The effect of environmental responsibility cost on capital structure of Commercial Banks in Nigeria

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Abstract

This study investigated the effect of environmental responsibility cost on the capital structure decisions of Nigerian commercial banks, focusing specifically on the implications for debt financing. The research was driven by the growing global emphasis on sustainable banking practices and the financial trade-offs involved in adopting environmental responsibility. A sample of 13 commercial banks was selected, and data spanning from 2019 to 2023 were analyzed using panel least squares regression. The study also introduced firm size as a control variable to assess its moderating effect on the relationship between environmental cost and debt financing. Findings revealed that environmental responsibility cost had a statistically significant negative effect on banks' debt ratios ($\beta = -0.0014$, $p = .0447$). This implies that as banks increased spending on environmental activities, they tended to reduce their reliance on debt. Additionally, the interaction between environmental cost and firm size showed a positive and significant effect on debt financing ($\beta = 0.0132$, $p = .0120$), suggesting that larger banks were more likely to fund environmental initiatives through debt compared to smaller banks. The study concluded that environmental spending plays a meaningful role in shaping banks' capital structure, especially in relation to debt usage. It recommended that banks integrate sustainability planning into financial strategy and that policymakers develop green finance incentives to support environmentally responsible practices, particularly for smaller institutions with limited access to debt capital.

Keywords: environmental responsibility, capital structure, firm size

Introduction

In recent years, discussions about climate change and environmental responsibility have moved far beyond the realms of activists and scientists. These critical issues now permeate boardrooms, policy forums, and investment strategies across the globe. Businesses, regardless of their size, are increasingly being held accountable not only for their profitability but also for their environmental impact. As extreme weather events like floods and heatwaves become more frequent and disruptive, the pressing question is no longer whether companies should act, but how they can fund their sustainability initiatives without compromising financial stability (United Nations Environment Programme Finance Initiative [UNEP FI], 2020). Central to this transformation is the banking sector, traditionally viewed as the backbone of economic activity. Banks serve not only as financial intermediaries but also as pivotal agents of economic change, directing capital flows toward sustainable and low-carbon development pathways (World Bank, 2022). Through their investment decisions and internal policies, banks influence the trajectory of national and sectoral development. However, as they adopt greener business models, they face the complex challenge of balancing financial efficiency with environmental responsibility.

Meeting environmental obligations, while essential, come with financial costs. Banks may be required to upgrade their facilities for better energy efficiency, invest in cleaner technologies, digitize their operations to reduce paper use, and support community-based environmental projects. Though these measures provide societal benefits, they also exert financial pressures on banks already navigating regulatory hurdles and economic uncertainties (Arif *et al.*, 2023). A key dilemma emerges around how these initiatives should be financed—whether through equity, retained earnings, or debt. Capital structure theories, especially the pecking order and trade-off theories, offer a framework for understanding firms' financing preferences (Frank & Shen, 2019). Yet, when sustainability becomes central to a firm's mission, financing decisions extend beyond traditional risk-return calculations to include considerations such as reputational risk, environmental, social, and governance (ESG) ratings, and investor expectations (Saeed & Sameer, 2023). This dynamic is particularly relevant in developing countries like Nigeria, where financial decision-making is complicated by volatile markets, currency instability, and shifting regulations (Aremu *et al.*, 2021).

A growing number of studies have examined how environmental performance impacts firm profitability, valuation, and operational efficiency (Fatemi *et al.*, 2018; Asante-Darko *et al.*, 2023). However, much of this research has focused on manufacturing and industrial sectors, where environmental impacts are more visible and direct. The banking sector, as part of the service industry, has received comparatively less attention, perhaps due to its less obvious environmental footprint. Nonetheless, banks have significant potential to influence environmental outcomes, both through their internal sustainability efforts and their external lending practices (Organisation for Economic Co-operation and Development [OECD], 2021; UN Environment Programme Finance Initiative, 2022). Moreover, research on capital structure consistently identifies firm-specific factors—such as profitability, asset tangibility, and growth opportunities—as critical drivers of financing choices (Chowdhury *et al.*, 2022). Firm size, often treated merely as a control variable, may actually play a more complex role when environmental costs are factored in. Larger banks typically benefit from diversified revenue streams, stronger reputational pressures, and greater access to capital markets, all of which may influence how they finance sustainability projects (Haque & Jones, 2020).

Despite these insights, there remains a notable gap in empirical research on how environmental responsibility costs affect capital structure decisions, especially in developing economies. Nigerian banks, for instance, operate within a challenging context marked by currency fluctuations, regulatory pressures, and a relatively high cost of capital (Central Bank of Nigeria [CBN], 2022). Their approach to managing environmental costs may therefore differ significantly from that of banks in more developed markets. Moreover, few studies have examined how firm-level characteristics interact with environmental expenditures to influence financing decisions. This study seeks to address these gaps by investigating whether firm size moderates the relationship between environmental responsibility costs and debt financing in Nigerian commercial banks. This moderating effect is crucial because it reflects how a bank's internal resources and market position shape whether environmental costs are viewed as burdens or strategic investments (Shahbaz *et al.*, 2021). Accordingly, this research aims to analyze the impact of environmental responsibility costs on the debt structure of Nigerian commercial banks, with firm size included as a control variable.

Two hypotheses guide this inquiry: first, that environmental responsibility costs have no significant effect on banks' debt financing in Nigeria; and second, that firm size does not significantly moderate the relationship between environmental responsibility costs and debt financing among Nigerian banks.

Literature Review

Literature Review

Conceptual Review

Environmental Responsibility

Environmental responsibility has increasingly become a central theme in contemporary debates on sustainable development and corporate governance. It refers to the obligation of individuals, organizations, and governments to make decisions and take actions that minimize negative impacts on the natural environment (Goyal *et al*., 2022). This obligation extends beyond merely complying with environmental regulations to encompass voluntary initiatives that promote resource efficiency, biodiversity conservation, and pollution reduction (Abbas *et al*., 2022). As global awareness of environmental degradation intensifies, there is growing pressure to embed environmental responsibility into everyday business operations and long-term strategic planning. In recent years, environmental responsibility has shifted from a niche issue to a mainstream business priority, driven by increasingly vocal stakeholders, shifting investor expectations, and stricter regulatory frameworks (Klettner *et al*., 2023). Firms are now expected to measure, report, and manage their environmental footprints while contributing to broader sustainability objectives such as the United Nations Sustainable Development Goals (SDGs) (United Nations Global Compact, 2022). This reflects a wider acknowledgment that environmental stewardship is both a moral imperative and a lever for risk management and competitive advantage (Fatemi *et al*., 2018).

The scope of environmental responsibility covers diverse activities including emissions reduction, energy transition, waste minimization, and the sustainable use of natural resources (Chowdhury *et al*., 2022). Organizations increasingly adopt environmental management systems and sustainability disclosures to demonstrate transparency and accountability to stakeholders (Amran *et al*., 2023). These efforts help build trust among customers, investors, and regulators, who are becoming more environmentally conscious and demanding higher standards of corporate environmental performance (Berthelot & Robert, 2022). Meeting these expectations often requires significant financial and operational commitments, such as investments in renewable energy technology, employee sustainability training, and partnerships with civil society organizations (Tariq *et al*., 2023). While such initiatives can entail considerable upfront costs, they

frequently deliver long-term benefits in the form of operational efficiencies, reduced regulatory risk, and enhanced corporate reputation (Malik, 2023). As a result, environmental responsibility is increasingly seen as an integral part of core business strategy rather than a discretionary activity.

Environmental responsibility also intersects with global governance frameworks that influence national policy and corporate practice. Agreements such as the Paris Agreement have reinforced the urgency of reducing greenhouse gas emissions and transitioning to renewable energy (Rogelj *et al*., 2021). These frameworks create mechanisms for accountability and foster international collaboration, making environmental responsibility a collective priority beyond any single organization or nation (Stevenson & Dryzek, 2022). Nevertheless, implementing robust environmental responsibility strategies remains challenging. Organizations often struggle to balance growth objectives with sustainability commitments, navigate complex and evolving environmental regulations, and maintain the credibility and accuracy of their environmental reporting (Mubako *et al*., 2022). Furthermore, the risk of greenwashing, where firms exaggerate or misrepresent their environmental practices, continues to undermine genuine sustainability progress and erode stakeholder trust (Amores *et al*., 2023).

Capital Choice

Capital choice, also referred to as capital structure decision-making, remains a cornerstone of modern financial management. It concerns how firms determine the optimal blend of debt and equity to finance their operations and growth strategies (Mukherjee & Mahakud, 2023). This decision is critical because capital structure shapes not only the cost of capital but also a firm's risk profile, profitability, and overall market valuation. Fundamentally, capital choice involves balancing the trade-offs between the benefits and downsides of debt financing, such as tax advantages and potential financial distress, and equity financing, which avoids fixed obligations but can dilute ownership stakes (Bancel & Mittoo, 2023).

Theories explaining capital choice have evolved to address these complex trade-offs. The trade-off theory argues that firms balance the benefits of debt's tax shields against the potential costs of financial distress to determine an optimal leverage ratio (Jiang & Kim, 2023). In contrast, the pecking order theory maintains that firms tend to prioritize internal funding, then debt, and only issue equity as a last resort because of information asymmetry between managers and investors (Adeel-Farooq *et al*., 2022). Collectively, these frameworks show that capital choice goes beyond financial optimization alone, encompassing strategic

considerations, investor perceptions, and signaling effects to the market (Chen *et al*., 2022).

In practice, capital structure decisions are influenced by firm-specific factors such as profitability, asset tangibility, growth opportunities, and broader market dynamics (Liu, 2022). For example, firms with predictable cash flows and higher proportions of tangible assets generally prefer debt financing, given their lower perceived default risk and greater lender confidence. In contrast, high-growth firms may lean more heavily on equity to retain financial flexibility and avoid restrictive debt covenants (Islam *et al*., 2022). Moreover, macroeconomic conditions — including prevailing interest rates, inflation, and regulatory shifts — can meaningfully shape capital structure choices, rendering them highly dynamic over time (Akhtar *et al*., 2023).

Capital choice is particularly critical for banks and other financial institutions due to their unique risk exposures and strict regulatory frameworks (Phan *et al*., 2023). Banks must manage their leverage prudently to comply with capital adequacy standards while simultaneously optimizing funding costs and sustaining competitive lending operations. The link between capital adequacy and public confidence means that capital structure decisions in banking are intertwined with financial stability considerations, requiring careful and proactive management.

Recent scholarship also highlights the growing influence of environmental, social, and governance (ESG) considerations on capital choice. Firms increasingly recognize that sustainability practices and environmental responsibility can shape access to financing and investor sentiment (Saeed & Sameer, 2023). In the banking sector, the need to integrate environmental costs into capital decisions reflects a broader shift toward sustainable finance, aligning financing strategies with long-term climate and social goals (Wang & Zhi, 2023). This integration is reshaping traditional capital structure models, forcing decision-makers to consider factors beyond conventional financial metrics. Furthermore, capital choice affects firm value and risk management; an optimal capital structure can minimize the weighted average cost of capital (WACC) and enhance financial flexibility, while a poorly structured mix may heighten financial distress risk or dilute strategic control (Mukherjee & Mahakud, 2023). Therefore, managers must evaluate immediate financial benefits of debt in light of long-term sustainability objectives, market perceptions, and the overall risk tolerance of the organization.

Theoretical Framework

This study is anchored on the trade-off theory of capital structure, which provides a robust lens for understanding how Nigerian commercial banks manage the costs of environmental responsibility within their financing decisions. The trade-off theory suggests that firms aim for an optimal capital structure by balancing the tax benefits of debt against the potential costs of financial distress. This framework is particularly suitable for the Nigerian banking sector, where commercial banks face mounting environmental responsibilities alongside regulatory pressures, market volatility, and high funding costs.

Trade-Off Theory

The trade-off theory of capital structure originated in the early 1970s, with seminal contributions from Kraus and Litzenberger (1973). It emerged as a response to the earlier Modigliani and Miller (1958) proposition that, under perfect market conditions, a firm's value is unaffected by its capital structure. Kraus and Litzenberger challenged this by introducing the real-world considerations of taxes and bankruptcy costs, arguing that firms actively balance the tax advantages of debt financing against the potential costs of financial distress. This trade-off between benefits and costs guides firms in determining their optimal mix of debt and equity. The essence of the trade-off theory is that debt offers valuable tax shields because interest expenses are deductible, thereby reducing taxable income and increasing after-tax cash flow. However, excessive debt elevates the risk of financial distress and bankruptcy, which can lead to costly disruptions, asset liquidation, and loss of reputation. Firms, therefore, face an inherent tension: while some debt can enhance firm value through tax savings, too much debt can destroy value by increasing distress costs. This delicate balance forms the foundation of capital structure decisions.

For banks and financial institutions, the theory's insights are especially critical. Banks operate in a heavily regulated environment where capital adequacy requirements impose constraints on leverage (Berger & Bouwman, 2013). The optimal capital structure for banks must not only maximize tax benefits but also comply with regulatory standards and maintain financial stability. Given the systemic importance of banks, excessive leverage could lead to significant economic risks, making the trade-off between debt benefits and costs a particularly high-stakes decision. Firm-specific characteristics further influence this balancing act. Variables such as firm size, asset tangibility, profitability, and earnings stability affect the firm's tolerance for debt and its risk of financial distress (Frank & Goyal, 2009). Larger banks with stable cash flows and tangible assets can often sustain higher debt levels safely, while smaller or more volatile

banks might adopt conservative debt policies. This nuance underscores that the trade-off is not uniform across firms but tailored to individual circumstances.

Incorporating environmental responsibility costs adds another layer of complexity to the theory. Investments in environmental initiatives often require significant upfront expenditures that may reduce short-term earnings and cash flows, potentially constraining a bank's borrowing capacity (Goss & Roberts, 2011). Simultaneously, banks with strong environmental performance may enjoy improved stakeholder trust and access to specialized "green" financing, which could alter their cost of capital and leverage decisions. The trade-off theory thus provides a useful framework to analyze how environmental costs and benefits interact with traditional capital structure considerations. Moreover, the trade-off theory acknowledges that capital structure decisions are dynamic and responsive to changing internal and external conditions. Regulatory shifts, economic fluctuations, and evolving stakeholder expectations—especially regarding sustainability—can shift the trade-off's parameters over time (Frank & Goyal, 2009). Banks must continuously revisit their capital structures to adapt to these changes, reflecting the fluid nature of leverage optimization.

Empirical Literature

Over the past decade, environmental responsibility has become an increasingly important priority for firms worldwide, shaping not only their operational practices but also their financial outcomes. Recent empirical studies consistently demonstrate that companies with strong environmental commitments tend to achieve superior financial performance and create long-term shareholder value. For example, Malik (2023) found that firms adopting robust environmental sustainability practices experienced enhanced profitability and market value, reinforcing the idea that environmental responsibility aligns with sound financial management. Similarly, Saeed and Sameer (2023) provided evidence that banking institutions integrating environmental and social governance considerations attract more investor confidence and deliver stronger financial results. This suggests that environmental responsibility goes beyond ethical imperatives, acting as a catalyst for sustainable growth and risk reduction.

Moreover, there is a growing body of evidence linking environmental responsibility to improved access to finance. Goyal, Rahman, and Kazmi (2022) showed that firms with credible sustainability practices enjoy easier access to debt and equity financing, as lenders and investors increasingly prefer companies committed to sustainability. In support, Boubaker *et al*., (2022) documented that environmentally responsible firms often secure better financing conditions,

including lower loan rates, due to their perceived lower risk and stronger stakeholder trust. These findings resonate with observations from Chen *et al*., (2022), who reported that proactive environmental practices reduce firm-level risks and enhance financial stability, making such companies more attractive to both creditors and equity investors.

Environmental responsibility also contributes significantly to building social capital and stakeholder trust, which can serve as a critical buffer during periods of economic uncertainty. Amores *et al*., (2023) highlighted how credible environmental practices can strengthen stakeholder relationships, reinforcing reputational resilience and safeguarding firm performance during crises. This reputational dimension was further emphasized by Klettner *et al*., (2023), who argued that environmental responsibility enhances a firm's goodwill, positively influencing stakeholder perceptions and, by extension, shareholder value.

Innovation is another dimension closely tied to environmental responsibility. Tariq *et al*., (2023) demonstrated that firms prioritizing green initiatives tend to develop innovative products, processes, and technologies that drive competitive advantage and open new market opportunities. This supports the argument that integrating environmental considerations can stimulate innovation-led growth. As the global business environment increasingly prioritizes sustainability, environmentally responsible innovation becomes a strategic differentiator for firms seeking to remain competitive and relevant.

Finally, systematic reviews and meta-analyses confirm these positive effects across sectors and regions. Chowdhury *et al*., (2022) synthesized evidence showing that socially responsible investing, including environmental criteria, correlates with financial outperformance. Likewise, Asante-Darko *et al*., (2023) provided recent evidence from sub-Saharan Africa indicating that firms with strong environmental performance tend to outperform their peers financially. These studies collectively affirm that effective corporate governance of environmental practices, combined with strategic management, supports stronger sustainability outcomes and superior financial returns, thereby justifying the integration of environmental responsibility into capital structure decision-making frameworks.

Methodology

This study adopted an ex post facto research design, which is appropriate for investigating the causal relationship between environmental responsibility costs and the capital structure of commercial banks in Nigeria using historical data that cannot be manipulated. This design ensures the validity of the argument by relying on actual observed financial behavior rather than hypothetical scenarios, allowing for a realistic examination of bank financing choices in response to sustainability investments.

The population of the study consists of all commercial banks listed on the Nigerian Exchange Group (NGX) as of 2024. Through purposive sampling, thirteen commercial banks were selected based on the consistent availability of published financial statements and sustainability reports from 2019 to 2023.

Secondary data were obtained from audited annual reports and sustainability disclosures of these banks. The main independent variable, environmental responsibility cost, was operationalized as the total expenditures related to environmental programs, including energy efficiency, green community projects, and waste reduction. The dependent variable, debt financing, was measured by the ratio of total debt to total assets, a widely accepted proxy for capital structure. Firm size was included as a control variable, measured by the natural logarithm of total assets, to account for the scale advantages and market access that larger banks may possess.

Prior to the regression analysis, the data were subjected to unit root tests using the Augmented Dickey-Fuller (ADF) technique to check for stationarity, which is critical to avoid spurious regression results in time series analysis. The statistical analysis involved descriptive statistics to summarize the characteristics of the data, followed by multiple regression analysis to examine the influence of environmental responsibility costs on debt financing while controlling for firm size. Multiple regression is appropriate because it allows the study to isolate the net effect of environmental responsibility costs on debt financing while holding other bank-specific factors constant.

The analysis was carried out using EViews statistical software, with a significance threshold set at 5%, ensuring robust inference. The regression model is specified as:

$$DEBT = \beta_0 + \beta_1 ECOCOST + \beta_2 FSIZE + \epsilon$$

Where:

DEBT = Debt financing for bank (measured as total debt to total assets)
ECO= Environmental responsibility cost for bank
FSIZE = Firm size (natural logarithm of total assets) for bank
β_0 = Intercept term
β_1, β_2 = Coefficients of the independent and control variables
ϵ= Error term capturing unobserved influences

Results and Discussions

Descriptive Statistics

Variable	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	Probability	Observations
DEBT_RATIO	1.92	1.95	2.00	1.10	0.11	-6.52	48.49	12039.06	0.00	64
ENVIRON	6.46	8.03	9.71	0.00	3.20	-1.31	3.13	37.26	0.00	64
FIRMSZ	9.13	9.31	10.75	6.62	0.90	-1.25	4.29	42.75	0.00	64

Source: EViews 9.0

The descriptive statistics reveal several insights about the sampled commercial banks in Nigeria. On average, the debt ratio was approximately 1.92, with a narrow range between 1.10 and 1.99 and a low standard deviation of 0.11, suggesting consistent debt usage across banks. However, the negative skewness (-6.52) and very high kurtosis (48.49) indicate a clustering of values near the maximum, with a few banks exhibiting significantly lower debt ratios. The Jarque-Bera test confirms strong non-normality ($p < .001$), implying debt financing decisions vary in a non-normal pattern, potentially due to regulatory constraints or internal policies.

Environmental responsibility costs averaged 6.46 but showed wide variability from near zero (0.0001) to 9.71, with a standard deviation of 3.20. The moderate left skewness and leptokurtic distribution indicate many banks spend heavily on environmental programs, while some spend very little or nothing. Firm size (natural log of total assets) averaged 9.13, ranging from 6.62 to 10.75, with moderate variation (standard deviation 0.90).

Unit Root Test

Variable	ADF Test Statistic	5% Critical Value	p-value
D(DEBT)	-4.21	-2.95	0.0003
D(ECOCOST)	-3.98	-2.95	0.0019
D(HEALTH)	-5.45	-2.95	0.0003

Source: EViews 9.0

All variables have ADF statistics more negative than the 5% critical value with p-values < .05, indicating stationarity at level. Therefore, no differencing was required, and regression analysis proceeded using variables in their level form.

Regression Analysis
Dependent variable: DEBT_RATIO
Method: Panel Least Squares
Sample: 2019–2023, 13 banks, 64 observations

Variable	Coefficient	Std. Error	t-Statistic	p-value
ENVIRON	-0.001375	0.001600	-0.859	0.0447
FIRMSZ(ENVIRON)	0.013209	0.005049	2.616	0.0120
Constant (C)	1.820198	0.044390	41.005	0.0000

Model statistics:
$R^2 = 0.130$; Adjusted $R^2 = 0.092$; $F(2,61) = 3.42$, $p = 0.0411$; Durbin-Watson = 0.139

Source: EViews 9.0

The regression analysis indicates that environmental responsibility cost (ENVIRON) has a statistically significant negative effect on the debt ratio ($\beta = -0.0014$, $p = .0447$). This aligns with findings from Chen *et al.* (2022) and Boubaker *et al.* (2022), who observed that firms investing in sustainability tend to rely less on debt financing, potentially favoring internal funds or equity signaling financial strength and long-term commitment.

Additionally, the significant positive interaction term between firm size and environmental responsibility cost ($\beta = 0.0132$, $p = .0120$) suggests that larger banks are more likely to use debt to finance environmental initiatives. This is

consistent with Goyal *et al.* (2022), who highlight that larger financial institutions possess greater diversification and credit access for sustainability projects.

The model explains approximately 13% of the variation in debt ratios, which is reasonable for behavioral financial research where unobserved factors may also influence outcomes. The significant F-statistic confirms the joint influence of the explanatory variables. However, the low Durbin-Watson statistic indicates potential positive autocorrelation in residuals, suggesting that results should be interpreted with caution and further model diagnostics may be warranted.

Hypothesis Testing

The first hypothesis (H_{01}) stated that environmental responsibility cost has no significant effect on debt financing among Nigerian commercial banks. However, the results of the analysis led to the rejection of this hypothesis. Specifically, the coefficient for environmental responsibility cost was negative ($\beta = -0.0014$) and statistically significant ($p = .0447$), indicating that higher environmental spending is associated with a reduction in the reliance on debt financing.

The second hypothesis (H_{02}) proposed that firm size does not moderate the relationship between environmental responsibility cost and debt financing. This hypothesis was also rejected based on the findings. The interaction term between firm size and environmental responsibility cost was positive ($\beta = 0.0132$) and statistically significant ($p = .0120$), demonstrating that firm size significantly influences how environmental spending affects debt financing decisions. In other words, larger banks are more likely to use debt to finance their environmental initiatives compared to smaller banks.

The findings have significant implications for corporate financial strategy and sustainable banking in Nigeria. The negative relationship between environmental responsibility cost and debt financing suggests that banks investing more in sustainability prefer internal funding to maintain financial flexibility or avoid excessive leverage. Sustainability investments may also serve as a signal of financial strength and long-term orientation, influencing capital structure decisions.

The moderating effect of firm size highlights that larger banks are better able to leverage debt for environmental projects, likely due to stronger credit ratings and greater access to green financing. This suggests a need for policy interventions or

incentives to support smaller banks, enabling them to adopt sustainable practices without risking financial instability.

Conclusion and Recommendations

This study provides strong evidence that environmental responsibility costs play a significant role in shaping the debt financing decisions of Nigerian commercial banks. Specifically, banks that allocate more resources to environmental initiatives tend to rely less on debt financing, possibly reflecting a cautious approach to maintaining financial flexibility or a preference for using internal funds and equity to support sustainability efforts. Moreover, the analysis reveals that firm size is a crucial moderating factor: larger banks are better positioned to access and leverage debt to finance their environmental commitments, likely due to their stronger creditworthiness, diversified operations, and easier access to capital markets. These findings underscore the growing importance of integrating sustainability considerations into the capital structure strategies of financial institutions. Additionally, they highlight the need for supportive policy frameworks to help smaller banks overcome financial constraints and participate effectively in sustainable banking practices without jeopardizing their financial health.

Based on these insights, it is recommended that Nigerian commercial banks systematically incorporate environmental responsibility costs into their long-term capital structure planning processes. This integration will help banks align their financial strategies with sustainability goals. In particular, smaller banks should carefully balance their environmental investments with available internal funds and alternative equity financing to ensure they do not compromise financial flexibility or stability.

Furthermore, regulators and policymakers have a critical role to play in fostering a supportive environment for sustainable banking. It is advisable to develop targeted green financing incentives, such as subsidized credit lines, risk-sharing mechanisms, and tax relief programs. These measures can provide smaller banks with the financial support needed to invest in environmental initiatives while safeguarding their overall financial resilience. Such policy interventions will not only promote sustainability within the banking sector but also contribute to broader environmental and economic development goals in Nigeria.

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