineering sector. The highest among the maximum scores secured by cement sector and lowest among the minimum scores secured by engineering and food sectors. The variation is highest in case of cement industries and the lowest in case of textile industries.

Table No. 8: showing comparative Mean, Std. Deviation, and Variance of different sectors

	Textile	Cement	Engineering	Food	Power	Bank
Mean	9.60	9.80	5.00	6.80	8.40	11.60
Std. Deviation	0.89	10.13	4.53	5.26	3.97	7.80
Variance	0.80	102.70	20.50	27.70	15.80	60.80
Minimum	9.00	2.00	0.00	0.00	5.00	7.00
Maximum	11.00	27.00	10.00	13.00	15.00	25.00

Source: Developed by authors using SPSS Software

5.5 Multivariate Analysis

An Ordinary Least Square (OLS) regression model was fitted for the environmental disclosure score as dependent variable and company attributes as independent, and the results are presented in Table 9. The multiple regression model is significant at 5% level. The coefficient of determination (R square) indicates that only 22.50% of the variation in the dependent variable is explained by variations in the independent variables. The coefficient representing log of asset is statistically significant at 1.9% level, while the coefficients for log of GR, number of projects, number of employees, age and profitability are not statistically significant. As environmental disclosure is voluntary disclosure for the listed companies in Bangladesh and volume of this disclosure depends on the discretion of the management, therefore, variation in environmental disclosure is poorly explained by the independent variables and there is a poor correlation between environmental disclosure and company attributes. As the value of Durbin-Watson test is near about 2, therefore, there is no auto-correlation in the regression model.

Table No. 9: showing the model summary of the study

Model	R	R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
				R Square Change	F Change	df1	Df2	Sig. F Change	
1	.475^a	.225	5.82513	.225	1.397	5	24	.261	1.739

a. Predictors: (Constant), NOP, EPS, Age, Log_GR, Log_Asset

b. Dependent Variable: Total_Disclosure

Source: Developed by authors using SPSS Software

5.6 Correlation Analysis

Pearson product moment correlation coefficients (r) were computed to justify the correlation between the dependent and independent variables. The following table no.10 shows a correlation matrix of all values of r for the independent variable along with the dependent variable. It is found that significant collinearity among some variables such as, between total disclosure and asset is 0.426, between gross revenue and asset is 0.643, between asset and NOE is 0.708, between asset and NOP is 0.686, between NOE and NOP is 0.818. Therefore, the level of environmental disclosure is only associated with the volume of assets of the sample companies in Bangladesh and other independent variables cannot affect the level of environmental information disclosure in annual reports of the companies.

Table No. 10: Showing association between environmental disclosure and company attributes

Correlations Matrix							
	Total_Discl	Log_TA	Log_GR	NOP	NOE	Age	EPS
Total_Discl	1.000						
Log_TA	.426*	1.000					
Log_GR	.188	.643**	1.000				
NOP	.299	.686**	.412*	1.000			
NOE	.306	.708**	.440*	.818**	1.000		
Age	-.097	.011	.252	-.053	.109	1.000	
EPS	-.300	-.305	-.069	-.032	-.094	.109	1.000

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

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

Source: Developed by authors using SPSS Software

6. Practical Implications of the Study

Among others the major policy implications of this research are as follows:

(a) The owners, management and accountants of the companies are expected to have guidelines and motivated from this article to report their activities regarding environmental aspects.

(b) The researchers in environmental accounting and reporting may usefully use the issues raised in this article for more comprehensive studies in environmental accounting and reporting in environmentally most vulnerable country like Bangladesh.

The Government, regulatory bodies and organizations established for environmental protections are expected to realize the real position of polluting and protecting activities of the companies and to formulate guidelines and laws regarding pollution, protection and accounting and reporting of environmental activities of the companies in Bangladesh.

7. Direction to Further Study

The present study focused on only environmental disclosure in the annual reports of selected companies in Bangladesh. There are huge scopes of conducting more studies in the same direction in the following areas:

(a) Needs for environmental reporting practices in an environmentally vulnerable country like Bangladesh
(b) Role of Environmental Accounting and Reporting in creating environmental awareness among the corporate stakeholders in Bangladesh
(c) Impact of environmental disclosure on financial position of the listed companies in Bangladesh.
(d) Environmental accounting practices: Its Prospects and Challenges in Bangladesh
(e) Environmental Accounting and Reporting: An analysis in Islamic point of view

8. Conclusion and limitations

The study is an endeavor in exploring the environmental disclosure practices in Bangladesh and found that some companies are disclosing more information regarding environmental issues but some companies are not disclosing any or disclosing very negligible information regarding environmental aspects. The analysis of the association between volume of environmental disclosure and company attributes reveals that only assets of the companies influencing the volume of environmental disclosure. But the results may be different if different sample or data are used for a study. So, in using and interpreting the results of the study, the limitations are also to be considered. The major limitations of the study include: the study used secondary data only; it is based on purposively selected listed companies in Bangladesh, and annual reports of one year were used for the study. The study expects that the companies would encourage in disclosing more information on environmental aspects and would aware the people regarding environmental protection in environmentally most vulnerable countries like Bangladesh.

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Appendix-1
List of Companies under study and their Environmental Disclosures

S/N	Company Name	Envt_Policy	Envt_pollution	Envt_Energy	Envt_Audit	Envt_Financial	Envt_Other	Total Factors
A	**Textile Sector**							
1	Maksons Spinning Mills Ltd	4	3	1	0	1	2	11
2	Anlimayarn Deying Ltd	2	5	1	0	0	2	10
3	Rahim Textile	2	4	3	0	0	0	9
4	Square Textile	1	4	3	0	1	0	9
5	Metro Spinning	3	4	1	0	0	1	9
B	**Cement Sector**							
6	Heidelberg Cement Bd.	4	10	4	2	4	3	27
7	Lafarge Surma Cement Ltd.	3	3	1	0	1	2	10
8	Aramit Cement	1	5	1	0	0	0	7
9	Confidence Cement	1	0	2	0	0	0	3
10	Meghna Cement	1	0	0	1	0	0	2
C	**Steel Sector**							
11	GPH Ispat Ltd.	2	4	3	1	0	0	10
12	BSRM Steels Limited	1	3	3	0	1	1	9
13	Golden Son Ltd.	1	2	2	0	0	0	5
14	S. Alam Cold Rolled Steels Ltd.	0	0	1	0	0	0	1
15	Aftab Automobiles	0	0	0	0	0	0	0
D	**Food Sector**							
16	BATBC	3	5	3	1	1	0	13
17	Pran Food Ltd.	2	4	3	0	2	0	11
18	Fu Wang Food	2	2	2	0	0	0	6
19	Apex Foods	0	1	1	0	2	0	4
20	Gemini Sea Food	0	0	0	0	0	0	0
E	**Power Sector**							
21	Summit Power Limited	4	2	2	4	2	1	15
22	Padma Oil Co.	2	3	3	0	0	1	9
23	Dhaka Electric Supply Co. Ltd	1	3	3	0	0	0	7
24	Jamuna Oil Company Limited	1	3	2	0	0	0	6
25	Power Grid Co. of Bd. Ltd.	2	2	1	0	0	0	5
F	**Banking Sector**							
26	Dutch-Bangla Bank	4	13	0	2	3	3	25
27	IFIC Bank	1	6	0	1	1	3	12
28	City Bank	2	3	0	1	1	0	7
29	United Commercial Bank Ltd.	2	2	0	0	2	1	7
30	Bank Asia Ltd.	2	3	0	0	1	1	7

Appendix: 2

Number of sentences, words, and pictures used in the corporate annual reports of the sample companies are as follows:

S/N	Company Name	Number of words	Number of sentences	Number of picture
1	Anlimayarn Deying Ltd	196	10	0
2	Maksons Spinning Mills Limited	234	11	0
3	Rahim Textile	277	12	0
4	Square Textile	177	9	0
5	Metro Spinning	199	9	0
6	Aramit Cement	109	8	0
7	Heidelberg Cement Bd.	495	33	0
8	Lafarge Surma Cement Ltd.	270	11	0
9	Meghna Cement	72	2	0
10	Confidence Cement	103	3	0
11	BSRM Steels Limited	127	7	0
12	GPH Ispat Ltd.	238	11	0
13	S. Alam Cold Rolled Steels Ltd.	36	1	0
14	Aftab Automobiles	0	0	0
15	Golden Son Ltd.	101	5	0
16	Apex Foods	72	6	0
17	BATBC Ltd.	370	17	4
18	Fu Wang Food	119	7	0
19	Pran Food Ltd	178	11	6
20	Gemini Sea Food	0	0	0
21	Padma Oil Co.	196	7	0
22	Jamuna Oil Company Limited	128	5	0
23	Dhaka Electric Supply Company Ltd	131	7	0
24	Power Grid Company of Bd. Ltd.	117	5	0
25	Summit Power Limited	309	15	1
26	IFIC Bank	262	13	0
27	City Bank	191	7	0
28	United Commercial Bank Ltd.	192	7	0
29	Bank Asia Ltd.	144	6	0
30	Dutch-Bangla Bank	396	15	2

Appendix-3

Environmental Items Considered for Development of Disclosure Index

A. Environmental policy:

Serial No.	Elements
1	Actual statement of policy
2	Statements of formal intentions
3	General statements of "the company will, the company does" nature
4	Investment appraisal to include consideration of the environment
5	Establishment of environmental management systems

B. Environmental pollution:

Serial No.	Elements
1	Waste(s) management
2	Eco-efficiency
3	Packaging and take-back.
4	Pollution and emissions- noise, spills, visual quality, including any attempts to identify, improve, control, treat or prevent
5	Carbon sequestration, climate change
6	Products and product development, improvements in products (including products that care for and help protect the environment)
7	Air emission information
8	Water discharge information
9	Research on new methods of production to reduce environmental pollution
10	Pollution –prevention technologies
11	Pollution control of industrial process
12	Pollution reductions in the conduct of business operations
13	Solid waste disposal information
14	Conservation of natural resources
15	Recycling plant of waste products
16	Installation of effluent treatment plant
17	Land reclamation and forestation programmes
18	Raw materials conservation
19	Designing facilities harmonious with the environment
20	Undertaking wildlife conservation

C. Environmental Energy:

Serial No.	Elements
1	Energy saving and conservation
2	Use/development/exploration of new sources, efficiency, insulation etc.
3	Utilization of waste materials for energy conservation
4	Discussion of the company's efforts to reduce energy consumption
5	Voicing the company's concern about the energy shortage
6	Direct energy use
7	Indirect Energy use

D. Environmental audit:

Serial No.	Elements
1	Reference to environmental review, scoping, audit, assessment, including independent attestation
2	Incidents of and fines for non-compliance
3	Obtaining certification for Environmental Management Systems/ISO 14001
4	Conducting Environmental Impact Assessment (EIA) / air quality assessment
5	Execution of environmental policies
6	Compliance with environmental standards and regulation
7	Environmental risk assessment and estimation

E. Environmental financial:

Serial No.	Elements
1	Reference to financial/economic impact
2	Investment and investment appraisal
3	Discussion of areas with financial/economic impact
4	Discussion of environmental-economic interaction
5	Contingencies, provisions
6	Environmentally-related loans, grants; costs of purchasing and installing environmental friendly machines and equipment; maintenance and consultancy costs
7	Past and current expenditure for pollution control
8	Future estimates of expenditures for pollution control equipment and facilities
9	A record of the allocation of specific fund

F. Environmental other:

Serial No.	Elements
1	Landscaping
2	Public amenity provision
3	Involvement with initiatives and schemes
4	Environmental education (note: care should be exercised noting the overlap with community)
5	Environmental awards; employee environmental training and awareness; partnerships between environmental research institutions and business
6	The enhancement of a moral responsibility influenced by Islamic principles
7	Maintenance the balance of environment
8	To protect and enhance the well-being of future generations

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