

**Environmental reporting and financial performance of listed Islamic Banks in Bangladesh:  
Evidence from Shariah-Based institutions**

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**Abstract**

This study examines the status and financial implications of environmental reporting among listed Islamic (Shariah-based) banks in Bangladesh over the period 2018 to 2024. Using a comprehensive 46-item environmental reporting checklist covering six thematic dimensions, environmental disclosure scores were constructed from annual reports of eight listed Islamic banks, yielding 56 firm-year observations. The grand mean environmental disclosure score stands at 33%, with a gradual upward trend from 30% in 2018 to 35% by 2024, indicating modest but consistent progress in environmental accountability. Panel regression analysis reveals that environmental audit and environmental cost reporting exert a significant positive influence on both return on assets (ROA) and return on equity (ROE). In contrast, environmental investment reporting is found to negatively affect profitability when considered in isolation, suggesting short-term cost burdens associated with green investment activities. Among control variables, firm size relates positively to financial performance while firm age exerts a negative effect. These findings underscore the importance of institutionalizing transparent environmental accountability mechanisms, particularly environmental auditing and cost management practices, as drivers of sustainable financial performance. The study contributes original empirical evidence to the environmental accounting literature within the context of Islamic banking in an emerging economy and carries practical implications for regulators, bank managers, and sustainability policymakers in Bangladesh and comparable jurisdictions.

**Keywords:** Environmental Reporting, Islamic Banking, Financial Performance, Environmental Audit, Environmental Cost Reporting, Shariah-Based Banks, Bangladesh, Sustainability Disclosure, Return on Assets, Return on Equity

**JEL Classification:** Q56, M14, G21

## 1. Introduction

Islamic financial institutions (IFIs) are regarded as having an ethical identity by adopting religion as the core value of their business (Abbas, 2025; Musa, 2018, Aribi, & Gao, 2010, Haniffa and Hudaib, 2007). Like other banks, IFIs' true objective as a financial institution is to promote the country's economic and social growth, but they achieve this within the boundaries of Sharia law (Zahra, Usman, & Shahir, 2025). IFIs are believed to be guided by an Islamic economic perspective that is founded on the notion of social justice and wellbeing of society within the boundaries of Shari'a (Islamic law) (Dusuki and Dar, 2005). Islamic banks have an unquestionable duty to take part in social activities since Islam is built on the equal rights of each individual and ensuring the greatest advantages to society. Through their actions and interactions, every organization contributes both favorably and unfavorably to sustainable development (Baumgartner, 2021). Hence, organizations have a crucial part to play in creating a society, economy, and environment that are more sustainable. Environmental reporting, or the practice of a company reporting publicly on its economic, environmental, and social implications, is one of the instruments they made available (Al Adawiyah et al., 2025; Solihin et al., 2025). The practice of reporting on an organization's economic, environmental, and social performance is known as "environmental reporting". Only a few banks abide by the regulations, even though each bank is required to publish reports in accordance with the global GRI standard. Environmental reporting is increasingly a common practice in business (CIPFA, 2010). According to a KPMG survey, 93 of the top 250 firms in the world reported on their sustainability performance by 2017. Internationally recognized standards, like the GRI Sustainability Reporting Standards, give firms a consistent voice and a trustworthy set of disclosures to use when speaking with the public. Socially responsible organizations, although very few, try to combine non-financial information to improve the quality of reports as part of public exposure to environmental issues. More insight into a company's performance is provided by environmental reporting than by financial records alone (Rupley, & Marshall, 2017).

The term "environmental reporting" can refer to a variety of things, including "non-financial reporting," "triple bottom line reporting," or "corporate social responsibility (CSR) reporting," among others (Gasperini, & Doni, 2018, June). The Bangladesh Bank, the National Board of Revenue (NBR), international aid organizations, and finance corporations are just a few of the regulatory bodies in Bangladesh that are currently emphasizing green accounting procedures and components of sustainable development. The Bangladesh Bank supports businesses in their CSR-related endeavors (Alam, 2025). Bangladesh is one of the most climate change-vulnerable nations in the world (Azam et al., 2022). The growing concern about global warming further intensifies the problem in all business-related areas. Bangladesh's banking industry must adapt to the opportunities and challenges posed by global warming. This problem has recently prompted Bangladesh's banking industry to develop new strategies and products (Moazzem & Jafrin, 2024). Top management of Islamic Shariah-based banks therefore increased their efforts to implement

more organized social accountability by involving stakeholders in their core sustainability activities, which led to the adoption of a full-fledged GRI guideline in accordance with standards in industrialized countries (Hossain, 2012). So, it is crucial to look at the current state of environmental reporting, particularly the environmental component of Bangladeshi banking corporations' financial statements in conformity with GRI requirements as well as other directions from international practices. In recent years, the integration of sustainability considerations into financial decision-making has become a central focus of the global banking sector (Karki, Kumar & Sharma, 2025). Banks are increasingly expected to go beyond profit generation and contribute to environmental protection and sustainable development through transparent reporting and responsible investment practices (Al-Sharif et al., 2020). Environmental reporting, often viewed as part of broader corporate social responsibility (CSR) and environmental, social, and governance (ESG) disclosure, reflects a firm's accountability toward its stakeholders and its commitment to minimizing environmental impact (Clarkson et al., 2008; Qureshi et al., 2022). At the same time, financial performance remains a critical determinant of a bank's survival, competitiveness, and long-term value creation (Sarkar & Searcy, 2016). The interaction between these two dimensions—financial performance and environmental reporting—has thus become a key area of empirical investigation.

Islamic banks, guided by Shariah principles, provide a unique institutional context for exploring this relationship. The foundation of Islamic finance rests on the principles of equity, social justice, and environmental stewardship (Maqasid al-Shariah), which encourage ethical investment and discourage activities harmful to society or nature (Dusuki & Abdullah, 2007; Haniffa & Hudaib, 2007). Unlike conventional banks, Islamic financial institutions are prohibited from engaging in interest-based or speculative transactions and are expected to uphold values that promote social welfare and environmental sustainability (Azid et al., 2020). This moral orientation suggests that Islamic banks may exhibit stronger incentives to disclose environmental information and adopt sustainability-oriented practices. Despite the ethical underpinnings, the empirical evidence on the linkage between environmental reporting and financial performance in Islamic banks remains limited and inconclusive. Some studies suggest that environmental disclosure enhances firm reputation and operational efficiency, leading to improved financial outcomes (Muneer et al., 2025; Alsaadi et al., 2021; Khelif et al., 2015). Others argue that environmental reporting may increase costs and have little short-term impact on profitability, especially in emerging markets (Ahmad & Kamaruddin, 2021). Furthermore, the extent and quality of environmental disclosure among Islamic banks vary significantly across countries, reflecting differences in regulatory frameworks, stakeholder pressures, and corporate governance structures (Sarea & Alsaeed, 2017; Rahman et al., 2022). In this respect, authors initiated this study which aims to explore the status of environmental reporting practice and its influence on financial performance of Islamic banking companies in Bangladesh.

## 2. Literature Review

Setting goals, assessing progress, and promoting sustainability within the company could all be done with the aid of environmental reporting (Lober, Campbell & Jacques, 1997). Internal and external stakeholders will have complete comprehension of the effect of the organization's sustainability performance due to reporting, which can also boost efficiency and enhance performance. The generation of company value may also be aided by Value Relevance (VR) that investigates the relationship between economic data (Byun & Oh, 2018, Lo & Lys, 2000;) and the modified Ohlson (2001) valuation (Houque et al., 2024; de Klerk & de Villiers, 2012; Gasperini & Doni, 2018; ), which takes non-financial information, share price, and stock market returns into account. In line with the global movement for socially responsible investment, traditional economic, environmental, and social facts are utilized to determine investment decisions (Reverte et al., 2016). CSR is a strategy that businesses can use to incorporate social, economic, and environmental concerns into their policies, ethics, decision-making, and actions transparently and responsibly (Rahman et al., 2023). Sustainability reporting is the process of gathering, analyzing, and disseminating sustainability data along with performance metrics and management disclosures, as specified by the GRI Guidelines. It helps stakeholders understand an organization's performance from the perspective of sustainability and consequences. The reporting process emphasizes how closely related financial and non-financial results are ( Zhao et al., 2025). The most extensively used reporting system worldwide is the GRI Guidelines. According to studies, of all international standards established at the global level, the GRI G3 Guidelines are largely considered as the most comprehensive guideline on sustainability reporting as a mechanism for evaluation and communication (India CSR network, 2021) and the economic, social, and environmental performance of a firm was related to its sustainability (Kumar, 2017). Environmental reporting helps in efficient use of resources and in reducing pollution (Agarwal & Kalpaja, 2018; Ahmed, 2012). Research findings indicate that disclosure of environmental information climbed significantly from 16% in 2010 to 83% in 2014, including the highest environmental information disclosure on green banking and energy categories (Masud et. al., 2017). Decreasing the outer carbon discharges, it is necessary to emphasize green banking policies and opportunities, difficulties and advantages. Since there are no widely agreed accounting standards, regulations, laws, etc., environmental accounting is regarded to be inefficient. Environmental accounting implementation is being negatively impacted by a lack of coordination, compulsive instruction, specialized personnel, additional cost involvement, etc. (Hossain & Saif, 2021). Researchers discovered a strong and growing trend in the environmental accounting concept and reporting of listed Bangladeshi banking organizations (Masud & Kim, 2016). Mahmud et al., (2013) found that several initiatives have been taken in our nation to implement green accounting practices like CSR reporting, environmental reporting etc. Besides, companies that practice green accounting get different types of financial benefits such as tax exemption from the government (Makori & Jagongo, 2013). Sustainability-related information or environmental

disclosure in the banking companies' annual reports is not sufficient and the information regarding sustainability reporting did not meet the standard of GRI guidelines (Islam, 2023). From the above reviewed literature, it is evident that no compressive research work is done yet on Islamic Sharia-based Banks in Bangladesh which indicates an important research gap. Considering the research gap and established objectives of the study, this study aims to explore the level of environmental reporting of Islamic Sharia-based banks in Bangladesh and its impact on financial performance.

## 2.1 Environmental Reporting and Financial Performance

Financial performance is the key objective of a business firm to run in the long run, and the financial success of a firm depends on various factors (Pandey, 2005). One of the crucial factors is reporting of firm's financial and non-financial information. Although non-financial information disclosure was not got priorities in the past but now a days it's get focused by business organizations specially banking sector (Perrini, 2006). Moreover, a company's creditworthiness is influenced by its sustainability as part of its financial performance and sustainability criteria increase the credit rating methodology's predictive validity (Weber., 2005). Different research scholars conducted research on these issues and found mixed results. Some researchers found that environmental reporting is positively and significantly related to financial performance (Gatimbu, & Wabwire, 2016; Nor et al, 2016; Lu & Taylor, 2018). Even though these research' findings were consistent with the notion that good environmental and economic performance are complementary, their comparatively low power was caused by small sample numbers and measurement error. As the capital markets become more sensitive to risk, proponents of this complementary association theory contend that fulfilling a firm's social obligations (or externalities) lowers risk (Narver, 1971). Furthermore, if environmental contamination represents resources that have been used inefficiently or insufficiently by the company, eliminating such waste and inefficiencies is advantageous for the environment as well as the business' bottom line (Porter & van der Linde, 1995a, 1995b). But some research findings also indicate negative relationship between environmental disclosure and financial performance of business institutions. Wagner (2005) used fixed effects model and found that there is a negative association between environmental reporting and financial success. Cordeiro and Serkis (1997) found negative nexus between environmental disclosure and profitability of pulp and paper sector. Apart from the above-mentioned findings from research works, there is also evidence of insignificant association between environmental reporting and financial performance. Among the different variables of environmental reporting, it is seen that greenhouse gas emission and water consumption has positive and significant influence on profitability. But waste has negative and significant impact on performance (Zamil& Hassan, 2021). Waddock and Graves (1997) measured financial performance by using three accounting variables: return on assets, return on equity and return on sales providing a range of measures used to assess the financial performance by the investment community. Based on above discussion, we assert that:

H1: There is a significantly positive impact of environmental reporting on financial performance.

## 2.2 Environmental Policy and Financial Performance

Environmental policy has become a crucial determinant of firms' sustainable performance, particularly in industries where environmental impacts are significant. According to the stakeholder theory, organizations are increasingly expected to integrate environmental concerns into their operational and strategic decisions to maintain legitimacy and positive stakeholder relationships (Freeman, 1984). Effective environmental policies may enhance firms' reputation, improve resource efficiency, and attract environmentally conscious investors, ultimately leading to better financial performance (Porter & van der Linde, 1995). Empirical studies also suggest that proactive environmental initiatives can reduce operational costs and create competitive advantages, which positively influence profitability (Hart & Ahuja, 1996; Clarkson et al., 2011). Conversely, some scholars argue that strict environmental regulations and policy implementation may increase firms' compliance costs and reduce short-term profitability (Jaffe et al., 1995). The overall financial outcome of environmental policies thus depends on how effectively firms manage the trade-off between environmental responsibility and cost efficiency. Based on the above theoretical reasoning and empirical evidence, the following hypothesis is proposed:

Ha1: Environmental policy has a positive and significant effect on firm profitability.

## 2.3 Environmental Investment and Financial Performance

Investment in environmental initiatives has become a strategic necessity for firms aiming to achieve both sustainability and profitability. According to the resource-based view (RBV), firms that invest in environmental management systems, green technologies, and pollution control develop unique capabilities that enhance efficiency and competitive advantage (Hart, 1995; Russo & Fouts, 1997). Such investments can lead to cost savings through energy efficiency, waste reduction, and improved resource utilization, which in turn positively affect financial performance (Montabon et al., 2007). From the stakeholder theory perspective, environmental investments also signal corporate responsibility and transparency to stakeholders, thereby improving a firm's reputation, stakeholder trust, and long-term market valuation (Freeman, 1984; Clarkson et al., 2011). Empirical studies provide evidence that firms with higher environmental expenditures tend to experience superior financial returns, as proactive environmental management enhances brand equity, customer loyalty, and access to green financing (Wagner, 2015; Lourenço et al., 2012). However, some studies argue that environmental investments may impose additional financial burdens, especially in the short term, by increasing operational costs and reducing immediate profits (Walley & Whitehead, 1994; Dixon-Fowler et al., 2013). The financial outcome of such investments thus depends on whether firms can convert environmental expenditures into efficiency gains and competitive advantages. So, we postulate that:

Ha3: Environmental investment has a positive and significant effect on firms' financial performance.

## 2.4 Environmental Cost And Financial Performance

Environmental cost refers to the expenditures a firm incurs in managing and mitigating its environmental impacts, such as pollution control, waste treatment, and compliance with environmental regulations. The relationship between environmental cost and financial performance has been widely debated in corporate sustainability literature. According to legitimacy theory, firms incur environmental costs to maintain their social license to operate and demonstrate accountability to stakeholders (Suchman, 1995). These expenditures help firms avoid regulatory penalties, reduce environmental risks, and enhance corporate reputation, which can ultimately translate into improved financial performance (Gray et al., 1995; Cordeiro & Sarkis, 1997). The stakeholder theory also suggests that responsible environmental spending can strengthen stakeholder trust and attract customers, investors, and partners who value sustainability (Freeman, 1984; Clarkson et al., 2011). Empirical evidence shows that firms engaging in transparent environmental cost management practices experience positive financial outcomes over time. By investing in cleaner production, energy-efficient technologies, and effective waste management, firms can reduce long-term operational costs and improve profitability (Klassen & McLaughlin, 1996; Porter & van der Linde, 1995). However, other studies argue that environmental costs may reduce short-term profitability because such expenditures increase operating expenses and capital requirements (Walley & Whitehead, 1994; Konar & Cohen, 2001). Therefore, the influence of environmental cost on profitability depends on how efficiently firms convert environmental expenditures into strategic value and operational gains. So, we assert that:

Ha4: Environmental cost has a positive and significant effect on firms' financial performance.

## 2.5 Environmental External Activities and Financial Performance

Eco-friendly external actions refer to firms' voluntary actions and engagements aimed at improving environmental quality beyond their internal operations—such as community environmental programs, collaborations with NGOs, public environmental reporting, and corporate social responsibility (CSR) initiatives related to sustainability. These external environmental engagements demonstrate a company's proactive environmental stance and its commitment to sustainable development. Grounded in the stakeholder theory and legitimacy theory, external environmental activities are viewed as strategic tools for building trust and maintaining legitimacy among various stakeholder groups (Freeman, 1984; Suchman, 1995). Firms that engage in external environmental initiatives tend to gain social approval, enhance their corporate image, and strengthen relationships with regulators, investors, and customers. This can lead to higher customer loyalty, easier access to capital, and reduced reputational risks—all of which may improve financial performance (Hart, 1995; Porter & van der Linde, 1995). Empirical studies suggest that firms actively involved in environmental disclosure, sustainability reporting,

and community-based environmental programs often outperform their less active counterparts in terms of financial outcomes (Brammer & Millington, 2008; Clarkson et al., 2011). Such engagement signals accountability and transparency, thereby attracting environmentally conscious consumers and investors (Wagner, 2015; Lourenço et al., 2012). Nonetheless, some scholars argue that external environmental activities may not always yield immediate financial benefits, as they can increase administrative and CSR-related costs without guaranteeing direct returns (Walley & Whitehead, 1994). Despite this, the long-term strategic benefits—such as improved reputation, stakeholder support, and sustainable growth—often outweigh short-term expenditures. So, we hypothesize that:

Ha5: Environmental external activities have a positive and significant effect on firms' financial performance.

## 2.6 Environmental Balance Sheet and Financial Performance

The environmental balance sheet represents a firm's environmental assets, liabilities, and provisions that reflect its commitment to environmental responsibility and sustainable resource management. It includes items such as environmental provisions, remediation costs, and investments in pollution control equipment. The integration of environmental information into the balance sheet demonstrates the firm's recognition of environmental aspects as financially material factors that can influence long-term performance (Burritt & Schaltegger, 2010). According to the resource-based view (RBV), firms that strategically manage environmental assets and liabilities gain unique capabilities that enhance their competitiveness and efficiency (Hart, 1995; Russo & Fouts, 1997). Recording environmental assets—such as renewable energy systems or waste treatment facilities—can lead to improved operational efficiency and cost savings. Likewise, properly accounting for environmental liabilities encourages firms to manage risks proactively, thereby strengthening financial stability and investor confidence (Schaltegger & Wagner, 2006). From the perspective of legitimacy theory, disclosure of environmental balance sheet items enhances transparency and accountability, signalling to stakeholders that the firm adheres to sustainability norms and responsible governance (Deegan, 2002). This transparency can improve corporate reputation and attract environmentally conscious investors, customers, and partners, which in turn boosts profitability (Cormier & Magnan, 2015). Empirical studies have shown that firms incorporating environmental elements into their accounting systems tend to perform better financially. For instance, Iatridis (2013) found that environmentally responsible reporting practices improve firm value and profitability. Similarly, Qian, Burritt, and Monroe (2011) noted that environmental accounting helps firms identify cost-saving opportunities and reduce waste, leading to long-term financial gains. Therefore, consistent with these hypothetical perspectives and experimental findings, we hypothesize that:

Ha6: Environmental balance sheet reporting has a positive and significant effect on financial performance.

## 2.7 Environmental Audit and Financial Performance

An environmental audit is a organized, verified, and recurrent evaluation of how precisely an organization's environmental management systems, policies, and operations comply with environmental standards and regulations. For Islamic banks in Bangladesh, environmental auditing aligns with Shariah principles of accountability (*hisbah*) and stewardship (*amanah*), ensuring that financial activities are conducted ethically and sustainably. Environmental auditing serves as a key managerial tool for identifying inefficiencies, preventing environmental risks, and promoting compliance with environmental laws. According to the stakeholder theory, firms are accountable not only to shareholders but also to a broader group of stakeholders—including customers, regulators, and the community—whose interests are affected by the firm's environmental behavior (Freeman, 1984). Conducting regular environmental audits demonstrates transparency and responsiveness to stakeholder expectations, thereby enhancing legitimacy and trust (Donaldson & Preston, 1995). From the resource-based view (RBV) perspective, environmental audits help firms identify and develop valuable internal capabilities by improving resource efficiency and reducing waste, which ultimately enhance operational performance and profitability (Hart, 1995; Klassen & Whybark, 1999). In banking institutions, environmental audits may involve reviewing lending portfolios, investment policies, and operational practices to assess environmental risks and sustainability impacts. This proactive approach reduces environmental liabilities and reputational risks while improving decision-making and resource allocation (Owolabi, 2020). Empirical research supports the notion that environmental auditing positively influences financial performance. For instance, Kaur and Lodhia (2014) found that effective environmental auditing and reporting strengthen corporate reputation and stakeholder confidence, leading to better financial outcomes. Similarly, Iqbal et al. (2019) reported that environmental audit practices enhance firm performance through improved compliance, reduced operational risks, and increased investor trust. In the context of Islamic banks, which operate under principles emphasizing social justice and ethical responsibility, environmental audits reinforce accountability and align business operations with sustainability objectives. Such alignment not only supports environmental protection but also ensures enhanced reputation and stakeholder relations. Based on these arguments and empirical findings, we postulate:

Ha7: Environmental auditing has a positive and significant effect on the financial performance of listed Islamic banks in Bangladesh.

## 2.8 Control Variables and profitability

### 2.8.1 Firm age and financial performance

A firm's age reflects its experience and learning over time . Gunu & Adamade (2015) found an inverse relationship between firm age and financial performance. Evans (1987) found that firms grow at rates which decrease with age at a diminishing pace. Pástor & Pietro (2003) reported that profitability and market-to-book ratios decline with firm age, related to investors learning and

decline in uncertainty. Variability of stock returns is found to negatively relate with incorporation age (Adams & Ferreira, 2005) and with listing age (Cheng, 2008). In this study, listing age of banking companies is considered.

### *2.8.2 Firm size and profitability*

On the relationship between company size and profitability of various companies, several studies have been identified. These studies used a variety of metrics to determine the size of the organization, including total assets, total sales, shareholders, employees, and the number of branches. Net assets have a beneficial impact on financial success, according to Dogan (2013), however there is no correlation between the number of employees and financial performance. Lee (2009) in the United States and Abdessaster (2011) in Tunisia revealed that size has a favourable effect on financial success. Additionally, Niresh & Velnampy's (2014) research demonstrated that the profitability of Sri Lanka's listed manufacturing enterprises is not significantly impacted by firm size. According to Pervan & Visic (2012), firm size has a considerable positive (albeit marginal) impact on firm profitability. Furthermore, they demonstrated how the performance of enterprises is highly influenced by asset turnover and debt ratio, although current ratio was not found to be a significant explanatory variable of profitability. According to Jónsson's 2007 research, size has no significant impact on profitability, regardless of how the two are gauged. For all organizations, a shaky inverse link between size and profitability was seen, nonetheless. Banchuenvijit (2012) investigated the variables influencing the performance of the Vietnamese businesses. According to a study by Hossain and Saif (2021), the financial success of Bangladesh's listed banking institutions is positively correlated with firm size, as measured by total sales, workers, and branches.

## **3. Methodology**

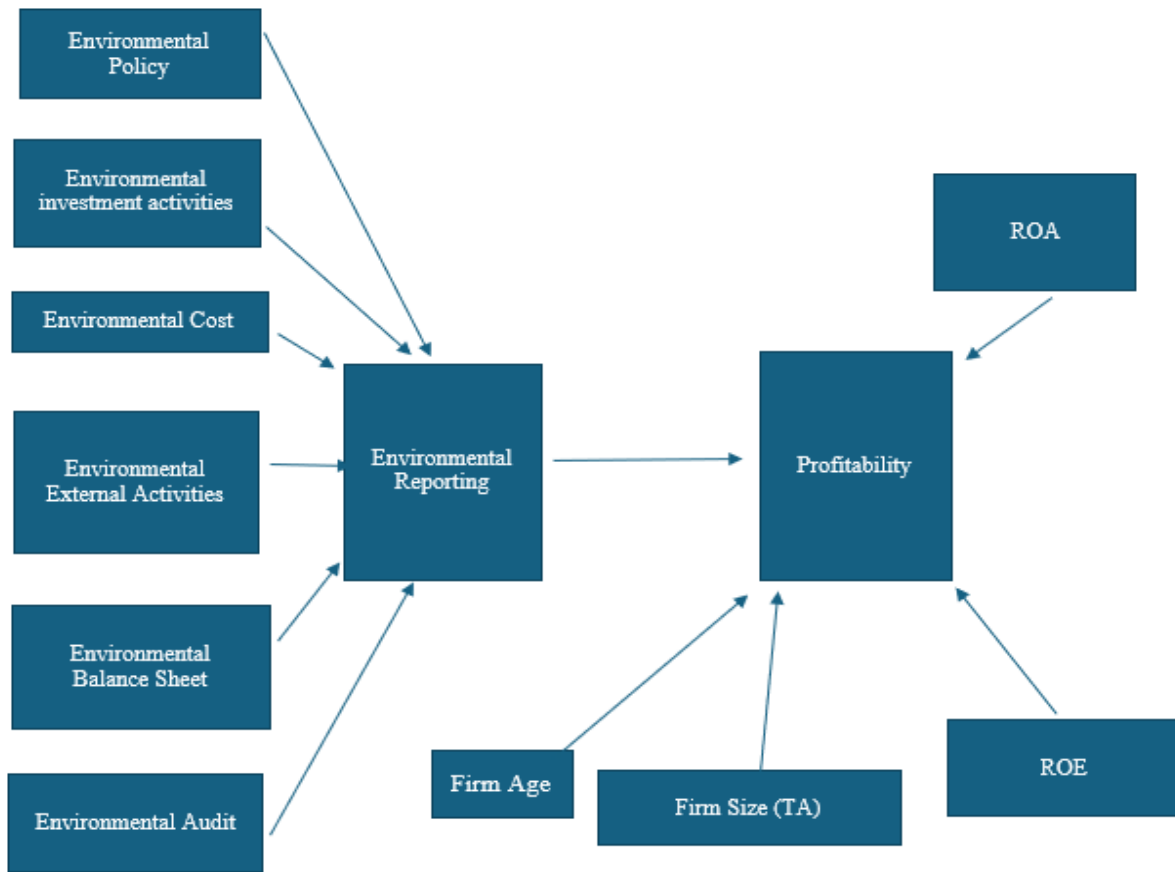
### **3.1 Research Paradigm and Nature of the Study**

This research is based on positivism research paradigm, and is empirical in nature. Very similar to positivism in the sense that it has a strong reliance on objectivity and quantitative methods of data collection, but with less of a reliance on theory (Luft & Shields, 2014).

### **3.2 Population of the Study and Sample Design**

There are 10 listed Islamic sharia-based banks in our country at present enlisted in DSE & CSE. For this study all 8 listed banks were taken and two banks, namely Global Islami Bank (GIB) and Standard Bank Plc (SB) were excluded due to data unavailability from the banks. For the study, annual reports for the period of 2018 to 2024 (a total of 7 years) have been selected. As a result, the total observation of the study is (7\*8) 56 company- year, which is the highest observation of Bangladeshi Islamic banks perspective.

**Figure 1. Conceptual Model**



### 3.3 Instruments: Construction of Environmental Reporting Index

A complete environmental reporting index has been developed based on previous literature review. The environmental reporting index comprises 6 themes with 46 items. Un-weighted index is employed providing each items equal weight to total score. If a banking company (bank) disclosed ER items in its annual report it scored “1” while banks that did not disclose an item scored ‘0’. The disclosure model is additive and un-weighted index are calculated as follows (Hossain &Neogy, 2021):

$$ERD_{jt} = \frac{\sum_{i=1}^n X_{ij}}{n_j} ; \text{Where,}$$

$ERD_{jt}$  = Environmental reporting index of *jth* firm’  
 $n_j$  = Total number of environmental items for *jth* firm,  $n= 46$   
 $X_{jt}$  = 1 if *ith* item is disclosed, 0 if *ith* item is not disclosed.

So that  $0 \leq ERD_{jt} \leq 1$

### 3.4 Measurement of Dependent Variables, Independent Variables and Control Variables

The following Table has described the measurement process of all variables used in this study.

**Table 1. Operational definition/Measurement of Variables.**

Environmental Reporting Index Variable	
$ERD_{jt}$ =	A variable of environmental disclosure index of $j$ firm in the period of $t$ . It is defined as number of environmental items which firm disclosed divided by total environmental disclosure items (46 items).
Env_Policy	A variable of environmental policy information disclosure index of $j$ firm in the period of $t$ . It is defined as number of environmental policy information items which firm disclosed divided by total environmental disclosure items (46 items).
Env_Inv	A variable of environmental investment information disclosure index of $j$ firm in the period of $t$ . It is defined as number of environmental investment information items which firm disclosed divided by total environmental disclosure items (46 items).
Env_Cost	A variable of environmental cost information disclosure index of $j$ firm in the period of $t$ . It is defined as number of environmental cost information items which firm disclosed divided by total environmental disclosure items (46 items).
Env_EEA	A variable of environmental external activities information disclosure index of $j$ firm in the period of $t$ . It is defined as number of environmental external activities information items which firm disclosed divided by total environmental disclosure items (46 items).
Env_B/S	A variable of environmental balance sheet information disclosure index of $j$ firm in the period of $t$ . It is defined as number of environmental balance sheet information items which firm disclosed divided by total environmental disclosure items (46 items).
Env_Audit	A variable of environmental audit information disclosure index of $j$ firm in the period of $t$ . It is defined as number of environmental audit information items which firm disclosed divided by total environmental disclosure items (46 items).

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### Financial Performance Measures Variables

ROA <sub>jt</sub>	It is defined as Profit after tax (PAT) divided by total assets
ROE <sub>jt</sub>	It is defined as Profit after tax (PAT) divided by Shareholders' Equity.

### Control Variables

F_Size (TA) <sub>jt</sub>	It is defined as the Total Assets.
F_AGE <sub>jt</sub>	It is defined as number of years since firms was listed on DSE.
ε <sub>jt</sub>	A random error of firm j in period t.

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### 3.5 Regression Models

Model 1:  $ROA_{jt} = \beta_0 + \beta_1 ERD_{jt} + \beta_2 F\_AGE_{jt} + \beta_3 F\_Size (TA)_{jt} + \epsilon_{jt}$

Model 2:  $ROE_{jt} = \beta_0 + \beta_1 ERD_{jt} + \beta_2 F\_AGE_{jt} + \beta_3 F\_Size (TA)_{jt} + \epsilon_{jt}$

Model 3:  $ROA_{jt} = \beta_0 + \beta_1 Env\_Policy_{jt} + \beta_2 Env\_Inv_{jt} + \beta_3 Env\_Cost_{jt} + \beta_4 Env\_EEA_{jt} + \beta_5 Env\_B/S_{jt} + \beta_6 Env\_Audit_{jt} + \beta_7 AGE_{jt} + \beta_8 F\_Size (TA)_{jt} + \epsilon_{jt}$

Model 4:  $ROE_{jt} = \beta_0 + \beta_1 Env\_Policy_{jt} + \beta_2 Env\_Inv_{jt} + \beta_3 Env\_Cost_{jt} + \beta_4 Env\_EEA_{jt} + \beta_5 Env\_B/S_{jt} + \beta_6 Env\_Audit_{jt} + \beta_7 F\_AGE_{jt} + \beta_8 F\_Size (TA)_{jt} + \epsilon_{jt}$

Several statistical techniques, including average, standard deviation, minimum, maximum, correlation matrix, regression, multicollinearity, and variance inflation factors, were computed in order to meet the goals of the current study and guarantee the accuracy of the data. Disclosure models have been used for analyzing the data.

## 4. Results and Discussion

To achieve the study's intended objectives, the gathered data is examined in this section. First, an analysis is conducted on the total amount of environmental disclosure made by Bangladeshi listed Islamic banks over the research periods. The theme-wise disclosure is then given. Lastly, the connection between financial performance and environmental reporting level is examined.

### 4.1 Level of Environmental Reporting of Islamic Banks During the Study Periods

Table 1 presents the level of disclosure of environmental information in the annual reports of sharia-based banks in Bangladesh.

**Table 1. Showing the level of disclosure of environmental information by banks**

Bank name	2018	2019	2020	2021	2022	2023	2024	Mean
IBBL	0.35	0.35	0.46	0.52	0.52	0.54	0.52	0.47
FSIBL	0.37	0.35	0.39	0.39	0.39	0.39	0.39	0.38
AAIBL	0.33	0.33	0.33	0.39	0.37	0.37	0.35	0.35
EXIMBL	0.33	0.33	0.37	0.46	0.46	0.41	0.41	0.40
SIBL	0.33	0.33	0.35	0.37	0.39	0.41	0.39	0.37
ICB	0.20	0.20	0.20	0.20	0.22	0.22	0.22	0.21
SOCIAL	0.26	0.26	0.26	0.28	0.28	0.28	0.28	0.27
UBL	0.20	0.20	0.20	0.22	0.22	0.22	0.22	0.21
Average	0.30	0.29	0.32	0.35	0.36	0.36	0.35	<b>0.33</b>

Source: Authors' computation based on sample banks' annual reports

It is seen that the grand mean disclosure of sharia-based banks respect to environmental information is 33%. This study considered 7 (seven) year's annual reports of sample banks starting from 2018. The average disclosure of environmental information from 2018 to 2024 are 30%, 29%, 32%, 35%, 36%, 36% and 35% respectively. Besides, the average disclosures of environmental information by sample banks for seven years are 47% by IBBL, 38% by FSIBL, 35% by AAIBL, 40% by EXIMBL, 37% by SIBL, 21% by ICBBL, 27% by SJIBL and 21% by UBL.

## 4.2 Theme-wise Disclosure of Environmental Information

In this section, the environmental information disclosure is shown by themes. Each Table represents one theme of environmental information.

### 4.2.1 Disclosure of Environmental Policy

Environmental policy is the foundation of a business concern to implement environmental issues by the institutions. In our study, we have adopted seven items relevant to environmental policy. Table 2 shows the average disclosure of this dimension by each sample banks of the study.

**Table 2. Showing the disclosure level of environmental policy theme**

Bank name	2018	2019	2020	2021	2022	2023	2024	Mean
IBBL	0.29	0.29	0.71	0.71	0.71	0.71	0.71	0.59
FSIBL	0.57	0.57	0.71	0.71	0.71	0.71	0.71	0.67
AAIBL	0.29	0.29	0.29	0.43	0.43	0.43	0.43	0.37
EXIMBL	0.29	0.29	0.29	0.43	0.43	0.43	0.43	0.37
SIBL	0.29	0.29	0.29	0.43	0.43	0.43	0.43	0.37
ICB	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
SJIBL	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
UBL	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Average	0.33	0.33	0.40	0.45	0.45	0.45	0.45	<b>0.41</b>

Source: Authors' computation based on sample banks' annual reports

Table 2 shows the level of disclosure of environmental information regarding the environmental policy theme in annual reports of sharia-based banks in Bangladesh. It is seen that the grand mean of environmental policy disclosure in annual reports is 41%. The trend of disclosure of this theme considering the year 2018 to 2024 is upward. More specifically it is seen that the average of reporting of environmental information in 2018 to 2024 is 33%, 33%, 40%, 45%, 45%, 45%, and 45% respectively. Moreover, among the eight sharia-based banks, FSIBL is in the top in reporting environmental policy information followed by IBBL, AAIBL, EXIMBL, SIBL etc.

#### 4.2.2 Disclosure of environmental investment activities (EIA) by Banks

Table 3 presents the disclosure status of environmental investment activities of sample banks of this study. It is seen that on an average 13% of environmental investment activities information has been disclosed by the sharia-based banks in Bangladesh.

**Table 3. Showing the disclosure level of environmental investment activities (EIA) theme**

Bank name	2018	2019	2020	2021	2022	2023	2024	Mean
IBBL	0.14	0.14	0.21	0.36	0.43	0.43	0.43	0.31
FSIBL	0.14	0.07	0.14	0.07	0.07	0.14	0.14	0.11
AAIBL	0.14	0.14	0.14	0.29	0.29	0.21	0.21	0.20
EXIMBL	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
SIBL	0.14	0.14	0.14	0.21	0.29	0.29	0.29	0.21
ICB	0	0	0	0	0	0	0	0
SJIBL	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.04
UBL	0	0	0	0	0	0	0	0
Average	0.09	0.08	0.10	0.14	0.16	0.16	0.16	<b>0.13</b>

Source: Authors' computation based on sample banks' annual reports

The trend of disclosing environmental investment activities information is increasing through the study periods as it is increased from 9% to 16%. Among the samples banks of the study it is revealed the IBBL is at the peak in reporting this them followed by SIBL, AAIBL, WXIMBL, FSIBL. Unfortunately, ICBBL and UBL do not report any information on this dimension.

#### 4.2.3 Level of environmental cost disclosure by banks

Table 4 reveals the disclosure status of environmental cost incurred by the Sharia-based banks in Bangladesh. It is evident that on average 87% of environmental cost information is reported by the sample banks of the study. IBBL, FSIBL and SIBL discloses 100% environmental cost information in annual reports of the banks.

**Table 4. Showing the disclosure level of environmental Cost (EC) theme**

Bank name	2018	2019	2020	2021	2022	2023	2024	Mean
IBBL	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00



FSIBL	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AAIBL	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
EXIMBL	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
SIBL	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ICB	0.67	0.67	0.67	0.67	0.83	0.83	0.83	0.74
SJIBL	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
UBL	0.67	0.67	0.67	0.83	0.83	0.83	0.83	0.76
Average	0.85	0.85	0.85	0.87	0.89	0.89	0.89	<b>0.87</b>

Source: Authors' computation based on sample banks' annual reports; where AAIBL and EXIMBL disclose 83% environmental cost information in their annual reports. UBL and ICBBL report 76% and 74% environmental information respectively.

#### 4.2.4 Disclosure status of environmental external activities (EEA)

Table 5 shows the disclosure level of environmental external activities by sample banks of the study during the period of 2018 to 2024. From Table 5, it is seen that EXIMBL is at the top in disclosing EEA information in annual reports. IBBL is in the second position among the eight banks of the study and on average this company discloses 57% EEA information in annual reports of the study.

**Table 5. Showing the disclosure level of environmental external activities (EEA) theme**

Bank name	2018	2019	2020	2021	2022	2023	2024	Mean
IBBL	0.50	0.50	0.67	0.67	0.50	0.67	0.50	0.57
FSIBL	0.00	0.33	0.33	0.50	0.50	0.33	0.33	0.33
AAIBL	0.50	0.50	0.33	0.33	0.33	0.50	0.33	0.40
EXIMBL	0.50	0.50	0.67	0.83	0.83	0.67	0.67	0.67
SIBL	0.33	0.33	0.50	0.33	0.33	0.50	0.33	0.38

ICB	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
SJIBL	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33
UBL	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Average	0.31	0.35	0.40	0.42	0.40	0.42	0.35	<b>0.38</b>

Source: Authors' computation based on sample banks' annual reports; where AAIBL, SIBL, FSIBL, SJIBL, UBL, ICBBL and UBL disclose EEA information are 40%,38%33%,33%, 17% and 17% respectively.

#### 4.2.5 Disclosure of environmental balance sheet

Table 6 resents the disclosure position of environmental balance sheet by the sharia-based banks in Bangladesh.

**Table 6. Showing the disclosure level of environmental balance sheet theme**

Bank name	2018	2019	2020	2021	2022	2023	2024	Mean
IBBL	0	0	0	0	0	0	0	0
FSIBL	0	0	0	0	0	0	0	0
AAIBL	0	0	0	0	0	0	0	0
EXIMBL	0	0	0	0	0	0	0	0
SIBL	0	0	0	0	0	0	0	0
ICB	0	0	0	0	0	0	0	0
SJIBL	0	0	0	0	0	0	0	0
UBL	0	0	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0

Source: Authors' computation based on sample banks' annual reports

It is seen that no bank discloses over the study period the environmental balance sheet.

#### 4.2.6 Disclosure of environmental audit

In this section, the extent of environmental audit disclosure has been shown.

**Table 7. Showing the disclosure level of environmental audit**

Bank name	2018	2019	2020	2021	2022	2023	2024	Mean
IBBL	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.36
FSIBL	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.30
AAIBL	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.30
EXIMBL	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.30
SIBL	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.30
ICB	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.20
SJIBL	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.30
UBL	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.20
Average	0.28	0.28	0.28	0.29	0.29	0.29	0.29	<b>0.29</b>

Source: Authors' computation based on sample banks' annual reports

From Table 7, it is seen that on an average 29% of environmental audit information is reported by the sharia-based banks in Bangladesh. Among the eight banks of our study, IBBL is in the peak in reporting this theme. FSIBL, AAIBL, EXIMBL, SIBL and SJIBL are disclosed with similar portions of environmental audit information. ICBBL and UBL are the least in disclosing banks in reporting environmental audit information under sharia-based banks in Bangladesh.

### 4.3 Environmental Reporting and Financial Performance

Now, we are going to explore the relationship between environmental reporting of sample companies and financial performance. To identify the impact of environmental reporting of banking companies on customer satisfaction, a simple regression model is made where environmental reporting practice, firm age and firm size are independent variables and financial performance proxied by return on assets and return on equity are dependent variables.

#### 4.3.1 Return on assets and Environmental Reporting

The regression line,  $(ROA) = \alpha + \beta_1 (ERDp) + \beta_2 (F\_AGE) + \beta_3(F\_Size)+e$

$$(ROA) = .470+ 5.707 (ERDp) + -.111(F\_AGEp) + 1.22 (F\_Size)+ e$$

Table 8 represents the regression results where return on assets is used as dependent variable and environmental reporting, firm age and total assets are used independent variables.

**Table 8. Regression results: environmental reporting as independent variable**

Model-1	Coefficients <sup>a</sup>					Multicollinearity	
	Unstandardized Coefficients		Standardized Coefficients		Sig.	Tolerance	VIF
	B	Std. Error	Beta	t			
(Constant)	.470	.577		.814	.419		
ERD	5.707	1.874	.414	3.045	.004	.411	2.431
F_AGE	-.119	.015	-.807	-7.818	.000	.713	1.403
F_Size (TA)	1.218E-6	.000	.361	2.441	.018	.348	2.874

N=56; R squared: 0.778; F=26.569, P=.000. Durbin-Watson: 1.723

Dependent Variable: ROA

Source: Authors' computation based on sample banks' annual reports

The model satisfies the assumptions of a valid regression operation as the R-square value, VIF values, Durbin-Watson statistics are within the valid range. The R squared value is 0.778 which indicates that the model can explain 77.8% variability of return on assets. All VIF values are less than 3, which tells that the model is free from multicollinearity problem. Durbin statistic is 1.723 which signals that model is free from autocorrelation of independent variables. The Table shows that the coefficient of environmental reporting is positively and statistically significantly correlated with return on assets of Islamic banks in 1% level of significance. This finding is in line of previous research works conducted by Gatimbu &Wabwire, 2016; Nor et al, 2016; Lu & Taylor, 2018. Besides, the coefficient of firm age is negatively and significantly related to return on assets in 1% level of significance. It indicates that older firms lose their capability of earning day by day (Adams & Ferreira, 2005; (Cheng, 2008). Moreover, the coefficient of total assets is positive and significantly related to return on assets in 5% level of significance.

4.3.2 Return on Equity and Environmental Reporting

Table 9 shows that the environmental reporting is positively and significantly related to return on equity of sample banking companies. Firm age is also significantly related but negatively. The assumptions of regression test are satisfied as the VIF value, Durbin –watson value and R square are within the valid thresholds.

**Table 9. Showing the regression results**

Model 2	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	7.076	3.018		2.344	.023		
ERD	37.570	9.805	.531	3.832	.000	.411	2.431
F_AGE	-.576	.079	-.764	-7.258	.000	.713	1.403
F_Size (TA)	3.683E-6	.000	.213	1.411	.164	.348	2.874

a. Dependent Variable: ROE

Group: 8; Observation: 56, R square: 0.589; Durbin-watson: 1.902; F value: 24.857; P: 0.000

Source: Authors' computation based on sample banks' annual reports

The regression line,  $(ROE) = \alpha + \beta_1 (ERDp) + \beta_2 (AGEp) + \beta_3 (F\_Sizep) + e$

$(ROE) = 7.076 + 37.570 (ERDp) + -.576 (AGEp) + 3.683E-6 (F\_Sizep) + e$

**4.4 Environmental Dimension and Return on Assets**

The regression results of Model 3 reveal that the model is statistically significant, explaining 83.3% of the variation in Return on Assets (ROA) with an F-value of 34.105 (p = 0.000), indicating strong explanatory power.

**Table 10. Regression results of model 3**

Model-3	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	-4.028	.811		-4.967	.000		
Env_Poliicy	-.523	.701	-.065	-.747	.459	.467	2.143
Env_inv	-4.444	1.224	-.410	-3.630	<b>.001</b>	.274	3.652
Env_Cost	11.24	1.046	.106	10.746	<b>.000</b>	.436	2.291
Env_EEA	.132	.570	.019	.231	.818	.523	1.912
Env_Audit	22.154	3.195	.925	6.934	<b>.000</b>	.196	5.106
F_AGE	-.124	.010	-.844	-11.864	.000	.688	1.453
F_Size(TA)	9.578E-7	.000	.284	2.554	.014	.283	3.535

a. Dependent Variable: ROA

Group: 8; Observation: 56, R square: 0.833; Durbin-Watson: 1.210; F value: 34.105; P: 0.000

Source: Authors' computation based on sample banks' annual reports

The Durbin–Watson statistic of 1.210 suggests mild but acceptable autocorrelation. Among the predictors, environmental audit and environmental cost show strong positive and highly significant effects on profitability, implying that banks conducting environmental audits and managing environmental costs efficiently achieve better financial performance. This outcome supports the argument of Porter and van der Linde (1995) and Al-Tuwaijri et al. (2004), who noted that proactive environmental practices can enhance operational efficiency and firm reputation. Conversely, environmental investment has a significant negative relationship with ROA, suggesting that green investments may initially impose financial burdens that outweigh short-term gains, consistent with findings by Zhu et al. (2021) and Hossain and Reaz (2022). Environmental policy and environmental externality disclosure show insignificant effects, indicating that such initiatives may exist in form rather than having substantive financial impact due to weak

enforcement or stakeholder awareness in the Bangladeshi banking context. Additionally, firm age exhibits a negative and significant relationship with ROA, implying that older banks may face structural inefficiencies or reduced adaptability, while firm size exerts a positive and significant influence, reflecting economies of scale and better resource utilization. Overall, the findings highlight that strategic environmental auditing and cost management contribute positively to profitability, whereas excessive or premature environmental investment may reduce financial performance in the short run.

#### 4.4 Environmental Reporting Themes and Return on Equity

The results of Model 4 reveal a strong explanatory power ( $R^2 = 0.829$ ;  $F = 33.327$ ;  $p < 0.001$ ), indicating that environmental and firm-specific variables jointly account for a substantial portion of the variation in return on equity (ROE).

Among the environmental factors, *environmental audit* exhibits a highly significant and positive association with ROE ( $\beta = 0.876$ ;  $p < 0.001$ ), implying that regular environmental auditing enhances banks' operational efficiency, compliance, and reputation, thereby improving profitability (Saeed et al., 2025; Porter & van der Linde, 1995). In contrast, *environmental investment* exerts a significant negative influence on ROE ( $\beta = -0.420$ ;  $p = 0.001$ ), suggesting that heavy green investments may increase short-term costs and reduce immediate financial returns, which aligns with the findings of Horváthová (2012). *Environmental cost* shows a positive and significant effect ( $\beta = 0.208$ ;  $p = 0.025$ ), indicating that efficient management of environmental expenditures can yield economic benefits through improved cost efficiency and stakeholder trust (Hart & Ahuja, 1996).

However, *environmental policy* and *external environmental factors* have positive but statistically insignificant relationships with ROE, suggesting that mere policy adoption or external pressure does not directly translate into improved profitability. Regarding firm-specific controls, *firm age* has a negative and significant effect ( $\beta = -0.834$ ;  $p < 0.001$ ), implying that older banks tend to be less profitable, possibly due to structural rigidities and reduced innovation capacity (Stinchcombe, 1965). Meanwhile, *firm size* is positive but insignificantly related to ROE, indicating limited scale advantages. Overall, the findings highlight that environmental governance mechanisms—particularly environmental auditing—play a vital role in enhancing banks' financial performance in Bangladesh, whereas environmental investment demands strategic alignment to ensure long-term value creation.

**Table 11. Showing the regression results**

Model-4	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	-19.012	4.200		-4.527	.000		
Env_Poliicy	5.479	3.628	.132	1.510	.138	.467	2.143
Env_inv	-23.385	6.337	-.420	-3.690	<b>.001</b>	.274	3.652
Env_Cost	12.491	5.416	.208	2.306	<b>.025</b>	.436	2.291
Env_EEA	-.939	2.951	-.026	-.318	.752	.523	1.912
Env_Audit	107.552	16.543	.876	6.501	<b>.000</b>	.196	5.106
F_AGE	-.629	.054	-.834	-11.599	<b>.000</b>	.688	1.453
F_Size(TA)	2.428E-6	.000	.140	1.250	.217	.283	3.535

a. Dependent Variable: ROE

Group: 8; Observation: 56, R square: 0.829; Durbin-watson: 1.205; F value: 33.327; P: 0.000

Source: Authors' computation based on sample banks' annual reports

## 5. Conclusion

Environmental issues are central in every discipline for ensuring sustainable development. It is observed that banks are showing an emphasis on sustainability disclosure day by day to measure, disclose and be accountable to internal and external stakeholders in terms of governance, economic, environmental and social aspects. This study intends to out the present disclosure trend of environmental information in annual reports of firms. Moreover, the impact of environmental dimensions on financial indicators is also investigated. The study finds that Islamic banks recognize environmental reporting's benefits and are gradually increasing such disclosures over time (Maali et al., 2006; Farook et al., 2011; Aribi et al., 2018). Environmental audits play positive impact on organizational profitability that indicates the necessity of ensuring good governance and better transparency. Environmental cost also positively impacts the banks' returns that implies the economic viability of environmental functions of the firms. It seems that environmental expenditure is not expenditure rather than an investment. The finding of the environmental

investment of the banks results in a bank loss tendency. It indicates that currently banks may be investing in such environmental activities which are not profit oriented. So, Islamic bank needs to be selective to choose best environmental investment opportunities. Investment should be evaluated using structured financial and sustainability criteria to ensure alignment with both environmental goal and profitability. A rigorous pre-investment assessment framework should be institutionalized. This will assist in determining which environmental initiatives yield tangible economic benefits and which may pose a risk of loss. Since some environmental projects may offer delayed financial returns, Islamic banks should establish long-term investment plans with clear performance indicators, ensuring that short-term losses are mitigated. Bank should embedded environmental risk tools within their decision to identify non-viable projects early and allocate resources more efficiently. Improved environmental disclosure can help banks monitor the impact of their investments more effectively. Transparent reporting also builds on stakeholder trust and attracts green-oriented investors. Engaging with environmental experts, government agencies, and Shariah scholars can help banks design environmentally responsible yet financially sustainable investment portfolio. All the regulators as well as civil society should have to come forward to develop an environmental reporting culture. This will ultimately make our beloved world more sustainable; improve governance snags and increase the efficiency and effectiveness of the banking sector of Bangladesh. The study's conclusions add to the library of information already available on environmental reporting in Bangladesh, especially at the managerial tier. Business executives are more equipped to evaluate and spot weaknesses in their present environmental procedures. The study also has significant policy implications, particularly when it comes to tackling the difficulties brought on Bangladesh's poor enforcement of environmental laws.

Despite disseminating fruitful messages about the relationship between environmental costs and Islamic banks' financial performance, the study has few limitations. The secondary data that forms the basis of the analysis may not accurately reflect the strategic or qualitative aspects of Islamic banks, which restricts the generalizability of the findings to other financial environments or countries. Different banks may calculate environmental issues differently, which could result in incorrect data reporting. To capture the strategic and qualitative aspects of environmental initiatives, future research may broaden the scope of this study by including primary data, such as bank manager surveys or interviews. If a large sample of Islamic banks, conventional banks and institutions from other countries were included, the results would be more widely applicable. Furthermore, establishing a consistent methodology for figuring out environmental spending and investments could lessen inconsistencies in bank reporting. Future studies should also look at how regulatory enforcement works, how sustainability initiatives might affect bank performance, and how long-term sustainability initiatives might affect banks' performance, and how long-term environmental spending affects financial performance.

### Conflict of interest

The authors declare no conflict of interest.

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**Appendix A**

**Environmental Reporting Checklist**

Environmental Audit (10)	Internal environmental audit	Choudhury, A. (2002)
	External audit	Choudhury, A. (2002)
	Qualified environmental engineers	Choudhury, A. (2002)
	Legal expertise	Choudhury, A. (2002)
	EMS audit	Choudhury, A. (2002)
	Issue audit	Choudhury, A. (2002)
	Insurance audit	Choudhury, A. (2002)
	TSDF audit	Choudhury, A. (2002)
	Pollution prevention audit	Choudhury, A. (2002)
	Product Audit	Choudhury, A. (2002)
Environmental Investment Areas (14)	Effluent Treatment Plant (ETP)	Masud, Bae & Kim, 2017
	Biogas Plant	Masud, Bae & Kim , 2017
	Solar home systems	Masud, Bae & Kim , 2017
	Solar panel trade	Masud, Bae & Kim , 2017
	Bio-fertilizer plants	Masud, Bae & Kim , 2017
	Tunnel Kilns	Masud, Bae & Kim , 2017
	Installation of Zigzag Kilns	Masud, Bae & Kim , 2017
	Waste and Hazardous disposal Plants	Masud, Bae & Kim , 2017
	Wastepaper recycling plants	Masud, Bae & Kim , 2017
	LED bulb production	Masud, Bae & Kim , 2017
	Safe/clean water supply projects	Masud, Bae & Kim , 2017
	Improved cooking stoves	Masud, Bae & Kim , 2017
	Electricity generation from rice husks	Masud, Bae & Kim , 2017
	Rice bran oil production	Masud, Bae & Kim , 2017

Business area cost

Shil & Iqbal (2005)

Environmental Cost (6)	Upstream and downstream cost	Shil & Iqbal (2005)
	Management activity cost	Shil & Iqbal (2005)
	Research and Development cost	Shil & Iqbal (2005)
	Social activity cost	Shil & Iqbal (2005)
	Environmental damage cost	Shil & Iqbal (2005)
Environmental Policy (7)	Disclosure of environmental concern	Nor M. N et al. (2018)
	Monitoring compliance with policy statement	Nor M. N et al. (2018)
	Environmental Targets/Standards	Nor M. N et al. (2018)
	Structural and responsibility changes in developing environmental sensitivity	Nor M. N et al. (2018)
	Policy regarding environmental Awareness program	Nor M. N et al. (2018)
	Environmental Accounting policy	Nor M. N et al. (2018)
	Anticipated pattern of future expenditure	Nor M. N et al. (2018)
External Environmental Activities (6)	Tree plantation and forestry disclosure	Masud, Bae & Kim , 2017
	Environmental awareness, training & education	Masud, Bae & Kim , 2017
	Climate change & global warming	Masud, Bae & Kim , 2017
	Air pollution reduction	Masud, Bae & Kim , 2017
	Water pollution and control	Masud, Bae & Kim , 2017
	Award and appreciation for environmental initiatives & protections	Masud, Bae & Kim , 2017
Environmental Balance Sheet (3)	Environmental Assets	Hyderaba, R.L (2002)
	Environmental Liabilities	Hyderaba, R.L (2002)
	Green Capital	Hyderaba, R.L (2002)