

Bank performance relation with green banking practices: A study on commercial bank in Bangladesh



^{a,} Tamal Chakrobortty, ^{b,} Anima Karmakar, ^{c, *,} A. K. M. Ashiqur Rahman, ^d Dipika Rani Dobey, ^e Md. Rezwon Tanvir Mim

^{a, b, c} Department of Business Administration, Varendra University, Rajshahi, Bangladesh

ARTICLE INFO	ABSTRACT
Keywords:	This study investigates the relationship between green banking practices and financial performance in Bangladesh's commercial banking sector. Using data from eight commercial
Green finance Firm performance Sustainability AMG analysis	banks listed on the Dhaka Stock Exchange (DSE) over the period 2014–2023, the study employs the Augmented Mean Group (AMG) methodology in STATA-17. Green Finance serves as the dependent variable, while Return on Assets (ROA), Market Value of Shares (MV), Return on Equity (ROE), Operating Cost Ratio (OCR), and Bank Size are the independent variables. The findings reveal a significant correlation between green finance and financial performance, with
JEL: E5, G2	ROE and OCR positively influencing green finance, while MV and ROA show negative correlations. The study underscores the need for proactive green banking policies to drive sustainable financial growth and recommends that financial institutions and regulators strengthen green finance initiatives to enhance economic and environmental sustainability.

I. Introduction

Since green banking is essential to funding economic activity and achieving the goals of sustainable growth and development for the economy, it has drawn interest from all around the world. The nation's monetary authority, Bangladesh Bank, saw the increasing importance of green finance in 2009 and responded by launching green banking projects and releasing green banking guidelines in 2011. An increasing number of financial institutions are taking a more eco-friendly stance by providing cutting-edge services and products that promote greater environmental protection. These situations are referred to as "green banking," "environmental banking," also called "sustainable banking," and the financial institutions that host these incidents are known as "green banks" or "environmental banks" (Sahoo and Nayak, 2011; Mamun and Rana, 2020). People from all over the globe are interested in green banking since it is crucial for supporting economic activity and reaching the objectives of sustainable economic development and progress. "Green banking" has also acquired new popularity in Bangladesh's banking industry.

One definition of "sustainable banking" is "eco-friendly socially responsible banking," that serves as a financial intermediary in funding economic activity and conducts all other operations by achieving goals for a healthy environment for both the current and future generations. In addition to sustainable investment and environmentally friendly daily operations, green banking has been encouraged to incorporate ethical, socially responsible, and corporate social responsibility investments. Once more, Green finance has a significant impact on our long-term sustainability.

Stakeholders now recognize the substantial advantages of sustainable business operations. *Bangladesh Bank defines green finance* as monetary investments carried out by authorized financial institutions (FIs) for environmentally conscious areas/targets that are documented in compliance with the BSEC Rules of 2015 for fields that produce renewable energy, resource and power efficiency, unauthorized use governance and treatment, climate-friendly transportation, etc. (Chowdhury, 2023) Many parties, including those involved in economic activity, are particularly concerned about environmental issues, particularly in the banking industry. Business activities that consider environmental sustainability are encouraged by the phenomenon.

^{*} Corresponding author. E-mail address: tonuchakrobortty@gmail.com (T. Chakrobortty). Received: 31 December 2024; Received in revised from 04 March 2025; Accepted 10 March 2025 https://doi.org/10.58251/ekonomi.1610026

Although banks have shown little impulsive interest in implementing green finance methods, specific financial organizations have adopted the notion of environmentally friendly actions (green banking) through the use of green banking concepts. Generally speaking, a bank is a business that prioritizes making money. Additionally, banks must voluntarily participate in green finance if it substantially impacts their profitability (Azzahra et al., 2023; Chowdhury, 2023). The purpose of this study is to ascertain the extent to which the economic viability of commercial and green finance are associated. According to numerous research studies, traditional and non-traditional banks still need to comply fully with the green/sustainable policy requirements (Hoque et al., 2022; Rajput et al., 2013). Additionally, several studies on Bangladesh had contradictory findings (M. A. Hossain et al., 2020).

We conducted this study on a few Bangladeshi commercial banks, taking into account all previous studies. This study seeks to ascertain the effects of green finance on the financial success of Bangladeshi commercial banks, evaluating whether these impacts are beneficial or harmful. In this study, return on equity, market value of share, return on assets, bank size, and other factors are considered measures of profitability.

1.1 Relevance of the Research

Green funding is essential to move economic activity in an environmentally friendly route. Banks enhance a country's economic and ecological achievements by offering green funding. Cutting expenses is an essential first step in enhancing the financial performance of any company. Green finance is becoming increasingly significant globally, especially in developing countries like Bangladesh. In principle, a favourable correlation exists between financial outcomes and green financing. In addition to their standard business functions, financial institutions have the capacity to play a pivotal role in advancing the shift towards a more sustainable economy through their involvement in green finance initiatives. This study, by exploring the dynamics of green funding, can also serve as a foundational resource for policymakers, lawmakers, and practitioners. It can provide valuable insights that help shape policies that promote green finance, encourage private-sector investment in sustainability, and guide regulatory frameworks. Furthermore, the findings may be useful for emerging scholars seeking to understand the intersection of finance and environmental sustainability. Bank regulators can also benefit from the study, as it offers practical recommendations for developing policies that encourage financial institutions to integrate green finance into their portfolios, fostering a more sustainable and prosperous future for all.

1.2 Research Aim

This study's only goal is to determine whether a bank's performance and green banking initiatives relate to one another.

1.3 Research Queries

This study has tried to answer the following questions:

- a) What relationship does return on asset have with green finance?
- b) What relation does return on equity have with green finance?
- c) What relation does the market value of share have with green finance?
- d) What relation does the operating cost ratio have with green finance?
- e) What relation does market size have with green finance?

1.4 Research Gap

Chowdhury (2023) explores the relationship between green finance and bank performance, focusing on the period from 2014 to 2021. The study employs linear regression and questionnaire analysis to derive its conclusions. Similarly, M. A. Hossain et al. (2020) investigate the impact of green banking practices on financial performance using panel data from 2011 to 2020. While both studies examine similar variables, M. A. Hossain et al. (2020) utilize a panel regression model for their analysis.

In another study, Rabea et al. (2023) examine the relationship between green banking and a firm's profitability and sustainability. Their research highlights the significance of green banking as a catalyst for sustainable growth and a means of mitigating the effects of climate change through a comprehensive literature review.

International studies, such as those by Ramila and Gurusamy (2015) and Chen Tia et al. (2023), also address the connection between green banking and firm profitability, typically using regression analysis or descriptive methods, with a limited set of variables and over shorter timeframes. In contrast, the present study provides a post-COVID pandemic analysis, incorporating a broader range of variables than previous research.

2. Literature Review

Various studies have already explored the role of green banking, green innovation, and other factors in influencing various bank performance indicators (Islam, 2024; Gazi et al., 2024; Islam et al., 2024a, 2024b, 2022, 2023a, 2023b, 2020; Mamun et al., 2022; Islam et al., 2022; Rahman et al., 2020; Rana, 2023).

The term "green banking" refers to a financial approach that prioritizes environmental sustainability by minimizing the ecological footprint of banking institutions through both internal and external operations. It can be examined from two perspectives: as a means of supporting environmentally friendly initiatives and as an overarching banking strategy. The first perspective, known as green transformation, focuses on banks' internal operations by adopting measures that reduce carbon emissions, such as increasing reliance on renewable energy sources. The second approach entails holding companies or customers accountable for environmental impacts through the assessment of environmental risks prior to financing decisions while also encouraging the development of future environmentally focused initiatives and campaigns. (Shaumya and Arulrajah, 2017; Islam and Das, 2013) Delivering the right services to clients is quite inadequate in this era of global warming and climate change; businesses must also adhere to the green banking concept to address environmentally friendly issues, which is an inevitable part of corporate social responsibility (CSR) towards their target customers and in the fight against global warming. Financial institutions ought to actively engage in and champion green banking, not solely for the benefit of the environment but also for advancing sustainable economic development (Hossain and Kalince, 2014).

The impact of ecologically responsible banking practices on monetary results and vice versa has been the subject of prior studies. According to (Chowdhury, 2023; Nanda and Bihari, 2012; Rajput et al., 2013), their research indicates that there is no correlation between a company's financial performance and green banking practices. The insights from the supplementary study provide credence to the idea that green banking has a favourable relationship with the organization's financial performance and its capacity to remain sustainable (Awino, 2014; Brogi and Lagasio, 2019; Zhang, 2018). For the organization to maintain its sustainability and growth trajectory, green banking or a robust green finance policy is an absolute must. Green financing, innovation, and efficient investment in renewable energy can all work together to make this a reality (Mazina et al., 2022).

Regarding sustainable development, "green banking" is the way to go. Sustainable development satisfies present demands without jeopardising the future, claims the World Commission on Environmental and Development (WCED) (Smith et al., 1987). Environmentalist organizations worldwide are hopeful that green financing may pave the way for sustainable development. Consequently, eco-activists pressure the banking sector to adhere to green banking standards to protect the environment strictly (Islam and Hasan, 2015). The green banking approach calls for reducing operational tasks so that regular banking may be done more electronically and with fewer papers. The goal is to get banks on board with green banking initiatives promoted by central banks worldwide so that banks can better understand and implement green economic policies. This is done alongside an increase in the use of electronic records (Siahaan et al., 2021).

Financial institutions must prioritize the effective implementation of green credit, widely recognized as a green financial derivative in numerous countries. Encouraging the activities conducted by green initiatives is crucial. To conserve energy, lower consumption, and safeguard the environment, financial institutions can limit the flow of loan money to environmentally conscious businesses through resource allocation, pricing instruments, and other financial activities.

Again green banking may finance solar, wind, and hydropower projects to promote renewable energy. Green loans and financial instruments from banks promote clean technology adoption and global renewable energy consumption. Green banking promotes energy-efficient technologies and reduces fossil fuel consumption, providing inexpensive, reliable, sustainable, and modern energy for everyone. SDG 17 emphasizes collaborations to achieve these goals, which aligns with green banking. Governments, companies, and financial institutions must work together to achieve sustainability goals. Green bank, government, and international organization partnerships may promote environmentally responsible investing and business practices and sustainable financing. Green banks cooperate with others to improve global sustainability (Utama et al., 2024).

Financial institutions can encourage the transformation and improvement of production processes and structures by limiting money to businesses that produce a large amount of pollution and consume significant energy. For a bank to successfully implement a green credit company, it will require a significant amount of cash, the participation of a large number of human resources, and an acceptable technical infrastructure (Wei and Lin, 2023; Furqan and Sutrisno, 2023). This may be one of the reasons why some banks have a neutral attitude towards environmentally responsible banking operations. This study, like others, aimed to assess the relationship between green finance and bank performance. While some findings indicate a positive correlation, others suggest a negative relationship between environmental initiatives and financial outcomes (Jaffe et al., 1995). Studies like (Ratnasari et al., 2021; Rajput et al., 2013) identify an uncertain correlation between green banking and financial success.

This study contributes to the body of knowledge already in publication on the correlation between banks' financial performance and their environmental policies. It is also meant to highlight to banks the advantages of green banking.

2.1 Theoretical Background

Green finance policy can potentially increase both the magnitude and quality of economic growth; however, this improvement may come at the expense of a slower growth cycle. Green finance policy can also guide the capital flow to high-tech businesses, optimizing and upgrading industrial structure. Improving and implementing green finance policies is crucial for guiding the transformation of the financial sector and services into the actual economy (Ouyang, et al., 2023). Stakeholder theory is related to corporate social responsibility. The impact of primary stakeholders on environmental responsibility was determined to be indirect, while the effect of secondary stakeholders was determined to be significant. When it comes to stakeholder pressure and environmental and social responsibility, adoption barriers act as mediator. When looking at the size of social business firms, there were also notable variances (D'Souza, et al., 2022). The attainment of environmental performance (EP) and corporate social performance (CSP) objectives is greatly aided by stakeholder pressure (SP), both directly and through the adoption of green practices (GPA) (Islam, et al., 2023; Nguyen, 2023). The implementation of green practices can be viewed as a socially responsible approach that enhances a company's performance by reinforcing its commitment to corporate social responsibility (CSR). The adoption and effective application of appropriate green strategies, which are critical for contemporary business operations, also present a challenge for most industries globally (Ibe-enwo et al., 2019). A nation's financial system is a cornerstone in driving its economic growth, yet the process of capital accumulation it enables can sometimes lead to environmental harm. In light of this, South Asian countries are embarking on a transformative journey, shifting their focus towards sustainable development. By reimagining their financial systems, they aim to not only meet global sustainability standards but also pave the way for a green economy that prioritizes eco-friendly practices and long-term environmental stewardship (Jillani et al., 2024).

Central to contemporary global economic discourse is the concept of ESG (Environmental, Social, and Governance), which underscores the paramount importance of social responsibility and sustainability. ESG serves as a comprehensive framework for integrating corporate ethics, sustainability, and accountability into decision-making processes, with the goal of mitigating risks and promoting long-term value creation. As the global economy shifts toward sustainability, the complex interplay between ESG scores, economic development, and banking activities positions ESG as a crucial tool in shaping future financial strategies and offering significant insights for economists, bankers, and policymakers (Norocel and Vierescu, 2024). From both theoretical and empirical perspectives, the relationship between Environmental, Social, and Governance (ESG) policies and financial performance has been extensively examined. A financial institution can signal its commitment to environmental sustainability by integrating environmental considerations into its lending criteria and by providing "green" financial products and services (Menicucci and Paolucci, 2023). ESG policies play a pivotal role in enhancing banks' core competitiveness, particularly in the realm of environmental sustainability. By prioritizing eco-friendly practices, these policies not only contribute to environmental preservation but also strengthen banks' returns on interest-bearing assets, ultimately driving improved financial performance (Ji et al., 2023).

The integration of Environmental, Social, and Governance (ESG) principles with Stakeholder Theory offers a robust and holistic framework for understanding the evolving role of green banking in contemporary finance. ESG policies provide banks with a structured pathway to sustainability, ensuring that environmental and social risks are effectively managed while promoting ethical governance practices. Meanwhile, Stakeholder Theory highlights the importance of balancing the diverse interests of various groups—such as shareholders, customers, employees, communities, and regulators—who have a stake in a bank's operations.

Green banking serves as a practical manifestation of this integration, as it aligns the bank's financial objectives with broader societal and environmental goals. By offering environmentally sustainable financial products and services, such as green bonds, energy-efficient loans, and eco-friendly investment options, banks not only fulfil their environmental responsibilities but also cater to the growing demand from stakeholders for more sustainable and ethical financial practices.

The relationship between ESG policies and bank performance is increasingly evident, with research indicating that banks that embrace green banking tend to experience long-term benefits, including enhanced financial performance, improved risk management, and a stronger market position. Green banking can also foster deeper stakeholder trust and loyalty, thereby enhancing the overall value proposition for investors, customers, and the communities in which banks operate. By incorporating ESG principles into their business models, banks can strengthen their competitive advantage, address stakeholder concerns, and contribute to the creation of a more sustainable, socially responsible, and resilient financial system.

This alignment not only benefits individual banks but also has far-reaching implications for the broader financial ecosystem, driving systemic change toward greater environmental and social responsibility in the sector.

2.3 Research Hypothesis

The following hypothesis is used in this study to determine the answers to the questions above.

- H1: Green finance is not substantially influenced by return on assets.
- H₂: Green finance is not substantially influenced by return on equity.
- H₃ : Green finance is not substantially influenced by market value of share.
- H₄ : Green finance is not substantially influenced by operating cost ratio.
- H₅ : Green finance is not substantially influenced by bank size.

3. Research Methodology

Data and variables, data sources, sample banks, and research design are all discussed in this section.

3.1 Data and Variables

Every year for 10 years, from 2014 to 2023, all commercial banks provided secondary data. Below are all the variables and how they are measured:

Table 1: Variable Identification

Name of the Variable	Symbol of the Variable	Measure
Green Cost	GCOS	It calculates the whole green costs (direct and indirect) that guarantee a more favourable environmental result.
Return on Asset	ROA	Efficiency of resource utilisation to produce revenue.
Return on Equity	ROE	The efficiency with which investors' funds are being managed.
Market Value of Share	MV	The amount that investors and the market at large think a stock is worth.
Operating Cost Ratio	OCR	Company's efficiency by comparing its annual operating expenses to its total assets.
Bank Size	BSIZE	The total assets of each bank expressed as a natural logarithm.

Source: Author's Own Illustration

3.2 Sources of Data

The sample commercial bank's website provided the data needed for the present study.

3.3 List of Sample Bank

Table 2: Bank's Short Name

SI No.	Bank Name	Short Form
01.	Islami Bank Bangladesh PLC	IBBPLC
02.	Dutch-Bangla Bank PLC	DBBL
03.	Sonali Bank PLC	SBPLC
04.	City Bank PLC	
05.	Agrani Bank PLC	
06.	BRAC Bank PLC	
07.	Bank Asia PLC	
08.	United Commercial Bank PLC	UCB
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Sources: Author's Own Illustration

3.4 Research Tool and Design

This study seeks to examine the connection among green expenses, return on equity, market value of shares, return on assets, operational cost ratio, and bank size. Augmented Mean Group Analysis will, therefore, be a convenient way to determine the result. The AMG analysis was applied in this study to determine the impact using the statistical application Stata.

4. Data Analysis

The correlation among green expenses, return on equity, market value of shares, return on assets, operational cost ratio, and bank size is based on the data.

4.1 AMG (Augmented Mean Group) overall analysis

Table 03: Augmented Mean Group Estimation

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Mean Group T	Mean Group Type Estimation			ean Group Type Estimation Number of Observation = 78					
AMG (Augmen	nted Mean Group)		Wald chi2			ald chi2(5) = 17.69			
					Pr	ob. > chi2 = 0.0034			
Variables	Coefficient	Std. err.	t	P value	[95% co	onf. interval]			
Inroa	-2.36429	1.246454	-1.90	0.062	-4.849051	0.1204708			
lnroe	3.026015	1.452878	2.08	0.041	0.129755	5.922274			
lnmv	-0.6477141	0.3184957	-2.03	0.046	-1.282624	-0.0128045			
lnocr	3.394496	1.191565	2.85	0.006	1.019155	5.769837			
lnbsize	0.5554577	0.3463798	1.60	0.113	-0.1350378	1.245953			
cons.	4.624401	1.839487	2.51	0.014	0.9574517	8.291351			

The regression results suggest that lnroe (3.03, p = 0.041) and lnocr (3.39, p = 0.006) have significant positive impacts on the dependent variable, implying that an increase in these variables is associated with a meaningful increase in the outcome. Lnnw (-0.65, p = 0.046) has a statistically significant negative effect, indicating that as lnmv increases, the dependent variable decreases. Inroa (-2.36, p = 0.042) is marginally significant at the 10% level, suggesting a potential negative influence, though it does not meet the conventional 5% threshold for significance. Lnbsize (0.56, p = 0.113) has a positive coefficient but is not statistically significant, meaning its impact on the dependent variable is uncertain. The constant term (4.62, p = 0.014) is statistically significant, indicating that even when all independent variables are zero, the dependent variable retains a baseline value. The 95% confidence intervals further confirm the reliability of these estimates, as they provide the range within which the true coefficients are likely to fall. Overall, the model highlights the key drivers of the dependent variable, with lnroe, lnocr, and lnmv playing significant roles, while inroa is marginally influential and lnbsize lacks strong statistical backing.

4.2 AMG (Augmented Mean Group) Individual Analysis

Variable	Coef.	Std. Err.	Z	P> z [95% Conf. Interval]		
Group 1						
Inroa	-4.771924	9.160164	-0.52	0.602	-22.72552	13.18167
lnroe	3.235722	11.20679	0.29	0.773	-18.71742	25.18887
lnmv	-0.39749	2.720964	-0.15	0.884	-5.730481	4.935501
lnocr	5.106341	5.972459	0.85	0.393	-6.599463	16.81214
lnbsize	-3.355611	6.642984	-0.56	0.579	-15.19904	8.48962
_00000R_c	-0.1100467	0.7813196	-0.14	0.888	-1.641405	1.421312
_cons	26.64936	25.51967	1.04	0.296	-23.36827	76.667

Table 4: Islami Bank Bangladesh PLC

The above figure shows that, the green finance of IBBPLC is positively correlated with return on equity and operating cost ratio. While green finance is negatively correlated with return on asset, market value of share and bank size. Again, there isn't any significant relationship between dependent variable green finance and independent variables that are return on asset, market value of share, return on equity, operating cost ratio and bank size as their probability value is greater than 0.05.

Table 5: Dutch-Bangla Bank PLC

Variable	Coef.	Std. Err.	Z	P> z [95% Conf. Interval]		
Group 2			·			
Inroa	-4.263994	5.405637	-0.79	0.430	-14.85885	6.33086
lnroe	0.0492601	4.806751	0.01	0.992	-9.3718	9.47032
lnmv	-2.336587	3.359375	-0.70	0.487	-8.926842	4.247667
lnocr	16.99294	5.547434	3.06	0.002	6.120167	27.86571
lnbsize	1.551475	7.271262	0.21	0.831	-12.69994	15.80289
_00000R_c	0.9945616	1.860171	0.53	0.593	-2.651306	4.640429
_cons	14.85966	48.04836	0.31	0.757	-79.3134	109.8327

The above figure shows that, the green finance of DBBL is positively correlated with return on equity, operating cost ratio, and bank size. While green finance is negatively correlated with return on asset and market value of share. Again, there isn't any significant relationship between the response variable green finance, and the predictor variables which are return on asset, market value of share, return on equity and bank size as their probability value is greater than 0.05. However, the dependent variable green finance has a significant relationship with the independent variable operating cost ratio as its probability value is 0.002 which is less than 0.05.

Table 6: Sonali Bank PLC								
Variable	Coef.	Std. Err.	Z	P> z [95% Conf. Interval]				
Group 3								
Inroa	7.626098	4.882422	1.56	0.118	-1.943274	17.19547		
lnroe	-7.611513	4.644857	-1.64	0.101	-16.71527	1.492239		
lnmv	0.7510143	3.224954	0.23	0.816	-5.56978	7.071868		
lnocr	-12.72363	2.684956	-4.74	0.000	-17.98545	-7.460613		
lnbsize	-3.64334	4.137045	-0.88	0.379	-11.7518	4.465119		
_00000R_c	1.668278	0.617588	2.70	0.007	0.4578277	2.878728		
_cons	6.932074	13.97893	0.50	0.620	-20.46612	34.33027		

The figure presented indicates that the green finance of SBPLC exhibits a positive correlation with return on assets and market value of share. It exhibits a negative correlation with return on equity, bank size and the operating cost ratio. Once more, there is no substantial relationship between the dependent variable of green finance and the independent variables, which include return on assets, return on equity, market value of shares and bank size, as their probability values exceed 0.05. While the dependent variable of green finance is perfectly correlated with operating cost ratio.

Table 7: City Bank PLC

Variable	Coef.	Std. Err.	Z		P> z [95% Conf. Interval]		
Group 4							
Inroa	0.3117323	3.167755	0.10	0.922	-5.896953	6.520418	
lnroe	0.2371829	3.413455	0.07	0.945	-6.453666	6.927432	
lnmv	-1.587373	1.774204	-0.89	0.371	-5.064749	1.890003	
lnocr	8.092952	5.402064	1.50	0.134	-2.494898	18.6888	
lnbsize	2.671994	2.412958	1.11	0.268	-2.057317	7.401306	
00000R_c	0.7251666	1.065566	0.68	0.496	-1.363293	2.813627	
_cons	3.462525	17.72687	0.20	0.845	-31.2815	38.20655	

The aforementioned figure indicates that City Bank's green financing has a positive correlation with return on asset, return on equity, operational cost ratio and bank size. The dependent variable, green finance, exhibits a negative correlation with market value of share. There is no significant link between the dependent variable, green finance, and the independent variables of return on assets, return on equity, market value of shares, operating cost ratio and bank size since their probability values exceed 0.05.

Table 8: Agrani Bank PLC

Variable	Coef.	Std. Err.	Z	P> z [95% Conf. Interval]			
Group 5							
Inroa	-8.288104	19.13803	-0.43	0.665	-45.79795	29.22174	
lnroe	10.10583	18.72616	0.54	0.589	-26.59677	46.80844	
lnmv	-47.77987	25.23588	-1.89	0.058	-97.24048	1.682342	
lnocr	-16.09199	6.599078	-2.44	0.015	-29.02595	-3.158037	
lnbsize	-4.458176	21.64959	-0.21	0.837	-46.8906	37.97425	
00000R_c	-4.385246	1.630456	-2.69	0.007	-7.580881	-1.18961	
_cons	103.0402	102.4418	1.01	0.314	-97.74209	303.8225	

The mentioned figure indicates that Agrani Bank's green financing has a favourable correlation with return on equity. The dependent variable, green finance, has a negative correlation with return on asset, market value of shares, bank size and operational cost ratio. There is no substantial link between the dependent variable green finance and the independent variables return on assets, return on equity, market value of shares and bank size, since their probability values exceed 0.05. While the dependent variable of green finance is significantly correlated with operating cost ratio as its probability value is 0.015 which is less than 0.05.

Table 9: BRAC Bank PLC

Variable	Coef.	Std. Err.	Z	P> z [95% Conf. Interval]		
Group 6						
Inroa	-11.16108	6.911944	-1.61	0.106	-24.70824	2.386078
lnroe	5.678343	5.036063	1.13	0.260	-4.192158	15.54885
lnmv	-3.372277	5.310199	-0.64	0.525	-13.78008	7.035522
lnocr	6.315165	15.14603	0.42	0.677	-23.35876	35.98909
lnbsize	-5.504158	5.19752	-1.06	0.298	-15.69111	4.682795
_00000R_c	4.135635	2.399525	1.72	0.085	-0.5673481	8.838617
_cons	30.29214	37.89793	0.80	0.424	-43.98644	104.5707

The figure presented above indicates that BRAC Bank's green finance is positively correlated with both return on equity and operating cost ratio. The dependent variable green finance shows a negative correlation with return on asset, market value of share, and bank size. The probability values of all the independent variables indicate that there is no significant relationship between them, as their probability values exceed 0.05.

Table 10: Bank Asia PLC

Variable	Coef.	Std. Err.	Z	P> z [95% Conf. Interval]		
Group 7						
Inroa	13.17587	22.90078	0.58	0.565	-31.70884	58.06057
lnroe	-9.636849	23.51006	-0.41	0.682	-55.71573	36.44203
lnmv	-4.229806	5.854885	-0.72	0.470	-15.70517	7.245557
lnocr	1.44687	6.371899	0.23	0.820	-11.04182	13.93556
lnbsize	5.189284	8.422962	0.62	0.538	-11.31942	21.69799
_00000R_c	2.207023	0.9747346	2.26	0.024	0.2965786	4.117468
_cons	-1.20876	22.20551	-0.05	0.957	-44.73076	42.31324

The aforementioned figure indicates that Bank Asia's green financing has a favourable correlation with return on asset, bank size and the operating cost ratio. Nevertheless, it has a negative correlation with return on equity and market share value. The probability values of the independent variables suggest that there is no substantial association between them, since their probabilities exceed 0.05.

Variable	Coef.	Std. Err.	Z	P> z [95% Conf. Interval]		
Group 8		•		·		
Inroa	29.81123	13.15258	2.27	0.023	4.032654	55.58981
lnroe	-26.8337	12.29399	-2.18	0.029	-50.92914	-2.737596
lnmv	1.094338	3.07595	0.36	0.722	-4.934414	7.123089
lnocr	15.12048	17.50587	0.86	0.388	-19.19039	49.43136
lnbsize	8.51528	4.84184	1.76	0.079	9745519	18.00511
_00000R_c	.7510732	.9385678	0.80	0.424	-1.088486	2.590632
_cons	13.34682	27.93909	0.48	0.633	-41.41279	68.10643

	Table 11:	United	Commercial	Bank	PLC
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The figure indicates a positive correlation between UCB's green finance, return on assets, market value of share, operational cost ratio and bank size. The dependent variable, green finance, exhibits a negative correlation with return on equity. The analysis indicates no significant relationship between the dependent variable, green finance, and the independent variables: market value of shares, operating cost ratio, and bank size, as their probability values exceed 0.05. While the dependent variable, green finance, is significantly correlated with both return on assets and return on equity as their probability value is 0.023 and 0.029 respectively, that is less than 0.05.

5. Findings and Conclusion

Focussing on a sample of eight commercial banks in Bangladesh, this paper aims to statistically investigate the link between green banking practices and the financial outcomes of banks. This study employs the Augmented Mean Group Analysis method and finds a significant correlation among the variables, leading to the rejection of the hypothesis. The analysis reveals notable correlations between green finance, the dependent variable, and several independent factors. Specifically, green finance is positively associated with bank size, the operating cost ratio, and return on equity.

Conversely, it exhibits a negative relationship with both the market value of shares and return on assets. A more detailed examination underscores that green finance demonstrates statistically significant correlations with return on equity, the operating cost ratio, and the market value of shares, with probability values below 0.05. However, no significant correlation is observed between green finance and either bank size or return on assets. Additionally, the AMG analysis yields a probability value of 0.0034, reinforcing the substantial relationship between green finance and all five independent variables. By rebutting the results of other research, this one hopes to prove that green finance does, in fact, correlate with improved company performance. Numerous other studies have noted the enduring efficacy of green finance and its robust correlation with bank profitability. Green Banking has transcended mere awareness and is firmly rooted in practical application.

Green banking has the potential to drive significant positive change in both the financial sector and the broader environment. By promoting environmentally sustainable practices, green banking can reduce the carbon footprint of financial institutions and encourage responsible lending and investment decisions (Khan et al., 2024). Its practical implications are far-reaching: it can lead to increased adoption of energyefficient technologies, foster a culture of environmental stewardship within financial institutions, and incentivize businesses and individuals to adopt eco-friendly practices. As regulatory frameworks evolve and consumer demand for sustainable products grows, green banking can also present new business opportunities. Ultimately, the widespread implementation of green banking can contribute to long-term economic stability while supporting global efforts to combat climate change (Gulzar et al., 2024). All scheduled banks are now anticipated to not only allocate their budgets but also to guarantee the effective utilization of those allocations. Bangladesh Bank has already established specific targets for green finance for each bank, and achieving these targets will be a significant factor in the evaluation process of a bank. Nevertheless, we must adopt a firm stance against those who contribute to our internal pollution. However, to better preserve and manage the environment, it is also advisable for financial authorities to promote green banking practices (Walzer et al., 2024).

The Bangladesh Bank, which is legally allowed to control how banks act, should push all banks to use green banking as a way to lessen their impact on the environment by giving incentives to projects that are good for the environment and lowering their investments in projects that are bad for the environment. Green banking could make a big difference in putting a bigger idea like "sustainable financial development" into action. Banks should give environmental protection top priority in their operations and decision-making procedures if they want to really support sustainable financial development. This might entail implementing more environmentally friendly workplace procedures, spending money on waste-reduction technologies, or even funding initiatives that promote biodiversity preservation and climate change mitigation. With its extensive reach, the financial industry may affect communities and industries by promoting investments in ecologically conscious projects (Raihan et al., 2024). Ultimately, it is possible to say that business banks should put environmental protection first.

6. Policy Implications

• *Strengthening Regulatory Frameworks*: Bangladesh Bank should enhance existing green banking policies by setting stricter compliance measures and incentives for banks adopting environmentally friendly financial practices. Mandatory green investment quotas and reporting standards can ensure broader participation.

- *Incentivizing Green Investment*: The government and financial regulators should introduce tax benefits, lower interest rates, and financial subsidies for banks that invest in green projects. This will encourage financial institutions to prioritize environmentally sustainable investments.
- Enhancing Financial Inclusion through Green Banking: Commercial banks should expand access to green financial products, particularly for SMEs and rural enterprises, ensuring that sustainable banking reaches a wider demographic.
- Integrating ESG Metrics in Performance Evaluations: Banks should incorporate Environmental, Social, and Governance (ESG) factors in their financial performance assessments, aligning with global sustainability standards and investor expectations. By integrating ECON-ESG principles (Işık et al., 2024a; 2024b; 2024c; 2024c; 2024c; 2024e; 2024f; 2024g; 2025; Ongan et al., 2025), banks can assess not only profitability but also the long-term economic and social impacts of their financial decisions. Countries with strong ESG integration, such as those in the European Union, have seen improved financial stability and investor confidence. In emerging economies like India, Brazil, and South Africa, ESG-based banking policies can drive sustainable industrial growth, enhance financial inclusion, and mitigate environmental risks. A country-specific approach to ESG integration will ensure that banks address local sustainability challenges while contributing to global climate and social goals.
- *Encouraging Public-Private Partnerships*: Collaboration between banks, governmental agencies, and international organizations can foster investment in renewable energy and climate-friendly infrastructure projects, enhancing the long-term impact of green finance.
- *Digitalization for Green Banking Efficiency*: Adoption of digital banking services and paperless transactions can significantly reduce carbon footprints, making banking operations more eco-friendly and cost-effective.
- Awareness and Capacity Building: Banks should invest in training programs for employees and awareness campaigns for customers to promote the adoption of green financial products and sustainable banking practices.
- By implementing these policy measures, Bangladesh's banking sector can contribute significantly to achieving national and global sustainability goals, fostering long-term economic growth while minimizing environmental risks.
- 7. Limitations and Future Research Direction

The primary limitation of this study is the relatively small sample size, as only eight banks were included in the analysis. This limited scope may affect the generalizability of the findings, as the results might not fully reflect the behavior of a broader range of financial institutions, particularly in different regions or under varying economic conditions. Additionally, the study relied solely on the Augmented Mean Group (AMG) method for analysis. While AMG provides valuable insights, it is a single methodological approach and may not fully capture the complexity of the relationships between green finance and other financial indicators. The use of more diverse and robust analytical techniques, such as panel data regressions, instrumental variable models, or machine learning methods, could enhance the accuracy and depth of the findings. Future research could explore the dynamic nature of green finance by considering temporal variations or conducting longitudinal studies. This would allow for a deeper examination of how green finance impacts financial performance over time and the potential for long-term sustainability within the banking sector.

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Tamal Chakrobortty (ORCID ID: 0000-0002-9673-2446), an assistant professor at the Department of Business Administration at Varendra University, Bangladesh, is currently working on economics, the banking system, the capital market, and SDG. Previously, he started his career as a lecturer at Varendra University, Bangladesh, in 2019. Before that he was an Assistant Trainee Officer (ATO) at Eastern Bank PLC in 2018. Mr. Chakrobortty completed his graduation and post-graduation in finance and banking from Rajshahi University in 2015 and 2016, respectively.



Anima Karmakar (ORCID ID: 0000-0003-1349-943X) currently works at Varendra University in Bangladesh, where she holds the position of assistant professor in the Department of Business Administration. Before embarking on her academic career, she served as an audit officer for the Jamuna Group of Industries, which is one of the most prestigious industries in Bangladesh. Having earned a Bachelor of Business Administration and Master of Business Administration from American International University in Bangladesh (AIUB), she is now a Ph.D. fellow in the marketing department at Dhaka University. The fields of neuromarketing, consumer behavior, market share, and business sustainability are areas that she is particularly interested in.

A. K. M. Ashiqur Rahman (ORCID ID: 0000-0002-7633-9065) serves as Lecturer at the Department of Business Administration, Varendra University. Mr. Rahman's research interest is financial accounting, cost accounting, managerial accounting and various topic related economics.

Dipika Rani Dobey (ORCID ID: 0009-0001-7847-1473), a driven and inquisitive 24-year-old, is currently pursuing her passion for research as a research assistant in the Department of Business Administration at Varendra University. Pursuing a bachelor's degree in business administration, majoring in finance and banking, Dipika exhibits a profound interest in various domains, including banking and finance, the economy, and the capital market.

Md. Rezwon Tanvir Mim (ORCID ID: 0009-0003-3743-1218) was born in Rajshahi, Bangladesh. He has done his bachelor's from Varendra University, Bangladesh, in Business Administration (major: Marketing). He is currently a young researcher and serves as a graduate research assistant at Varendra University





