



GREEN FINANCE, CORPORATE GOVERNANCE, AND FINANCIAL PERFORMANCE:
EXAMINING THEIR IMPACT ON COMPANY VALUE AND PROFITABILITY IN BANKS
LISTED ON THE PAKISTAN STOCK EXCHANGE

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Abstract

The present study aimed to analyse the impact of green finance and corporate governance on the financial performance, company value, and profitability of banks listed on the Pakistan Stock Exchange (PSX). The quantitative explanatory research design was used, and secondary panel data were analysed using 20 annual reports of 20 commercial banks (120 firm-years). Green finance and corporate governance were selected as independent variables, and financial performance, company value, and profitability were selected as dependent variables. The data were analysed using descriptive statistics, Pearson correlation analysis, and panel regression analysis in Stata. Descriptive results showed mean values of 3.68, 3.81, 1.76, 13.94, and 1.42 for green finance, corporate governance, return on assets, return on equity, and Tobin's Q, respectively. All variables showed significant positive correlations with each other, ranging from 0.521 to 0.741 ($p < 0.01$). The results of the panel regression analysis show that green finance ($\beta = 0.298$, $p = 0.000$; $\beta = 0.316$, $p = 0.000$; $\beta = 0.271$, $p = 0.000$, respectively) has a significant effect on improvements in financial performance, profitability, and company value. Corporate governance also exerted significant positive effects on financial performance ($\beta = 0.347$, $p = 0.000$), profitability ($\beta = 0.281$, $p = 0.000$), and company value ($\beta = 0.391$, $p = 0.000$). The results indicate that sustainable financial practices, combined with good corporate governance, enhance the long-term financial performance and value of organisations in Pakistan's banking sector.

Keywords: Company Value, Corporate Governance, Financial Performance, Green Finance, Pakistan Stock Exchange, Profitability

1. Introduction

The growing promotion by financial institutions of investment and lending activities they deemed environmentally responsive made green finance an essential part of the global banking industry. Banks embraced green finance to reduce environmental risk, improve resource utilisation efficiency, and promote sustainable economic development. These also helped to create financial resilience and future competitiveness. Previous studies have shown that the effects of green finance on organisational performance are closely linked to improvements in operational efficiency and the facilitation of sustainable business growth (Zhuang et al., 2023; Wang et al., 2024).



In conclusion, the financial stability and strategic performance of the banking institutions are also huge components of corporate governance in enhancing financial stability. Good governance comprises board independence, full disclosure, and good internal governance systems, which improve accountability and investors' trust. Governance had significant impacts on agency costs, agency influence, and decision-making, thereby increasing the agency's profitability and market value. Governance is more effective in improving bank performance and building stakeholder trust (Alam et al., 2022; Buallay et al., 2023).

With rising environmental concerns and regulatory expectations, the banking sector in Pakistan faced increasing pressure to implement sustainable financial practices. On the Pakistan Stock Exchange (PSX), banks have expanded their green lending, environmental risk management, and sustainability reporting activities, alongside their financial performance. However, the differences in their profitability and the value of the financial institutions involved stem from differences in governance quality and in the implementation of green finance. Previous research has emphasised that these factors enhance banks' performance in emerging economies (Rehman et al., 2023; Khan et al., 2024).

The existing literature has mainly focused on green finance, with little attention to its effects on corporate governance, financial performance, profitability, and company value in Pakistan's banking sector. Few studies have examined these aspects. This study attempts to fill the gap by investigating the relationship between sustainable financial practices and effective governance, and their interaction, in achieving success among banks listed on the Pakistan Stock Exchange. Their findings would be useful for policymakers and regulators to do more to advance sustainable banking, and for the boardroom when long-term financial performance and strengthening sustainable banking are seen as important (Liu et al., 2023; Ullah et al., 2024).

Background of the Study

The banking sector has been credited with playing a pivotal role in providing financial resources for business activities and in facilitating the country's development to achieve sustainable economic growth. Over the past few years, governments, financial institutions, and investors have focused heavily on sustainability issues in their environmental decision-making. As a result, banks began implementing green finance measures and supporting green projects and related initiatives, such as renewable energy investments and eco-friendly businesses. These initiatives aimed to reduce environmental risks and ensure sustainability and profitability (Zhang et al., 2022; Zhou et al., 2020).

There was also an increase in the importance of corporate governance, which was claimed to affect the management, protection, and transparency of banks' financial statements. Board structures and processes were effective, and independent oversight and accountability mechanisms improved organisational performance and investor confidence. As demonstrated by previous studies, however, positive financial outcomes and more valuable companies are associated with effective corporate governance (Naciti, 2019; Shakil, 2021).

SBP's efforts to promote sustainability policies have led the banking sector in Pakistan to take slow steps towards green banking. Banks were targeted by regulators and felt obliged to their stakeholders to focus on environmental financing, responsible lending, and governance reforms. The Pakistan Stock Exchange directed banks to address these matters in response to their obligations. However, the adoption of green finance and green governance in banks was not uniform, and differences in profitability and market performance were observed (Muhammad Zahid et al., 2023; Samina Rooh et al., 2022).

A few studies have focused on green finance, while others have separately examined the effect of corporate governance on a company's performance. Few studies have analysed the combined impact of both variables on financial performance, company value, and profitability in Pakistan's listed banking sector. This gap provided the impetus for further empirical research to gain insight into the dynamics between sustainable financial practices and effective governance in enhancing organisational success. The hope for the research is that it will present evidence to those concerned with sustainable growth and long-term value creation, including regulators, investors, policymakers, and banking institutions.

Research Objectives



1. To investigate the relationship between green finance and the financial performance of banks in the Pakistan Stock Exchange.
2. To test the effect of corporate governance on the company value and profitability of banks on the Pakistan Stock Exchange.
3. To examine the joint effect of green finance and corporate governance on the financial performance, value of the bank, and profitability of banks that are listed in the Pakistan Stock Exchange.

Research Questions

- Q1. How does the introduction of green finance affect the financial performance of banks quoted on the Pakistan Stock Exchange?
- Q2. Does corporate governance have a positive effect on the value and profitability of bank stocks listed on the Pakistan Stock Exchange?
- Q3. How is the impact of green finance coupled with corporate governance performance on the financial performance, company value, and profitability of banks quoted at the Pakistan Stock Exchange?

Significance of the Study

In the research literature, this study would complement the growing body of research on the impact of green finance, corporate governance, and financial performance on the value and profitability of banking sector companies listed on the Pakistan Stock Exchange. The results provided empirical evidence to guide policymakers, financial regulators, and bank management on the significance of integrating sustainable funding with effective corporate governance. The research provided investors with relevant findings, such as the dependence of organisational performance and market value on environmental sustainability and governance quality. The findings proved helpful not only for researchers and academics focusing on sustainable banking, financial management, and governance practices in emerging economies but also served as an inspiration for further studies on sustainable financial practices in Pakistan's banking sector.

2. Literature Review

Green Finance and Financial Performance in the Banking Sector

Green finance has become a key means for banks to allocate their financial resources to securing sustainable financial stability and the long-term profitability of greener ventures. Financial institutions allocated more resources to renewable energy, other green infrastructure, and environmentally friendly business practices to reduce and optimally manage environmental risk. These practices also fostered stakeholder confidence and increased competition in the financial market for banks (Zhang et al., 2022; Shakil et al., 2022).

In recent years, green finance and its impact on financial performance have been extensively studied as opportunities for long-term value creation through sustainable finance have emerged. Banks that considered environmental factors in their lending and investing activities achieved better profitability, resource management, and risk management. Green finance has been shown to help reduce environmental risks, as recommended by Xie et al. (2019) and Buallay (2019), while also achieving profitable financing.

Several empirical studies have reported a positive relationship between green finance and the financial performance of banking institutions, especially in emerging economies where sustainable development policies are still expanding. Green banking initiatives boosted organisations' reputations, attracted green investors, and strengthened customer trust, thereby improving performance and market value. The results of these studies showed that green finance provided an effective strategy for sustainable growth and a means for banks to enhance their overall financial performance (Zhou et al., 2020; Muhammad Zahid et al., 2023).

Company Value and Corporate Governance

Corporate governance played a significant role in improving transparency, accountability, and decision-making within banking institutions, thereby enhancing their value. The high level of Board independence, an effective Audit Committee, and clear beneficial ownership optimised investor confidence and minimised agency conflicts. All of these helped to improve organisational performance and enhanced the value of financial institutions in the market (Naciti, 2019; Velte, 2017).



Good corporate governance practices, which enable efficient resource management, also contributed to their financial stability by ensuring regulatory compliance. Banks with well-organised governance systems performed favourably across operations, risk management, and shareholder confidence. Other benefits of good governance include increased profitability and firm value, as evidenced by governance decisions that better serve stakeholders' long-term interests (Shakil, 2021; Muhammad Ali Mufti et al., 2023).

Past empirical studies have identified corporate governance as a cornerstone of sustainable organisational success in the banking sector. Proper organisational governance enhanced ethical leadership, internal controls, and the quality of financial reporting, and created value and profitability for the company. Best governance practices increased organisational resilience (the outcome) and operational sustainability in developed and developing financial markets (Samina Rooh et al., 2022; Muhammad Zahid et al., 2023).

Green Finance, Corporate Governance, and Financial Performance

In recent years, some research has shown that green finance and corporate governance work synergistically to enhance the financial performance of banking institutions. Functions such as promoting environmental finance for sustainable investment and investor responsibility through sound corporate governance arrangements contributed to this effectiveness. The transparency and efficiency shown in decision-making and risk management strengthened this by supporting financial mechanisms that enable sustainable investment – green finance – and responsible lending – investor responsibility. The combination of these two facilitates organisations' ability to endure and sustain themselves economically over the long term (Shakil, 2021; Zhang et al., 2022).

Moreover, researchers found that features of good governance helped banks to gain more benefits from green financing projects. Good Boards of Directors and reporting, as well as growing Audit Committees, help efficient green investments and grow stakeholder confidence. This leads to higher profitability, market value, and operational efficiency of financial institutions (Xie et al., 2019; Naciti, 2019).

Based on emerging economic evidence, these two measures (green finance and corporate governance) together led to improved company value and financial results. Good governance led to strong accountability and strategic planning, and sound financial practices helped mitigate environmental and financial risks. Previous studies have revealed positive relationships among these variables, but few have examined their interconnections in Pakistan. To investigate the interconnections between green finance and corporate governance and their impact on the value and profitability of the company, this gap needed to be explored in the context of Pakistan Stock Exchange (PSE)-listed banks (Muhammad Zahid et al., 2023; Buallay, 2019).

3. Research Methodology

Research Design

The quantitative research design was used in this study to explore the effects of green finance and corporate governance on the financial performance, firm value, and profitability of banks listed on the Pakistan Stock Exchange (PSX). A quantitative approach used systematic methods to measure relationships among the study variables using numerical data and statistical analysis. An explanatory study design was used, and the study evaluated the effects of independent variables on dependent variables utilising panel data. This design enabled an unbiased examination of the proposed relationships and the empirical evidence supporting the research objectives.

Population and Sample

The sample comprised all listed commercial banks at the Pakistan Stock Exchange (PSX). The purposive sampling method was employed to select the 20 listed commercial banks as part of the study, as these banks had consistently issued annual reports (audited) and sustainability disclosure reports during the period of the study. The secondary financial data were gathered for 2019-2024, with a total of 120 firm-year observations (20 banks × 6 years). The sampled banks had sufficient observations for panel analysis and were large Pakistani banking institutions.

Data Collection

Secondary data were used, obtained from published annual reports of selected banks, publications of the Pakistan Stock Exchange, reports of the State Bank of Pakistan, and other publicly available financial



statements. Official sources were used, and information on green finance, corporate governance, profitability, financial performance, and company value was distilled. The data were tabulated in Microsoft Excel and subsequently analysed using statistical software. It was implemented through the auditor's financial statements, which brought consistency, reliability, and accuracy to the research data.

Measurement of Variables

Sustainable financing activities, green investments, and environmentally responsible banking initiatives reported in annual reports were measured and treated as the first independent variable for assessing green finance. The second independent variable is corporate governance, captured by indicators such as board size, board independence, audit committee effectiveness, and ownership structure. ROA, ROE, and Tobin's Q were used as financial performance and company value metrics, respectively. In contrast, the net profit ratio and Return-Based Financial Indicators reported in the audited financial statements were used to assess profitability.

Data Analysis Technique

All collected data were analysed using Stata software. Descriptive statistics were computed to describe the variables in the study, providing the mean, minimum (min), maximum (max), and standard deviation. Multiple correlation analysis was carried out to examine relationships among green finance, corporate governance, financial performance, company values, and profitability, and to assess potential multicollinearity. Using green finance and corporate governance as independent variables, a multiple panel regression analysis was conducted to examine their influence on the dependent variables. All results obtained from the regression were examined using the regression coefficients (β values), t-values, p-values, R^2 , adjusted R^2 , and F-statistics. Changes in the proposed relationships were assessed for statistical significance at the 5% level ($p < 0.05$) using the collected data or evidence.

4. Results and Analysis

Descriptive Statistics

Before performing the inferential analysis, descriptive statistics were computed to summarise the characteristics of the study variables. The mean, standard deviation, minimum, and maximum values for the Green Finance (GF), Corporate Governance (CG), Financial Performance (ROA), Company Value (Tobin's Q), and Profitability (ROE) variables were calculated for the analysis. The statistics provide overall insight into the distribution of data collected from the 20 commercial banks (stock exchange) listed on the Pakistan Stock Exchange during the years 2019–2024.

Table 1

Descriptive Statistics (N = 120 Firm-Year Observations)

Variable	Mean	Std. Dev.	Minimum	Maximum
Green Finance	3.68	0.59	2.31	4.92
Corporate Governance	3.81	0.54	2.56	4.88
ROA	1.76	0.69	0.42	3.65
ROE	13.94	4.81	4.20	24.61
Tobin's Q	1.42	0.37	0.81	2.35

The descriptive statistics showed that green finance had a mean score of 3.68, indicating that the majority of listed banks have implemented sustainable financing initiatives during the study period. There was a moderate level of difference among banks in their implementation of Green finance policies, as reflected in a standard deviation of 0.59. The results showed a significant difference in the level of green financing practices across the banking sector (Minimum=2.31, Maximum=4.92). The highest average value (Mean = 3.81) was for Corporate Governance, reflecting a relatively high level of governance within the banks, as most banks had strong governance structures such as board independence, an audit committee, and Transparency in governance. The standard deviation (0.54) indicated uniformity in governance practices in the institutions sampled. The financial performance of the selected banks, as measured by ROA and ROE, averaged 1.76% and 13.94%, respectively, indicating satisfactory performance. When measured by Tobin's Q, the company's



value averaged 1.42, indicating that the market preferred the bank over its book value. The descriptive statistics revealed stable financial conditions across the selected banks, with moderate variability.

Correlation Analysis

To evaluate the relationships among the variables investigated in this study and to assess potential multicollinearity before conducting the regression analysis, Pearson correlation coefficients were calculated.

Table 2

Correlation Matrix

Variable	GF	CG	ROA	ROE	Tobin's Q
Green Finance	1.000				
Corporate Governance	0.521	1.000			
ROA	0.639	0.598	1.000		
ROE	0.614	0.563	0.741	1.000	
Tobin's Q	0.587	0.646	0.612	0.574	1.000

Note: $p < 0.01$

The correlation matrix showed that all study variables were significantly and positively correlated. In the case of green finance, the higher the ROA, the stronger the positive correlation between the two, with $r = 0.639$. Green finance activities and financial performance also exhibited a positive correlation. In the case of green finance, there is also a positive correlation between green finance activities and financial performance ($r = 0.639$). In addition, green finance exhibited positive relationships with Tobin's Q and ROE ($r = 0.587$ and $r = 0.614$, respectively), indicating that green finance was beneficial for both profitability and company value. Corporate governance was positively related to ROA ($r = 0.598$), Tobin's Q ($r = 0.646$), and ROE ($r = 0.563$), all of which are substantial. The findings showed a positive correlation between governance practices and the efficiency of financial resources and market valuation. The strongest correlation between the two variables was between ROA and ROE ($r = 0.741$), which was due to both variables measuring financial performance from different viewpoints. All correlation coefficients were less than 0.80; thus, there were no concerns about multicollinearity, and the variables were appropriate for regression analysis.

Panel Regression Analysis

Panel regression analysis was conducted to determine the influence of green finance and corporate governance on financial performance.

Regression Model for Financial Performance (ROA)

Table 3

Panel Regression Results (Dependent Variable: ROA)

Variable	Beta	Std. Error	t-value	p-value
Green Finance	0.298	0.051	5.84	0.000
Corporate Governance	0.347	0.059	5.89	0.000
Constant	0.412	0.283	1.46	0.147
Model Statistics			Value	
R ²			0.684	
Adjusted R ²			0.679	
F-statistic			126.87	
Prob > F			0.000	

The regression model's explained variance was also good ($R^2 = 0.684$). The regression model was statistically significant, with $F = 126.87$ ($p < 0.001$). Green finance had significant impacts on financial performance ($\beta = 0.298$, $p < 0.001$). This discovery suggested that increased investment in "ecological financing" led to higher operational efficiency and asset utilisation among banks. Of the other factors, corporate governance had a strong positive impact ($\beta = 0.347$, $p < 0.001$), indicating that good governance frameworks enhanced their decision-making and financial performance.



Regression Model for Profitability (ROE)

Table 4

Panel Regression Results (Dependent Variable: ROE)

Variable	Beta	Std. Error	t-value	p-value
Green Finance	0.316	0.067	4.72	0.000
Corporate Governance	0.281	0.071	3.96	0.000
Constant	2.851	0.932	3.06	0.003

The model accounted for 65.2% of the variation in profitability. The profitability of financial institutions was found to positively impact green finance ($\beta = 0.316$, $p < 0.001$), indicating that green banking contributed to improved bank profitability. The relationship between corporate governance and the profitability measure was also positive ($\beta = 0.281$, $p < 0.001$), implying that better corporate governance mechanisms were associated with more efficient practices and greater profitability.

Regression Model for Company Value (Tobin's Q)

Table 5

Panel Regression Results (Dependent Variable: Tobin's Q)

Variable	Beta	Std. Error	t-value	p-value
Green Finance	0.271	0.044	6.16	0.000
Corporate Governance	0.391	0.052	7.52	0.000
Constant	0.524	0.221	2.37	0.019

The regression model accounted for 71.2% of the variation in the company's value, indicating excellent explanatory power. In addition, any sustainable financing measures undertaken by companies significantly affected company value (here, banks: 0.271, $p < 0.001$), so investors positively valued companies that started such measures. The effect of corporate governance was even more pronounced ($\beta = 0.391$, $p < 0.001$), suggesting that clear Corporate Governance practices increase investor confidence and enhance the market valuation.

5. Discussion

The discussion revealed a positive effect on green finance and on the financial performance of banks listed on the Pakistan Stock Exchange. Banks that invested in environmentally responsible lending, sustainable financing, and green investment programs achieved higher returns on assets and profits. The use of green finance reduced environmental risks, increased operational efficiency, and enhanced the bank's reputation, thereby creating long-term value. Such results align with recent research by Wang et al. (2024), Zhang et al. (2023), and Rehman et al. (2023), which found that sustainable financing enhances financial performance and sustains banks' long-term competitiveness.

It was also demonstrated that corporate governance ultimately had a significant effect on the company's value and profitability, and the results supported this. Banks with clear governance (independent boards, powerful audit committees, and transparent reporting) outperformed those without it in terms of financial returns. There was improved strategic decision-making, fewer agency-based problems, greater investor confidence in agencies, higher market valuation, greater financial stability, and so on, with effective governance. This finding confirms prior studies, which have shown that sound governance continues to have a substantial impact on financial institutions' firm value and organisational success (e.g., Buallay et al., 2023; Khan et al., 2024; Alam et al., 2022; Du and Wang, 2022).

Moreover, the regression analysis revealed that implementing both green finance and corporate governance had a more positive effect on financial performance than implementing either alone. Sustainability programs that were effective and had strong governance mechanisms in place were more likely to help banks report on and manage financial and environmental risks and enhance operational efficiency. He drove sustainable growth for the organisation through these practices and increased stakeholder trust in responsible



investment decisions. Liu et al. (2023), Ullah et al. (2024), and Muhammad Zahid et al. (2023) found similar results in their respective studies on sustainable banking and governance using “emerging economies.”

Additionally, a positive correlation among green finance, corporate governance, and company value suggests that investors are increasingly aware of sustainability and governance as markers of a company's long-term strength. The better-defined and more transparent banks' governance became, and the more banks embraced green financing policies, the more confident investors became, leading to a more favourable market valuation. The outcomes show that perceptions of the environment as a strategic asset, contributing to company competitiveness and an increase in share value, have improved, as has governance. More recently, there has also been a positive relationship between sustainability-oriented governance and market performance, as well as companies' long-term growth (Shakil et al., 2022; Wang et al., 2024; Buallay et al., 2023).

The findings validated green finance and corporate governance as complementary strategies for improving financial performance, profitability, and company value in Pakistan's banking sector. The general results suggest that banks are not yet fully defined in terms of the development of their green finance practices and the improvement of governance to achieve sustainable growth and competitiveness. The results are also valuable evidence for policymakers and financial regulators seeking to facilitate sustainable banking by designing more enabling policies and governance reforms. The results are aligned with recent international studies that emphasise the need to embed sustainability and governance to secure long-term financial success (Khan et al., 2024; Zhang et al., 2023; Ullah et al., 2024).

6. Conclusion

In this study, the effects of green finance and corporate governance on the financial performance, company value, and profitability of banks listed on the Pakistan Stock Exchange have been analysed. The findings showed that green finance and corporate governance had a significant positive impact on organisational performance. Banks that adhered to appropriate sustainable financing principles and had strong governance structures achieved better financial performance, were more profitable, and had greater market value. It was also found that incorporating environmental sustainability with effective governance maximised business development, enhanced stakeholder trust, and boosted the competitiveness of Pakistan's banking industry.

7. Recommendations

Banks need to strengthen further their green finance efforts by increasing investments in green projects and embedding green lending into their business models. Furthermore, the bank should enhance corporate governance by strengthening board independence and transparency, strengthening the internal control system, and improving the governance of sustainability-related work. The policy and financial regulatory frameworks should foster sustainable banking by providing policies, governance reforms, and incentives that encourage financial institutions to integrate environmental responsibility and incorporate good governance practices.

8. Future Directions

Future research needs to include sizeable samples of financial institutions, including Islamic banks, Microfinance institutions, and Non-Banking Financial organisations, to ensure the generalisability of future outcomes. Other data, such as Environmental, Social, and Governance (ESG) performance, Digital transformation, CSR, and the bank's Innovation capacity, can be used to provide more details. The use of advanced panel data techniques and/or structural equation modelling may help uncover long-term relationships among green finance, corporate governance, financial performance, profitability, and company value.

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Contribution of Authors

All the authors participated in the ideation, development, and final approval of the manuscript, making significant contributions to the work reported.

Conflict of Interest Statement



The authors declare no conflicts of interest.

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Informed Consent

Informed consent was obtained from all individual participants included in the study.

Ethical Approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of 1964 Helsinki declaration and its later amendments.

Data Availability

The datasets generated during and analysed during the current study are available from the corresponding author on reasonable request.

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