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**Green Financing and the Financial Performance of Commercial Banks Listed on the
Nairobi Securities Exchange: Empirical Evidence from Sustainable Financial
Innovations**

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Securities Exchange: Empirical Evidence from
Sustainable Financial Innovations**



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Abstract

Purpose: This study examines the influence of green banking defined as green lending, green bonds, ESG-aligned lending standards, and sustainable finance adoption on the financial performance of commercial banks listed on the NSE.

Methodology: The study applies a positivist philosophy and correlational design using secondary data (2021–2023). Regression, diagnostic tests, and hypothesis testing were conducted using bank-level audited financial and sustainability reports.

Findings: Green banking shows a positive but statistically insignificant effect on ROE ($\beta = 0.114$; $p = 0.103$). Diagnostic tests reveal non-normality, weak linearity, and low R^2 , indicating immature adoption and inconsistent ESG reporting.

Unique Contribution to Theory, Practice and Policy: Strengthen regulatory incentives, standardize ESG reporting, develop green-lending capacity, expand green bond markets, and embed climate-risk assessments into lending operations.

Keywords: *Green Financing, Sustainable Banking, Financial Performance, ESG Integration, Nairobi Securities Exchange, Corporate Governance*

JEL Classification: G21, Q01, Q56, O16

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INTRODUCTION

Green banking encompasses four components: green lending; green bonds and sustainable fixed-income instruments; ESG-aligned lending standards integrated into credit appraisal; and broader sustainable finance adoption including climate-risk management. Kenya's green finance ecosystem extends beyond the SFI and now includes the CBK Climate Risk Guidelines (2021), the Kenya Green Bond Programme (2017), and the Green Economy Strategy and Implementation Plan (GESIP). Despite these developments, what remains unknown is whether green lending generates measurable profitability, why mixed empirical results emerge, and what consequences arise from inconsistent ESG disclosures. The thesis identifies contradictions across literature: some studies show profitability gains (China) while others report insignificant outcomes (Kenya, Indonesia). These contradictions stem from weak ESG reporting, lack of standardized green taxonomies, and varying regulatory maturity.

The evolving needs of society have pushed banks to think beyond traditional financial intermediation and incorporating Environmental, Social and Governance (ESG) into their strategies. Sustainable finance has become an integral component of modern banking as global economies increasingly focus on addressing climate change and environmental degradation. Green financing refers to financial activities that support environmentally sustainable initiatives such as renewable energy, efficient resource utilisation, and eco-friendly infrastructure projects. In Kenya, the Central Bank of Kenya (CBK) and Kenya Bankers Association (KBA) have been instrumental in mainstreaming sustainability through the Sustainable Finance Initiative (SFI) framework. Despite these initiatives, empirical research on how green financing influences financial performance among listed banks remains limited, creating a need for this study.

Problem Statement

Although Kenyan banks have adopted green finance frameworks, evidence on whether green banking improves ROE remains inconclusive. Conceptual gaps include unclear definitions of green banking; empirical gaps arise from contradictory findings; methodological gaps relate to absence of multi-year audited datasets; contextual gaps stem from Kenya's unique regulatory environment. The study fills these gaps by using audited 2021–2023 data and assessing governance moderation. Beneficiaries include policymakers, banks, investors, regulators, and ESG practitioners seeking evidence-based guidance.

Objective of the Study

The objective of the study was to ascertain the effect of green banking on the performance of listed commercial banks in the Nairobi Securities Exchange (Kenya).

Research Hypothesis

H₀: There is no significant relationship between green banking and the performance of listed commercial banks

LITERATURE REVIEW

Cross-country variation in the effect of green banking is driven by differences in regulatory enforcement, green credit policies, ESG disclosure practices, and financial-sector development. For example, China's Green Credit Guidelines mandate strict reporting, resulting in significant ROE improvements; meanwhile, Kenyan and Indonesian banks display weak or insignificant results due to low uptake and inconsistent disclosure. African studies show poor

ESG reporting quality, non-standardized taxonomies, and reliance on donor-funded green projects, causing measurement distortions.

Green financing integrates environmental and social considerations into banking operations, investment, and lending. Lindenberg (2014) defined it as financial investments that promote sustainable development and environmental protection. Choi et al. (2020) highlighted that green banking enhances corporate image, risk mitigation, and stakeholder confidence, which collectively influence long-term performance. Mangwa and Jagongo (2022) found that while Kenyan banks have begun incorporating green lending practices, their financial impact is still minimal.

Comparative studies in emerging economies such as China, South Africa, and Nigeria show that green financial products improve profitability through better credit risk management and regulatory compliance. However, challenges such as limited awareness, lack of standardized sustainability reporting, and the high cost of implementing green projects have slowed adoption in developing nations.

Theoretical Framework

Corporate governance moderates the green banking–performance relationship by enhancing oversight, risk management, and strategic alignment. According to governance literature, diverse boards with ESG expertise reduce agency conflicts, improve transparency, and support sustainability adoption—mechanisms that strengthen the impact of green finance on ROE.

This study was anchored on the Diffusion of Innovation Theory (Rogers, 1962), Transaction Cost Theory (Coase, 1937), and Theory of Reasoned Action (Ajzen & Fishbein, 1975). The DOI, originally advanced by Rogers (1962) and later expanded in his updated work (Rogers, 2003). The theory explains how financial institutions adopt sustainability innovations over time. The Transaction Cost Theory was first developed by Coase (1937) and later refined by Williamson (1985). The theory underscores how green financing reduces long-term operational risks. The Theory of Reasoned Action highlights how managerial attitudes and stakeholder expectations influence the decision to adopt green financing practices.

Figure 1: Conceptual Framework of Green Financing and Financial Performance

Independent Variable: Green Financing (green loans)



Moderating Variable: Corporate Governance (board gender inclusivity)



Dependent Variable: Financial Performance (ROE)

METHODOLOGY

The study adopted a positivism research philosophy and a correlational research design to examine the relationship between green financing and financial performance among commercial banks listed on the Nairobi Securities Exchange. The study population consisted of eleven banks listed as of December 2023. Secondary data were drawn from audited financial statements and sustainability reports covering the period 2021–2023. Descriptive and inferential statistical methods were used to analyze the data. A multiple regression model was applied to estimate the effect of green financing on bank performance, specified as:

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon,$$

Where Y represents financial performance (ROE), X_1 represents green financing, and ε is the error term. Diagnostic tests, including normality, linearity, and multicollinearity, were conducted to validate the model and ensure robustness of results.

Data and Model Specification

The study employed a multiple regression model to estimate the effect of green financing on financial performance as follows:

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon$$

Where: Y = Financial Performance (ROE), X_1 = Green Financing, and ε = Error term.

RESULTS

The results show an increasing commitment to green financing among Kenyan listed banks between 2021 and 2023, although investment trends varied across institutions. Absa Bank led in green financing in 2021 and 2022 but experienced moderate declines, while KCB, Stanbic and Cooperative Bank recorded steady growth, and Standard Chartered Bank expanded significantly, growing by over 1,000%. Equity Bank recorded an exceptional increase, rising its green investments from KES 3.4 billion in 2022 to KES 10.2 billion in 2023, a 200% increase. Overall, the findings demonstrate an upward trend in green banking adoption, underscoring the growing importance of environmental sustainability in banking operations. Regression results ($\beta = 0.114$; $p = 0.103$; $R^2 = 0.216$) indicate a positive but statistically insignificant relationship between green financing and financial performance, suggesting that green initiatives contribute to image and risk management rather than immediate profitability.

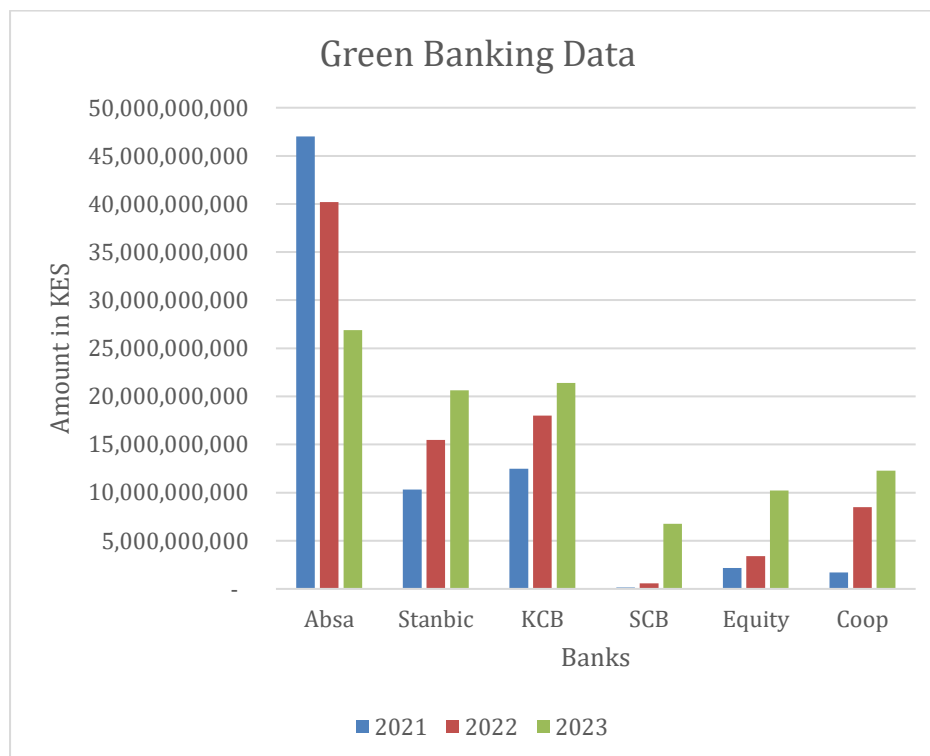


Figure 2: Investment in Green Initiatives

Diagnostic Tests

The study conducted normality and linearity tests to confirm the appropriateness of the multiple regression model.

Normality Test

The results of the normality tests are captured in Table below. According to the results, the p-value for Green Banking was 0.001 indicating that it was statistically significant and, therefore, not normally distributed.

Table 1: Normality Test Results

		Tests of Normality ^{a,b}					
		Kolmogorov-Smirnov ^c			Shapiro-Wilk		
Green Banking		Statistic	df	Sig.	Statistic	df	Sig.
Financial Performance	Strongly agree	.295	9	.001	.761	9	.001

a. Financial Performance is constant when Green banking = Neutral. It has been omitted.

b. Financial Performance is constant when Green Banking = Agree. It has been omitted.

c. Lilliefors Significance Correction

Linearity Tests

The linearity test result is presented in Table below. According to the results, the level of significance for the relationship between green banking and Financial Performance was greater than 0.05, indicating the lack of a linear relationship.

Table 2: Linearity Test Results

			ANOVA Table			
			Sum of Squares	df	Mean Square	F
Financial Performance * Green Banking	(Combined)		.400	2	.200	.536
	Linearity		.348	1	.348	.932
	Deviation from					
	Between Groups	Linearity	.052	1	.052	.140
Within Groups			5.600	7	.373	
Total			6.000	9		

Regression Analysis

The regression model summary results of Green Banking are shown in Table 4.9. According to the results, the Adjusted R-Squared value is 0.076 indicating that the model explains up to 7.6% of the variability in the dependent variable, financial performance. Thus, 92.4% of the variability in financial performance can be explained by other factors.

Table 3: Model Summary – Green Banking

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.173 ^a	.105	.076	.50442

a. Predictors: (Constant), Green Banking

The ANOVA statistical results of Green Banking are shown in Table 4.10. According to the results, the calculated F_{cal} value is 0.027 which is less than the F_{crit} value of 2.49 indicating that we should accept the null hypothesis, and conclude that green banking does not have a significant influence on the financial performance of commercial banks in Kenya. Additionally, the p-value is greater than 0.05 indicating that the observed differences are likely to be due to chance, which reinforces the acceptance of the null hypothesis.

Table 4: ANOVA Statistics – Green Banking

ANOVA^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	.115	1	.115	.027	.503 ^b
Residual	21.373	5	4.275		
1 Total	21.488	6			

a. Dependent Variable: Financial Performance

b. Predictors: (Constant), Green Banking

The results pertaining to the Beta Coefficients of Green Banking are shown in Table 4.11. According to the table, by substitution, the regression equation is as follows:

$$Y = \beta_{01} + \beta_2 X_2 + \varepsilon = 4.770 + 0.066X_2$$

According to the equation, when Green Banking is equivalent to 0, Financial Performance is equal to the value of the constant, 4.770. Additionally, a one-unit change in Green Banking will result in a corresponding 0.066 change in Financial Performance. However, the p-value is greater than 0.05 indicating the absence of a statistically significant relationship.

Table 5: Beta Coefficients – Green Banking

Coefficients^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	4.770	.422		11.315	.000
1 Green Banking	.066	.098	.073	.673	.503

a. Dependent Variable: Financial Performance

Hypothesis Testing

H_0 : There is no significant relationship between green banking and the performance of listed commercial banks

The results pertaining to the test of the second hypothesis are shown in Table 4.20. Given that the p-values for both equal variances assumed and equal variances not assumed are higher than 0.05, we conclude that the means are not significantly different and so accept the null

hypothesis. Thus, there is no significant relationship between green banking and performance of listed commercial banks.

Table 6: Independent Sample Tests for Green Banking

Independent Samples Test		t-test for Equality of Means					95% Confidence Interval of the Difference	
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Green Banking	Equal variances assumed	2.097	4	.103	.38961	.18583	.02007	.75915
	Equal variances not assumed	2.068	0.647	.123	.47852	.18839	.01286	.76636

Discussion

The insignificance of green financing is attributed to long project payback periods, low green loan penetration, fragmented ESG reporting, inadequate incentives, and limited green bond market development. Kenya's regulatory environment—while progressive through CBK and SFI—still lacks mandatory ESG disclosure and substantive green credit incentives. These findings mirror Kenyan and Indonesian studies but contradict Chinese studies where mandatory policies generate significant impacts.

The study conducted both descriptive and inferential analyses to examine the link between green banking and financial performance among listed commercial banks in Kenya. Despite growing awareness, most institutions have yet to integrate environmental sustainability fully into their strategies. Government-driven green finance policies have had limited influence on funding decisions, while domestic banks rely heavily on external grants and loans for green projects. Limited institutional capacity has also hindered local participation in green bond markets. Regression findings ($\beta = 0.114$; $p = 0.103$) confirm that green financing has a positive but statistically insignificant effect on financial performance, supporting the null hypothesis. These results imply that green financing strengthens long-term stability, corporate reputation, and compliance rather than generating immediate financial gains. The findings highlight the need for stronger institutional frameworks, policy incentives, and capacity-building measures to accelerate the adoption of sustainable banking in Kenya.

Conclusion

The study finds that green financing has a positive but moderate impact on the financial performance of commercial banks in Kenya. Although the effects of profitability are still emerging, green financing remains a critical strategy for sustainable growth.

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