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Impact of Environmental Accounting Reporting Practices on Financial Performance:
Evidence From Banking Sector of Bangladesh

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ABSTRACT

The study intended to explore the effect of environmental accounting reporting (EAR) practices on the financial performance of the banking industry of Bangladesh. Panel data consisting of 25 listed banks in Dhaka Stock Exchange (DSE) over the period 2012 to 2016 has been employed in this study. An environmental accounting reporting score (EARS) index has been developed by analyzing the content of banks' annual reports. Using Pooled OLS, the analysis revealed that EAR reporting had been increased after publishing the Bangladesh bank guideline. The empirical analysis showed that a significant positive correlation between EAR and profit margin (PM). However, EAR has an insignificant relationship with ROAE (return on average equity), EPS (earnings per share), and ROAA (return on average assets). Among control variables, size, capital ratio, overhead expense, and loan ratio have a significant impact on financial performance.

KEYWORDS

Bangladesh, Banking Industry, Environment Accounting Reporting (EAR), Environmental Accounting Reporting Score (EARS) Index, Financial Performance, Panel Data, Pooled OLS

1. INTRODUCTION

Recently, global warming gets international consideration as it has been steered by rapid use of natural resources and brutal industrial competition due to globalization (see UNEPFI, 2007; Guillen, 2001). Among various factors, greenhouse gas (GHG) is the main culprit for changing the balance of the natural environment (World Bank, 2013). Although manufacturing institutions are blamed primarily for environmental change, greenhouse gas, service organizations, such as banks and other financial institutions, also contribute as they fund the major industry of any country (Hossain *et al.* 2016). So, stakeholders want to know about financial and non-financial information based on which they can take a proper investment decision. Theories suggest that profit maximization principle should

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be affected by accounting measures rather than sustainable development. But this issue is still on the debate as researchers found different results (Dobre *et al*., 2015).

Green banking, as a part of environmental accounting, ensures that banking activities do not encourage environmental pollution. Green banking activities include online banking, less paper, mobile banking, green credit cards, green mortgages, etc. Green banking promotes environmental friendly projects through lowering interest rates. In the green banking circular, Bangladesh Bank identifies Bangladesh as one of the vulnerable countries exist (Hossain *et al.,* 2016). ISO (International Organization for Standardization) has outlined ISO 14000 including a sequence of standards covering various aspects of environmental management. These standards lead to increase institutions productivity as standards provide a direction toward environmental performance (Norhasimah *et al*., 2016).

Developing country such as Bangladesh, development depends on the manufacturing and financial sectors. As Bangladesh is moving towards the middle-income country, environmental issue has become very important to consider. But, Bangladesh is far behind than other countries regarding environmental accounting reporting practices. The study is based on Bangladesh as many development events have occurred here recently. Most of the preceding studies focused on two things: disclosure nature and the association between disclosure and determinants of information reporting (Sobhani *et al*., 2009). As banks are the major financial institution engaged in financing large industry, they have a direct and indirect influence on environmental issues. Moreover, Bangladeshi banks are following the GRI (Green Reporting Initiative) framework to prepare their sustainability reports. Considering the importance of environmental disclosures, Bangladesh Bank outlined green banking policy guideline (2012), which is the only compulsory framework for disclosing environmental issues. From 2013, Bangladesh Bank itself is also publishing green banking appraisal report considering all the financial institution in the banking sector (Masud *et al.,* 2017). However, there are not enough studies on EAR practices of bank industry, and some studies are limited to green publication of banks' activities excluding few studies, which are based on GRI (Khan *et al*., 2011; Islam *et al*., 2016) and Sustainability (Sobhani *et al*., 2012).

Focusing on the importance of financial performance, this study aims to show how environmental accounting reporting practices influence financial performance. This study reveals the primary implementation of EAR practices in the banking industry of Bangladesh. Especially, it measures 18 categories, which have been selected based on the green banking guideline framework. Moreover, it also aims to show EAR practices besides the lawful provision of the banking industry in Bangladesh (Masud *et al.,* 2017). So, this study will be effective literature for assessing the environmental reporting effects on the financial performance of listed bank companies in Bangladesh. Moreover, it will also contribute to lessening the unending argument regarding the relationship between EAR practices and financial performance.

2. LITERATURE REVIEW

To the stakeholder, responsiveness towards the environment is not a new idea. Many researchers have outlined the issue of environment disclosure (Das *et al*., 2008). Only a little association has been found between the environmental performance of companies and the conversation of that performance. Publication of environmental practices is found inadequate, ambiguous and unreliable in most of the annual reports of US companies (Neu *et al.*, 1998; Wiseman, 1982; Freedman & Wasley, 1990; Gamble *et al.,* 1995). Companies tend to increase information disclosure when the media focuses on the environmental problems and prospects (Neu *et al*., 1998). In addition to providing a link between stakeholder interest and environmental disclosure, it is concluded that decline in net income seeks to rise in disclosure as management tries to distract stakeholders focus from poor financial performance (Neu *et al*., 1998; Freedman & Jaggi, 1988). Stanwick revealed that higher financial performers tend to follow strong environmental commitment with environmental policy than lower financial performers

in which the highest environmental performance description is given by mid-level financial performers (Stanwick & Stanwick, 2000) where inverse relation existed between corporate social performance and pollution emissions (Stanwick & Stanwick, 1998). Firms have better financial improvement after the material improvement of their environmental performance in which profitability was low before the environmental decline (Clarkson *et al*., 2011). Studying 52 observations through meta-analysis, Orlitzky (2003) showed that among the corporate environmental performance indicators, reputation has a higher correlation with the corporate financial performance which is an accounting-based indicator rather than a market-based indicator. Analysis of leading companies of Bursa Malaysia reveals that materials, energy, water and social aspect have a significant effect on both ROA and ROE (San Ong *et al.,* 2014). A case study on 41 out of 166 manufacturing companies of Bangladesh clarifies that 47.4% variation in ROA can be explained by environment accounting reporting disclosure (Rakiv *et al*., 2016). It ensures a significant positive relationship between ROA and environmental reporting practices (Rakiv *et al*., 2016; Rajput *et al*., 2013; Bassey *et al.,* 2013). Although Juhmani (2014) found that, among the listed companies of Bahrain, 57.57% sample companies disclose environmental information but (Sarumpaet, 2006; Juhmani, 2014) no significant relationship is found between profitability and environmental reporting practices. Despite getting so much positive relation, Makni *et al*. (2009) showed a significant negative effect of environmental accounting disclosure on three financial performance measurement variables, namely ROA, ROE and market returns. Freedman and Jaggi (1988) haven't found any statistically significant relationship between disclosures of pollution from four major polluting industries, namely chemicals, steel, paper, oil, and economic performance of those companies in the USA. But, a significant positive relationship has been detected when the sample is stratified based on industry group.

So, it has become a matter of debate that whether environment disclosure reporting practice impacts organizational performance positively or negatively. In some cases, there wasn't any statistical relationship at all. Perhaps, new qualitative approaches or superior methodologies are required. Perhaps, this controversy, whether any relationship exists or not, will never be resolved completely (Aupperle, 1985).

3. THEORETICAL FRAMEWORK

3.1. Legitimacy Theory and EAR

Having a degree of overlap with many other theories, especially institutional theory and stakeholder theory (Hoque, 2006), legitimacy theory, derived from political economy (Deegan, 2006), can be viewed as a theoretical framework based on the presence of a social and exchangeable relationship between an organization and a community (O'Donovan, 2002). Despite social contract being the center part of legitimacy, it has been embraced in accounting research recently (Deegan, 2006). The relationship between a company and a community may not be resulted in positive if it doesn't consider the social responsibility (Mousa *et al.,* 2015). Legitimacy is regarded as one of the explanatory factors for environmental and social disclosures (Deegan *et al*., 2002). But Guthrie (1989) and Nazli (2004) were unable to predict legitimacy theory as the principal explanation for environmental disclosure in the Australian as well as in the Malaysian case respectively (Guthrie & Parker, 1989; Nazli & Sulaiman, 2004). However, being a positive theory, legitimacy theory aims to narrate or clarify corporate attitude instead of proposing how the organization should behave (Deegan, 2006). Moreover, Legitimacy theory is also identified as a system-based theory by Gray *et al*., (1995). For having legitimacy concern, organizations strive to provide positive information rather than negative information (Sobhani *et al.,* 2009). Nowadays, Corporations are found to exercise voluntary environmental reporting in their annual reports to notify the community about their environmental performances (Deegan, 2000). Therefore, it can be quoted that the banking industry of Bangladesh will follow proper EAR practices to cope with the prospect of society.

3.2. Stakeholders Theory and EAR

Stakeholders theory clarifies that an organization should weigh the expectation of individuals as well as groups that can regulate or are regulated by its activities while taking a decision and acquiring organizational objectives and goals (Gibson, 2000; Freeman, 1994). Banks around the world are getting continuous pressure from their diverse stakeholders (Jeucken, 2010; Coupland, 2006; Bhattacharya & Sen, 2004; Frenz *et al.,* 2005) to carry out business in an ethical and responsible manner as they are financing in major areas. Thus, any socially irresponsible operation can negatively affect the share price and the brand value of a bank (Hopkins & Crowe, 2003). On the other hand, if there is a proper engagement of the quality stakeholders, it can raise operational performance, build a stronger relationship, and enable proper risk management (Institute of Social and Ethical AccountAbility, 1999). Sometimes, the engagement of stakeholders may be questionable as it may raise critical issues when there is an interesting conflict between organization and stakeholder (Thomson & Bebbington, 2005). However, stakeholder engagement is needed to improve the ethical and social accountability of organizations towards their diverse stakeholders (Institute of Social and Ethical AccountAbility, 1999). As there are different groups of stakeholders with a different level of interest (Gamerschlag *et al.,* 2011), an organization should publish all kinds of environmental accounting information to its stakeholder through annual reports, brochures, magazines, policy guidelines, websites, or sustainability reports so that all groups of stakeholder's interests are considered properly (Khan *et al.,* 2011, Kilic *et al.,* 2015).

3.3. Institutional Theory and EAR

The institutional theory states that intra-organizational framework and actions depend mostly on exterior issues rather than on diminishing cost purposes (Moll *et al*., 2006). Organizations implement socially accepted structures and procedures when they face pressure from the institutional environment (Carpenter & Feroz, 2001). The new institutional theory asserts that action is an opposite reaction of the external environment and challenges that shape the social choices, which are the result of the institutional environment (Wooten & Hoffman, 2008). Central bank association, strategic orientation, management competency and best practice emulation are the fundamental institutional factors that affect the non-financial performance of banks and other financial institutions (Hussain & Gunasekaran, 2002). Isomorphism, one of the dimensions of institutional theory, denotes the procedure by which a firm habituate itself to institutional exercises of other organizations. In 2011, Bangladesh bank declared the green banking guidelines which have influenced the green banking disclosure level positively (Environment Accounting) and the routine process is ongoing through ensuring the disclosure criteria (Bose *et al*., 2018). Despite having various theories to identify environment reporting practices, legitimacy, stakeholder, and institutional theory are the most widely adopted theories to clarify environment reporting practices (Ali & Rizwan, 2013). A combination of these theories was used to clarify the motivation behind the corporate environmental and social reporting exercises of the Bangladesh apparel industry (Azizul & Deegan, 2008).

3.4. Research Hypotheses

In the above section, theoretical concepts, regarding the association between environmental accounting reporting and financial performance, are presented. Based on the literature of previous studies and different theories, the following hypotheses can be adopted for testing:

$H1_a$: EAR disclosure has a significant impact on ROAA.
$H2_a$: EAR disclosure has a significant impact on ROAE.
$H3_a$: EAR disclosure has a significant impact on EPS.
$H4_a$: EAR disclosure has a significant impact on PM.

4. ENVIRONMENTAL ACCOUNTING REPORTING IN BANGLADESH

Being a developing country, Bangladesh is facing a huge challenge in environmental management as 15,000 premature deaths and sicknesses have caused the situation alarming. Since the 1990s, despite taking the initiative (Ahmed, 2012), studies on several companies of Bangladesh show that the reporting practices of environmental cost and benefit in annual reports have not reached in satisfactory level (Ali *et al*., 2010). A recent study, by Masud *et al*., (2017), reveals that banks are disclosing renewable energy and green banking in the highest level in which waste management and environment recognition stand in the least. Whatever, the point of hope is that environmental accounting reporting level had improved from 16% in 2010 to 83% in 2014. The guidelines of Bangladesh bank on sustainable reporting can be considered as a prime factor behind this increase. There are some key reasons behind this low level of environmental accounting reporting practices, namely corporate unwillingness, political restriction, lack of sufficient manpower, corruption (Belal *et al*., 2015). The below table represents numerous laws to protect the environment.

5. MEASURING PERFORMANCE

5.1. Measuring Environmental Performance

Previous studies show that different methods are applied to measure the environmental performance. The various procedure, such as non-radial DEA (Data Envelopment Analysis) (Zhou et al. 2007), index procedure (Wiseman, 1982; Masud et al., 2017), are used to measure environmental performance. Picture, sentence, words, graph, and charts have also been used by Beattie and Jones (Beattie & Jones, 1992; Beattie & Jones, 1994) whereas pages have been calculated for measuring environmental reporting by Gray et al., (1996). From the above study, it can be concluded that there are no standardized criteria to measure environmental system. Based on the previous studies, this study comprises 18 major categories as proxy variables to quantify the environmental reporting practices of banks [See Appendix 1]. These categories have been selected considering the prior studies and the Green Banking Policy guideline of Bangladesh Bank (2012). For measuring the disclosure level, the different researcher used different approaches, such as weighted disclosure index and non-weighted disclosure

Table 1. The legitimate body of environmental accounting reporting in Bangladesh

EAR Legal Status in Bangladesh
1. Bangladesh Environment Conservation Act, 1995
2. Bangladesh Environment Conservation Rules, 1997
3. Bank companies Act, 1991 and Bangladesh Company act, 1994
4. National Environmental Policy, 1992
5. Financial Institution Act, 1993
6. Bangladesh Securities and Exchange Commission Act, 1993
7. Environmental Risk Management Guidelines, 2011
8. Environmental Court Act, 2010
9. Climate Change Trust Act, 2010
10. Policy guidelines for green banking, 2011
11. Bangladesh Biodiversity Act, 2012
12. BFRS guidelines, ICAB, ICMAB

Source: Masud et al. (2017)

index. Ullah (2015), Cook (1992), and Nicholls (1994), all of them used the dichotomous technique for measuring environmental disclosure where items score "1", if disclosed and "0" if not disclosed. From the literature review, weighted or unweighted measures for the objects, which are published in the annual report, have slight or no variance in the findings (Coombs & Tayib, 1998). Cooke (1992) suggested the un-weighted disclosure method for calculating total environmental reporting items in the annual report of a company. So, an un-weighted reporting index has been prepared to calculate item score in the annual report.

$$EARS = \sum_{i=1}^{n} d_i$$

Where EARS = Environmental Accounting Reporting Score
$d = 1$, if the item d_i is reported
$d = 0$, if the item d_i is not reported
n = number of items

Whatever, the main idea behind the un-weighted disclosure measure is that every individual item of the index is measured with equal importance to the average users (Cooke, 1992).

5.2. Measuring Financial Performance

Financial performance doesn't have any proper standard to measure as there are many ranges of standards available. It has been noted by Griffin and Mahon that 51 studies have used 80 financial measures as the proxy of corporate financial performance (Griffin & Mahon, 1997). Accounting returns and investors' returns are two broad categories of financial performance measurement (Cochran & Wood, 1984). Financial performance are calculated based on two categories: accounting-based measures of return, such as return on equity (ROE), return on asset (ROA), return on sales (ROS), Earnings Per Share (EPS), Price/Earnings ratio (P/E ratios) are widely used (Aupperle, 1985; Freedman & Jaggi, 1982; Bowman & Haire, 1975; Spicer, 1978; Bragdon & Marlin, 1972; Simpsons & Kohers, 2002; Fogler and Nutt, 1975) and market-based measures of return, such as market value, market value to book value and price-earnings-ratio (Freedman & Jaggi, 1986; Vance, 1975). For the first time, Moskowitz (1972) and Vance (1975) used the variable change in price per share as the proxy of investors return index (Moskowitz, 1972; Vance, 1975). According to Gentry and Shen, market-based returns show future financial performance in which accounting-based measures are used as past corporate financial performance indicator (Gentry & Shen, 2010). Simpson and Kohers (2002), Griffin and Mahon (1997) and Orlitzky (2003) have emphasized the importance of using traditional accounting measures for estimating corporate financial performance. Therefore, accounting-based measures, especially, return on average asset (ROAA), return on average equity (ROAE), earnings per share (EPS) and profit margin have been adopted as the dependent variable of the study (Moneva *et al.,* 2010). Moreover, ROAA is a good indicator of managerial efficiency as it shows how efficiently an organization can generate profit using its asset (Dietrich & Wanzenried, 2011).

6. RESEARCH METHODOLOGY

6.1. Data and Sample

The study adopts 25 (83.33%) banks as the sample out of 30 listed bank companies. These samples were taken from Dhaka Stock Exchange Ltd. Considering the obtainability of the annual report. The study inherits the panel data of 5 years period from 2012-2016. The study considers secondary data from audited financial statements, previous research paper, websites, etc. Pooled Ordinary Least Square (OLS) regression technique, correlation, standard deviation, and control variables such as

Table 2. Summary of research variables

Variable Name	Variable Symbol	Variable Definition
Dependent Variable		
Return on Asset Return on Equity Earnings Per Share Profit Margin	ROA ROE EPS PM	Net Income / Total Asset Net Income / Shareholders' Equity Net Income - (Capital Invested ×WACC) Net income after tax
Independent Variable		
Environmental Accounting Reporting Score	EARS	EARS = 1, if disclosed EARS = 0, if not disclosed
Control Variable		
Size Capital Ratio Loan Ratio Overhead Expense Ratio Debt Ratio	Size Cap. ratio Loan ratio Overhead exp. Debt ratio	Log of total assets Equity capital / Average total assets Average total loans / Average total assets Total non-interest expenses / Average total assets Long-term debt / Total assets

Source: Authors' compilation

size, debt ratio, capital ratio, overhead expense and loan ratio, have been used for the estimation of data and the examination of the model.

6.2. Defining Control Variables

Previous literature, which has highlighted the association between environmental accounting reporting and financial performance, states that there should be some other variables which will control the impact on dependent variables such as size, industry specification and environmental performance by institutions (Margolis & Walsh, 2003; Orlitzky, 2001). Considering the previous studies, this study inherits five control variables named bank size, loan ratio, risk, debt ratio and overhead expenses. For controlling bank size, the log of total assets is considered as the proxy since it possesses a major impact (Gorton & Schmid, 2000). Following previous studies, capital ratio, which is found by calculating equity capital over average total assets (Simpson & Kohers, 2002), indicates higher profitability with less external funding when the capital ratio is high (Kosmidou, 2008). Loans are the prime bases of revenue for the traditional bank in which it is calculated using average total loans divided by average total assets (Simpson & Kohers, 2002). Moreover, risk, which is found by calculating long-term asset over total assets (Waddock & Graves, 1997), affects the financial performance.

6.3. Empirical Model

Since the study is based on the panel data, this study employed the Pooled Ordinary Least square method (OLS). After considering the existing literature, the following models have been developed to justify the hypotheses formulated above:

Model (1):

$$ROAA = \alpha + \beta_1 EARS + \beta_2 Size + \beta_3\ Cap.\ ratio + \beta_4 Loan\ ratio + \beta_5 Debt\ ratio + \beta_6 Overhead\ exp. + \varepsilon$$

Model (2):

$$ROAE = \alpha + \beta_1 EARS + \beta_2 Size + \beta_3\ Cap.\ ratio + \beta_4 Loan\ ratio + \beta_5 Debt\ ratio + \beta_6 Overhead\ exp. + \varepsilon$$

Model (3):

$$EPS = \alpha + \beta_1 EARS + \beta_2 Size + \beta_3\ Cap.\ ratio + \beta_4 Loan\ ratio + \beta_5 Debt\ ratio + \beta_6 Overhead\ exp. + \varepsilon$$

Model (4):

$$PM = \alpha + \beta_1 EARS + \beta_2 Size + \beta_3\ Cap.\ ratio + \beta_4 Loan\ ratio + \beta_5 Debt\ ratio + \beta_6 Overhead\ exp. + \varepsilon$$

where α, β_1, β_2, β_3, β_4, β_5, and ε represent intercept, the impact of environmental accounting reporting score, the impact of size, the impact of capital ratio, the impact of loan ratio, the impact of overhead expense, and error term respectively. Above models are tested adopting diagnostic tests such as normality test, VIF to ensure the validity of models.

7. EMPIRICAL FINDINGS AND DISCUSSION

7.1. EARS Based on Annual Reports

The sample of 25 listed companies of the banking industry from DSE was studied (shown in table 3) via their sustainability reports and annual reports wholly. Here, Bank Asia ranked highest in the ranking with 86.67% voluntary disclosure as well as 100% disclosure in 2016 and 2013. On the other hand, Pubali Bank ranked the least for 11.11% environmental accounting disclosure where there was no disclosure in 2012 and 2013. From the table, 76% of the sample company reports above 50% environmental accounting practices in the annual reports. This is a positive indication towards environmental accounting reporting (Islam *et al*., 2012).

7.2. Descriptive Statistics and Correlation Matrix

Table 4 represents the descriptive statistics of the model formulated including both dependent and independent variables with 125 observations. From table 4, the mean value of ROAA is 0.0198636 with a standard deviation of 0.0064154. It shows that the companies are getting a stable ROAA as the standard deviation is very low. Another dependent variable ROAE, used in this study, has a mean value of 0.2431578 and a standard deviation of 0.0726804 respectively. Dependent variable EPS and Profit margin have a mean value of 2.898 and 1.930543 respectively. The average EAR disclosure level is 10.336. The highest standard deviation of EAR signifies the vulnerability of EAR disclosure. Among the control variables, cap ratio, loan ratio, and overhead exp. have low standard deviation which indicates that the industry is competitive.

Pooled Ordinary Least Square (OLS) method has been carried out to test the formulated hypotheses. Skewness and kurtosis tests have been applied to confirm the data normality. Because of having outliers, some data are not normally distributed. For normalization, this study winsorizes the data as winsorized regressors are more robust to outliers comparing to others (Artiach *et al.,* 2010, p. 40). In table 5, the results of the skewness and kurtosis test show that data are normally distributed. VIF and Pearson correlation matrix has been done to the presence of multicollinearity among the independent variables adopted. From table 6, it is found that independent variables do not possess any multicollinearity as the highest acceptable value is 10. In the below data, the highest multicollinearity is 1.439, and the lowest is 1.091.

From the table 6, it is found that EAR and PM inherits a positive relationship which is statistically significant at 0.05 level. Thus, the null hypothesis H4 can be rejected. The correlation coefficient value is 0.190 which indicates the positive relationship between EAR and PM. Moreover, there is a mixed effect of the EAR on other Dependent variables. All other dependent variables have a negative correlation coefficient with the EAR as the values of ROAA, ROAE and EPS are -.078, -.090 and -.060 respectively. But these negative coefficients are not statistically significant at the level of 0.05. So, the null hypothesis H4 is rejected, and the alternative hypothesis is accepted.

7.4. Multiple Regression Analysis

Multiple regression analysis has been adopted to justify the formulated hypotheses. From model 1, it is found that the F-statistics is 5.406 which is valid at 0.01 level of significance. The value of R^2

Table 3. Total EARS in 18 categories from 2012 to 2016

Banks Name	Environment Accounting Reporting Score					Percentage (%)
	2016	2015	2014	2013	2012	
AB Bank	16	14	14	11	9	71.11
Al-arafa Bank	6	8	10	8	10	46.67
Bank Asia	18	14	14	18	14	86.67
BRAC Bank	11	9	9	10	6	41.11
City Bank	10	11	11	11	11	60
Dhaka Bank	11	11	12	13	11	64.44
Dutch Bangla Bank	12	11	7	13	13	62.22
Eastern Bank	13	12	9	11	12	63.33
IFIC Bank	3	11	4	14	11	47.78
Islami Bank	14	14	15	14	16	81.11
Jamuna Bank	15	11	11	10	9	62.22
Mercantile Bank	11	11	12	9	6	54.44
Mutual Trust Bank	9	13	2	12	9	50
NCC Bank	13	15	14	14	13	76.67
One Bank	9	7	7	5	4	35.56
Premier Bank	9	9	9	9	9	50
Prime Bank	16	14	16	6	14	73.33
Pubali Bank	4	5	1	0	0	11.11
Shahjalal Islami Bank	9	7	8	8	8	44.44
Social Islami Bank	14	13	14	13	13	74.44
Southeast Bank	12	9	11	10	7	54.44
Standard Bank	9	10	11	7	12	54.44
Trust Bank	9	10	13	14	16	68.89
UCB Bank	12	14	12	10	10	64.44
Uttara Bank	7	4	3	4	7	27.78
Average	11.04	10.08	10.24	10.2	10.52	58.76

Source: Developed by Authors.

states that 21.6% variation in ROAA can be clarified by all the independent variables of the model. Among the control variables, Cap. the ratio has a statistical relationship which is significant at 0.01. As EAR doesn't have any statistical association with ROAA, we cannot reject the null hypothesis H1. In the case of model 2, independent variables can clarify 28.8% variation of financial performance. The F-statistics is not significant as its p-value is greater than 0.1. Among control variables, cap. ratio and loan ration have a significant impact over ROAE. On the other hand, size, debt. Ratio and overhead ratio have an insignificant impact over ROAE. As the p-value of the EAR is higher than 0.1, we cannot reject the null hypothesis H2. In model 3, size and overhead exp. have a positive association which is significant at 0.01 level of significance. Cap. ratio, loan ratio, and debt ratio do not have any significant impact on dependent variable EPS. The null hypothesis H3 cannot be rejected as EAR doesn't have a significant impact over EPS. The independent variables of the model 4 can explain

Table 4. Descriptive statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
ROAA	125	.0198636	.0064154	.0024766	.0358802
ROAE	125	.2431578	.0726804	.0561041	.426349
EPS	125	2.898	1.998239	.55	15.1
Profit Margin	125	1.930543	.9782938	.1827	5.33891
EAR	125	10.336	3.643253	0	18
Size	125	5.20571	.4495153	4.403498	7.337831
Cap. ratio	125	.1656108	.0351589	.0157976	.2759348
Loan ratio	125	.618882	.0769848	.0641426	.7334136
Overhead exp.	125	.0459067	.0133074	.0035731	.0874108
Debt ratio	125	.4714364	.1372628	.0490163	.6822069

Table 5. Skewness and Kurtosis statistics

Variable	ROAA	ROAE	EPS	PM	EAR	Size	Cap. ratio	Loan ratio	Overhead exp.	Debt ratio
Skewness	-.157	-.066	.077	1.068	-.281	.462	-.051	-.431	.578	-.550
Kurtosis	.222	-.177	-.818	1.260	-.408	-.130	2.660	-.076	1.005	-.470

Table 6. Correlation and multicollinearity statistics

VIF ROAA ROAE EPS PM EAR Size Cap. Loan Overhead Debt ratio ratio ratio ratio
ROAA 1
ROAE .767** 1
EPS .624** .**664**** 1
PM .518** .**437**** .**585**** 1
EAR 1.102 -.078 -.090 -.060 .**190*** 1
Size 1.267 .012 .054 .335 .**756**** .**194*** 1
Cap. ratio 1.091 .**423**** -.**214*** .005 .140 .017 -.059 1
Loan ratio 1.258 .**225*** .050 -.091 .**212*** .118 .080 .**201*** 1
Overhead ratio 1.265 .057 .002 .**317**** -.082 -.**224*** -.102 .101 -.094 1
Debt. Ratio 1.439 .110 -.051 .**240**** -.**247**** .044 -.**306**** .**223*** .**346**** -.**284**** 1

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

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

66% variation in PM. Among control variables, size, cap. ratio and loan ratio has a significant impact on dependent variable PM at 0.01 and 0.05 level of significance respectively. Overhead exp. and debt ratio have an insignificant impact on the PM.

Table 7. Multiple Regression Analysis

Dependent	ROAA (Model 1)		ROAE (Model 2)		EPS (Model 3)		PM (Model 4)	
	Coef.	*t* value	Coef.	*t* value	Coef.	*t* value	Coef.	*t* value
EAR	.000	-1.431	-.003	-1.325	-.030	-1.314	-.001	-.084
Size	.000	.136	-.002	.119	1.035***	4.439	1.959***	11.797
Cap. Ratio	.078***	4.990	-.431**	-2.263	1.348	.615	6.198***	3.971
Loan ratio	.020*	.176	2.33*	1.798	-1.060	-.710	2.418**	2.276
Overhead exp.	.020	.041	2.47	.453	19.120***	3.041	2.174	.486
Debt. Ratio	.000	-.076	-.015	-.251	.113	.169	-.373	-.485
R	.464		.288		.479		.812	
Adjusted R^2	.216		.083		.229		.660	
F-statistics	5.406***		1.776		5.849***		38.1***	

* p < 0.10, ** p < 0.05, *** p < 0.01

8. CONCLUSION

This study has been performed to figure out the effect of EAR practices on the financial performance of the banking industries of Bangladesh. Most of the companies of the banking industry are contributing to preserving the environment as per the guidelines of Bangladesh Bank. The results of this analysis indicate that there is a significant correlation between profit margin and environmental accounting reporting practices on the annual report. It supports the hypothesis that more EAR disclosure will enhance the profit margin. It might be because of cost reduction resulting from preferring environmental friendly investment. This outcome is supported by Perry *et al*., (2001) and Islam *et al.,* (2019) as the environmental improvement would help to gain profit from the investment. But, an insignificant association is found between EAR practices and other dependent variables named ROAA, ROAE, and EPS (Norhasimah *et al.,* 2016). The regression model finds no effect of EAR practices on the financial performance of the banking companies in Bangladesh.

Developing country, like Bangladesh, must bear huge cost because of the pollution-related diseases every year. Moreover, in Bangladesh, 80% of people still rely on environmental resources, which indicate no sustainable development is possible without protecting the environment (Belal *et al*., 2015). So, Bangladesh is subject to investigation of environmental impact as industrialization is being carried out all over the country. Although the average rate of environmental reporting is still below standard in Bangladesh compared to developed countries, it is increasing rapidly as Bangladesh Bank has imposed guideline for statutory reporting of sustainability. Organizations are also facing stakeholders' pressure to disclose information.

This study will be good literature for environmental accounting reporting disclosures, as very few empirical researches have been done on Bangladesh using multiple regression analysis. Control variables are also used to rationalize the effect. Moreover, four different dependent variables like ROAA, ROAE. EPS, and PM have been used to consider the impact of EAR disclosure on both market-based and accounting-based return of the bank. Winsorization is used to remove the outliers existed in data.

The study inherits some limitation as the annual report is used to measure the environmental disclosure excluding other environmental disclosure in a separate statement. It is suggested to analyze another separate statement if report such as sustainability report available. Furthermore, the study

focused only on the listed companies under DSE. So, further research can be done including both listed and unlisted companies to accurately generalize the findings.

Moreover, this study uses ROAA, ROAE, EPS, and PM as dependent variables, which are based on accounting ratio, to represent the financial performance. Financial performance can be measured using various indicators, but the return on asset (ROA), return on equity (ROE), earnings per share (EPS), profit margin (PM), cash flow and operating profit are the most commonly used variables. So, other variables can be adopted to get more favourable findings from the study.

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APPENDIX 1

Table 8.

Selected Banks of DSE for the Sample		
AB Bank	One Bank Limited	Southeast Bank Ltd.
Trust Bank Limited	Standard Bank Limited	Eastern Bank Ltd.
Al-Arafah Islami Bank Ltd	IFIC Bank Ltd.	Premier Bank Ltd.
Bank Asia Ltd.	Uttara Bank Limited	Dhaka Bank Ltd.
Shahjalal Islami Bank Ltd.	United Commercial Bank Ltd	The City Bank Ltd.
Dutch-Bangla Bank Ltd.	Social Islami Bank Limited	ICB Islamic Bank Ltd.
Jamuna Bank Ltd.	Mutual Trust Bank Ltd.	Mercantile Bank Ltd.
NCC Bank Ltd	Prime Bank Ltd.	EXIM Bank
Islami Bank Bangladesh Limited		

Source: Sample selected from DSE

APPENDIX 2

Table 9.

EAR Code No.	EAR Measurement Category	EAR Code No.	EAR Measurement Category
C1	Air pollution and Carbon Management	C10	Tree Plantation
C2	Water Pollution Management	C11	Training on Environment Management System
C3	Waste Management	C12	Training on Environment Management System
C4	Renewable Energy	C13	Green Marketing
C5	Energy Saving	C14	Green Finance
C6	Environmental Risk Management Strategy	C15	Online Banking
C7	Award for Environment Management	C16	Green Branch
C8	Sustainable Finance Unit	C17	Sector Specific Policy
C9	Green Banking Policy	C18	Green Products

Source: Masud et al. (2017) & author's own compilation

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