Impact of Financial Performance on Green Banking Disclosure: Evidence from the Listed Banking Companies in Bangladesh

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Abstract

This paper examines the impact of green banking disclosures on the quality of financial performance over thirty listed banks of the Dhaka Stock Exchange. Time-series data through the year 2014 to 2017 have been scrutinized, out of which we have selected 70 effective samples because of the availability of the green banking disclosures. Multivariate analysis has been conducted where the spending on green banking is used as a dependent variable, the proxy variables of green banking disclosures. As the independent variable of financial performance, we have used three dimensions: profitability, liquidity, and solvency. The ROA, LR, and DAR have been used as proxy variables simultaneously. We found that green banking disclosures and ROA have a considerable positive relationship. In contrast, the other two financial performance variables, LR and DAR, have no statistically significant relationship with green banking spending. The study's findings will encourage the highly profitable listed banks to invest more in greening their activities, ultimately leading to sustainable development in this sector.

Keywords

Green Banking Disclosures, Financial Performance, Dhaka Stock Exchange

1. Introduction

Global warming has gained much attention recently and is regarded as a phenomenon common to almost all countries. This issue is mostly caused by irresponsible environmental treatment and reckless global industrial competition [49]. Moreover, GHG emissions are blamed in many nations for altering natural ecosystems and creating severe repercussions [9], a global response is required [9]. In this regard, significant progress has been made in recent years in terms of policy development and execution to focus on firms' environmental responsibility for GHG emissions, regardless of industry or country [2, 12, 47]. Regulators in developing economies like China, Brazil, India, and Bangladesh, for example, have reacted to the threat. The Brazilian central bank adopted new regulations in April 2014, mandating banks to employ environmental and social risk strategies starting in 2015. Since the 2008 Global Financial Crisis (GFC), banking authorities and policymakers have understood that the banking industry's long-term success is dependent not only on the smooth operation of financial systems but also on the effective management of environmental hazards [31, 50]. As a result, it is plausible to conclude that commercial banks can play a key role in developing "Green Banking Practices" to reduce environmental hazards. The Bangladesh Bank, the country's banking regulator, issued a series of initiatives known as the green banking guidelines in 2011, directing all commercial banks to adopt and implement this strategy in their daily operations [4]. In response, several literary works were carried out by authors, determining the status of
implementation of green banking guidelines. Lalon [29] studied green banking policy guidelines and provided an overview of adoption by different banks. Masukujjaman & Aktar [30] studied the current status of implementation of green banking policy and ranked the top ten banks in their literary work. Green banking is a recent worldwide developing concept, and there is a huge demand for further exploration regarding green banking practices [42]. However, there is a lack of literary work on the relationship between financial performance and green banking disclosures in Bangladesh. In this article, we tried to fill that gap.

Green banking disclosure and financial performance are very meticulously related [5]. Environmental liability has become a major issue in today's society, with many stakeholders expecting it [13, 16, 27, 43]. Firms that do well in the environment can save money on operations, enhance resource access, and reduce personnel turnover [7]. Furthermore, firms with acceptable environmental performance can benefit from rising demand for environmentally friendly goods and services, opening new market prospects [7, 36]. According to McKendall et al. [37] and Kock and Santaló [28], successful firms based on their return on assets (ROA) have stronger environmental policies since they are more prone to bear high environmental compliance costs. Clarkson et al. [14] discovered a relationship between debt levels and environmental disclosures, meaning that enterprises with greater debt performed better in the environment. Leverage is calculated by dividing total debt by total assets. Roberts [45] and Cormier and Magnan [15] indicate that minimal systemic risk boosts a firm's ability to pursue social responsibility initiatives due to more consistent economic performance. As a result, we've decided on return on asset, debt-to-asset ratio, and liquidity-to-asset ratio as green banking spending metrics.

The study's objective is to assess the impact of green banking disclosures on the quality of financial performance. We have considered the selected samples' profitability, liquidity, and solvency to measure the financial performance. Moreover, to measure the green banking disclosures, we have used the spending on green banking scaled by the total expenses of the selected sample. After the successful completion of the study, the banking industry will get a clear picture of the impact of green banking disclosures on the degree of profitability, liquidity, and solvency. The study's findings will provide a cornerstone for corporate people to invest more in greening their activities. The relevant literature is explained in the latter part of the study, provided the hypothesis investigated in the study is true. The study's methodology is explained in the third section of the paper. The study's fourth component includes an analysis and discussion of the findings, with the final piece focusing on green banking spending and financial success.

2. Materials and Methods

2.1. Literature Review and Hypothesis Development

2.1.1. Return on Asset and Green Banking Spending

The adoption of eco-friendly practices and reducing carbon footprints related to banking operations are referred to as "green banking." It is an attempt not to harm the environment through banking activities. In 2011, the Bangladesh Bank, Central Bank of Bangladesh, designed a framework for green banking policy and strategy, known as the green banking guidelines, to safeguard the environment and guarantee that banking practices are sustainable [3]. These guidelines will be implemented in three phases with specific deadlines. Phase -2 of the Green Banking Policy and Strategy framework [3] requires listed banks to make disclosures to the activities related to green banking. The promotion of environmentally friendly practices and reducing carbon footprints related to banking activities is referred to as green banking. It is an endeavor to ensure that banking activities do not hurt the environment. Green Banking Policy and Strategy Framework, often known as the green banking guidelines, was developed by the Bangladesh Bank, Central Bank of Bangladesh, in 2011 to safeguard the environment and promote sustainable banking operations [3]. These rules will be implemented in three stages, each with its deadlines. Phase 2 of the Green Banking Policy and Strategy Framework [3] mandates that listed banks disclose their green banking efforts. Financial performance refers to a company's ability to manage assets and make profits. [21, 32, 34]. The term is simply a general measure of the overall health of an organization where the performance of an organization over a period of time and the position at a particular date is measured. Different measures are used to assess financial performance, including a measure for profitability, a measure for liquidity, and a measure for solvency. The return on assets assesses profitability, return on equity, and operating profit margin, and it determines how profitable a company can be with its resources [33, 36, 39]. On the other hand, liquidity refers to a company's ability to pay its short-term commitments when they are due, as measured by current ratios. Solvency, which is also a measure of financial performance, assesses a company's ability to meet all of its financial commitments if all of its assets are sold, as well as its ability to continue operating in a viable manner even in the face of financial difficulties [1, 39].

H1: Return on Asset significantly influences the green banking spending.
2.1.2. Debt Asset Ratio and the Green Banking Spending

Several studies have been carried out to determine whether environmental regulations or environmental performance impact a company’s financial performance. Porter [40] claimed that the benefits of environmental management outweigh the expenses and stricter administrative requirements that will lead to innovation in his famous "win-win" argument. Following that, Porter & Linde [41] elaborated on the idea, claiming that environmental restrictions may lead to inventions that would benefit and balance the cost of complying with environmental regulations. As an interpretation for relating environmental and company performance, Mark D. Hanna [23] produced a conceptual study that indicated increased customer expectations for "environmentally friendly" goods and services. They also debated the reduction of waste, such as drainage and rubbish, to save money. Many of these studies lack empirical evidence of a link between environmental performance disclosures and company performance. Several authors have investigated the relationship between environmental performance and a company's bottom line. Freedman and Jaggi [20] used the percentage change in three pollutant measures and four accounting ratios as empirical proxies to examine the long-term link between environmental and economic performance. Ullmann [48] also provides a descriptive analysis of previous social-responsibility studies, finding mixed empirical results for pair-wise associations between economic performance and environmental performance, environmental disclosure and environmental performance, and economic performance and environmental disclosure.

On the other hand, Jaffe et al. [26] indicated that this positive association between environmental and financial performance coexists with other points of view, claiming that improving an enterprise's environmental effect leads to a decrease in profitability. It's also been stated that complying with environmental standards costs a lot of money, decreasing a company's ability to compete. A significant link was discovered between environmental proactivity and firm performance [38]. However, an empirical assessment of the impact of environmental performance on financial success in the Indian banking sector Rajput et al. [44] found no link between environmental and financial performance.

H2: Debt Asset Ratio significantly influences green banking spending.

2.1.3. Liquidity and the Green Banking Spending

Liquidity refers to a bank's ability to meet debt obligations when they become due without incurring unacceptable losses [6]. The liquidity ratio is concerned with how bank runs occurred during the financial crisis [17]. The European Central Bank explains that a bank's performance is defined as its ability to generate sustainable profitability, which is necessary for banks to continue operating and for stockholders to receive fair returns; and it is also necessary for supervisors, as it guarantees more resilient solvency ratios, even in a riskier business environment. Studies have found a link between environmental sustainability and financial success, such as a bank’s liquidity or solvency [22, 24]. There are a few instances where implementing a green management system has resulted in cost savings, increased organizational solvency, increased bond value, and so on [25]. Green banking, on the other hand, raises the organization's running costs because it requires specialized personnel, skills, and knowledge because of the consumers it serves. Mortgage officers, for example, must have additional knowledge and training in working with green banking and consumers [10]. We have assumed the following hypothesis based on the above discussion:

H3: Liquidity Ratio significantly influences the green banking spending.

2.2. Sample Design

The banking sector of Bangladesh is selected as a sample of precisely 30 listed banks under the Dhaka Stock Exchange. The last four years' data have been collected where there are 120 samples available from which 70 effective samples are being chosen. Others are not taken because of the unavailability of green banking spending. The years before 2012 were not taken because of starting the green banking phase by Bangladesh Bank launched in 2012. The sampling technique is systematic random sampling.

2.3. Variable Design

The proportion of Green Banking Spending (GBS) is selected as a dependent variable where Green Banking Spending (GBS) is scaled by total expenditure. The GBS has been selected as a proxy of green banking disclosure. The financial performance of the company is the independent variable where Return on Asset (ROA), Liquidity Ratio (LR), and Debt to Asset Ratio (DAR) are selected as a proxy of financial performance. Here Return on Asset (ROA) is Net Profit (before any extraordinary expense) scaled by Total Assets (except preliminary cost). ROA has been chosen because it best represents the profitability of the company. Liquidity ratio (LR) is Current Assets (i.e., Cash in treasury banks and treasury bank balances accounts with other financial institutions, Lending to other banks and financial institutions, Net Investments, and Net Advance) divided by Current Liabilities (i.e., Bills payable, Borrowings, Deposits, and other accounts)) which represent liquidity condition of a business and more liquidity leads to more investment on GDP. Debt to Asset Ratio (DAR) is where Total Liabilities (summation of Current liability and Long term liabilities) are scaled by Total Assets (except preliminary cost), the representation of the solvency of the company.
Our research model is stated below:

\[ \text{GBP} = \alpha + \beta_1 \text{ROA} + \beta_2 \text{LR} + \beta_3 \text{DAR} - \mu \]

Where,

\( \text{ROA} \) = Return on Asset \\
\( \text{LR} \) = Liquidity Ratio \\
\( \text{DAR} \) = Debt to Asset Ratio

**Table 1. Measurement of variables**

| Independent Variables |          |          |          |
|-----------------------|-----------|-----------|-----------|
| Return on Asset       | Here it is calculated by dividing net income by average total assets \([(\text{Opening Assets} + \text{Closing Assets})/2]\) |
| Liquidity Ratio       | It is measured by the current ratio that is current asset scaled by current liability |
| Debt to Asset Ratio   | It is calculated by dividing the total debt by total assets |

| Dependent Variables |          |
|---------------------|-----------|
| Green Banking Spending | The total expenses of the bank scale the total amount of green banking expenses reported in the income statement |

3. Results and Discussion

3.1. Descriptive Analysis

**Table 2. Descriptive Statistics**

|          | Mean | Std. Deviation | N |
|----------|------|----------------|---|
| GBP      | .11  | .05            | 70 |
| ROA      | .41  | .25            | 70 |
| L_R      | 1.30 | 1.08           | 70 |
| DE_R     | .53  | .26            | 70 |

3.2. Correlation Analysis

We have found a moderate positive correlation (0.437)

3.3. Goodness of Fit of the Proposed Model

From the model summary table, the adjusted R square value is 0.19, which indicates the independent variables, namely, Return on Asset (ROA), Liquidity Ratio (LR), and Debt to Asset Ratio (DAR), explain 19% variations of the dependent variable, Green Banking Spending (GBS). From the ANOVA table, we can conclude that the value of the adjusted R square can never be less than zero, which is statistically significant at \( P <0.001 \), representing the goodness of the fit of the proposed model.

**Table 3. Correlation coefficient**

|          | GBP | ROA | L_R | DE_R |
|----------|-----|-----|-----|------|
| Pearson Correlation | GBP | 1.000 |  |  |
|          | ROA | .437 | 1.000 |  |
|          | L_R | .187 | .165 | 1.000 |
|          | DE_R | .202 | .313 | -.399 | 1.000 |

**Table 4. Model Summary**

| Model | \( R \) | \( R^2 \) | Adjusted \( R^2 \) | Std. Error of the Estimate | Level of Significance |
|-------|--------|----------|------------------|--------------------------|----------------------|
| GBP   | .474  | .225     | .190             | .0422956                 | 0.000                |

\( a \) Predictors: (Constant), DE_R, ROA, L_R \\
\( b \) Dependent Variable: GBP

**Table 5. Regression Coefficients**

| Variables | Unstandardized Coefficients | Standardized Coefficients | \( t \) | Sig. | Collinearity Statistics |
|-----------|-----------------------------|---------------------------|--------|-----|------------------------|
|           | B                   | Std. Error | Beta    |       | Tolerance | VIF    |
| (Constant)| .052                | .016      |         | 3.182 | .002       |        |
| ROA       | .066                | .023      | .351    | 2.899 | .005       | .802   | 1.246 |
| L_R       | .009                | .005      | .198    | 1.580 | .119       | .748   | 1.337 |
| DE_R      | .032                | .024      | .172    | 1.319 | .192       | .694   | 1.442 |

\( a \) Dependent Variable: GBP
3.4. Regression and Hypothesis Analysis

From the regression coefficient table, it is found that there are no multicollinearity problems on the independent variables as the tolerance value of each of the independent variables is more variables0 [46]. In contrast, the VIF value of all the independent variables is less than 10. The regression coefficient table found the highest beta value (0.351) for ROA, which is statistically significant at 0.01. This implies that the bank has the highest profitability spending more on green banking and discloses more information on green banking activities. Thus our first hypothesis, Return on Asset (ROA), significantly influences the Green Banking Spending (GBS), has been accepted based on the sample information. McKendall et al. [37] and Kock and Santaló [28] also found that successful firms based on their return on assets (ROA) have stronger environmental policies since they are more prone to bear high environmental compliance costs. For the context of the emerging economy – Bangladesh – without having sufficient financial backings, it is quite impossible to spend more on greening their activities. Thus the findings of the study bring a fruitful conclusion in the context of Bangladesh. It will encourage the listed profitable banking companies (most of the listed commercial banks of Bangladesh are profitable) to invest more in green banking. On the other hand, the other two hypotheses H2 and H3, are rejected, although there exists positive relation, which is statistically insignificant as p>0.1 in each of the cases. Our second hypothesis assuming that Debt Asset Ratio significantly influences green banking spending was rejected as no significant relationship can be found between the debt asset ratio and green banking spending. This finding is also consistent with the findings of Rajput et al. [44] who found no significant relations between environmental and financial performance-based Indian banking sector.

4. Conclusions

As sustainability is one of the crucial issues in the new business world [18, 19, 24, 35], most banks are moving for green banking practices and spend a significant amount of resources. From the literature on green banking, it was found that highly banking institutions tend to disclose more green banking information in their annual reports [26,38] in the context of an emerging economy. Although previous studies showed inconsistent findings [28]. This study added value to the literature on green banking by explaining the relationship between financial performance and green banking disclosures in the context of an emerging economy, Bangladesh. This study measures the success of green banking spending in terms of financial performance. We have used three proxy variables of financial performance: return on assets, liquidity ratio, and the debt-asset ratio of the selected Bangladeshi private bank. It is found that there is a direct connection of green banking spending with return on assets where the other proxy variables have an inverse relation with green banking spending. This finding is consistent with the findings of prior studies [8, 11]. The study's findings encourage more private banks to practice green banking in their organization, as spending on green banking will better financial performance. The study's overall findings will help the banks think about their green banking spending, ensuring environmental sustainability, and the organization's profitability. In this research, it is found that the study has certain limitations; firstly, the study is conducted based on secondary data, which is the organization's annual report, while the primary data may provide an in-depth understanding of the green banking scenario in the developing countries like Bangladesh. Secondly, only a few financial performance indicators are used in this study, providing inflated results.

In contrast, the other financial indicators like market-based and mixed indicators can provide more robustness of the findings. Thirdly, it only considered the cross-sectional data rather than the panel-data study. Moreover, the study is based on quantitative analysis, where the qualitative study was not considered. Several broad areas of studies can explore the following emerging issues – factors influencing the green banking disclosures in emerging economies, the impact of corporate governance on green banking disclosures in developing economies, and the impact of green banking disclosures on the sustainable growth of the banking sectors.

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