Balancing Green Commitment and Financial Obligations: Environmental Responsibility Cost and Bank Equity Capital

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Abstract
This study examined the effect of environmental responsibility costs, specifically community development expenditure, on the equity capital of banks listed on the Nigerian Exchange Group (NGX), while controlling for firm size. Using panel data from 13 banks over the period 2014 to 2023, the study employed panel least squares regression to assess how green commitments impact banks' financial obligations, measured by equity financing. Results showed that community development expenditure positively and significantly affected equity capital, with a coefficient of 0.025 (p = 0.012). Conversely, firm size had a significant negative effect (coefficient = -0.088, p = 0.004), suggesting that larger banks tend to rely less on equity financing despite their environmental responsibility efforts. These findings include that banks' investments in environmental and community development initiatives can strengthen their equity capital, helping to balance green commitment with financial obligations. The study recommends that banks intensify their environmental responsibility expenditures as a strategic approach to improving equity financing and that policymakers develop frameworks encouraging sustainable financing practices aligned with green commitments.

Keywords: *Environmental responsibility, Equity Capital, Firm Size, Financial Obligations*

1. INTRODUCTIONS

In an era where global attention increasingly focuses on sustainable development, the role of financial institutions in promoting environmental responsibility has become more pronounced (UNEP FI, 2020; Scholtens, 2017). Banks, as pivotal players in economic growth, are now expected to balance profitability with environmental stewardship (Weber & Feltmate, 2016). This dual expectation arises from the growing recognition that financial institutions can significantly influence environmental outcomes through their investment decisions and operational practices (Clark et al., 2015). Consequently, the integration of environmental considerations into banking operations is not merely a moral imperative but also a strategic necessity (KPMG, 2022). The concept of environmental responsibility cost, encompassing expenditures on community development and environmental conservation, has gained traction as a measure of a bank's commitment to sustainable practices (Eccles & Krzus, 2018). These costs, while potentially impacting short-term profitability, are increasingly viewed as investments that can yield long-term benefits, including enhanced reputation, customer loyalty, and risk mitigation (Freeman et al., 2020). However, the financial implications of such expenditures, particularly their effect on a bank's equity capital, remain a subject of ongoing debate and investigation (Akpan et al., 2024).

Equity capital serves as a critical buffer for banks, absorbing losses and providing a foundation for growth (Basel Committee on Banking Supervision, 2010). Understanding the factors that influence equity financing is essential for ensuring the stability and resilience of financial institutions. While traditional determinants such as profitability, asset quality, and market conditions are well-documented (Berger & Bouwman, 2013), the impact of environmental responsibility costs on equity capital is less clear. This gap in knowledge is particularly pertinent in emerging economies like Nigeria, where banks face unique challenges and opportunities in aligning financial performance with environmental sustainability (Ezejiofor et al., 2022).

In Nigeria, the banking sector has witnessed a growing emphasis on corporate social responsibility (CSR), with community development initiatives becoming a focal point (Nwobu, 2020). These initiatives, ranging from infrastructure development to educational programs, reflect banks' efforts to contribute to societal well-being. However, the financial ramifications of such commitments, especially concerning equity financing, are not fully understood. Some studies suggest that CSR activities can enhance financial performance by building trust and goodwill (Iyoha & Oyerinde, 2010), while others caution against potential resource diversion from core banking operations (Olayinka & Temitope, 2011). The existing literature presents mixed findings on the relationship between CSR expenditures and financial outcomes. For instance, Akpan et al. (2024) found a significant positive effect of CSR disclosures on the cost of equity capital of listed interest-taking banks in Nigeria. Conversely, Ezejiofor and Ezeabasili (2021) reported that environmental responsibility costs have a negative and insignificant influence on earnings per share of companies quoted in Nigeria. These divergent results underscore the need for further research to elucidate the dynamics between environmental responsibility costs and equity capital in the Nigerian banking context.

Moreover, many of these studies have not adequately accounted for firm-specific characteristics that could influence the observed relationships. One such characteristic is firm size, which can affect a bank's capacity to absorb environmental responsibility costs and its access to equity financing (Largeron et al., 2022). Larger banks may have more resources to invest in community development without compromising their financial stability, while smaller banks might face constraints. Incorporating firm size as a control variable could provide a more understanding of how environmental responsibility costs impact equity capital. The lack of consensus in the literature and the limited consideration of moderating factors like firm size highlight a significant gap in our understanding.

Hypotheses

H_{01}: Community development expenditure has no significant effect on equity financing of banks in Nigeria.

H_{02}: Firm size has no significant effect on the relationship between community development expenditure and equity financing of banks in Nigeria.

2. LITERATURE REVIEW

Environmental Responsibility Cost

Environmental responsibility cost fundamentally represents the financial burden organizations undertake to address and manage their environmental impact. It is a reflection of an organization's commitment to sustainable development and responsible corporate behavior in the face of growing environmental concerns worldwide (Carroll & Shabana, 2010). Rather than being mere expenditures, these costs symbolize a strategic approach toward balancing economic objectives

with ecological and social imperatives, which has become increasingly critical in today's business environment (Porter & Kramer, 2006). The importance of these costs has surged as stakeholders—from investors to regulators and consumers—demand greater accountability for how organizations affect the environment (Delmas & Toffel, 2008).

The essence of environmental responsibility cost lies in its dual role as both a cost and an investment. Firms that dedicate resources to environmental responsibility often do so not only to comply with regulations but also to foster long-term resilience and competitive advantage (Hart & Milstein, 2003). This investment perspective acknowledges that integrating environmental stewardship into core business practices can mitigate risks and create value, rather than simply draining financial resources (Eccles, Ioannou, & Serafeim, 2014). Consequently, these costs are increasingly viewed as integral to a firm's sustainable growth strategy, helping to secure its social license to operate (King & Lenox, 2000).

Environmental responsibility cost also embodies a firm's recognition of its broader societal obligations. As businesses become more aware of their impact on natural ecosystems and communities, allocating resources toward environmental responsibility reflects a deeper ethical and strategic mindset (Carroll, 1991). This mindset shifts the perception of environmental costs from reactive penalties or burdens to proactive engagements in sustainability that align with evolving societal expectations (Vogel, 2005). At a conceptual level, these costs signify the tangible commitment of an organization to internalize the externalities of its operations. Environmental responsibility cost underscores the principle that companies should account for their environmental footprint within their financial and operational frameworks, rather than externalizing these impacts onto society or nature (Ayuso, Rodríguez, & Ricart, 2006). This internalization fosters accountability and transparency, signaling a responsible approach to resource use and ecological conservation (Gray, Kouhy, & Lavers, 1995).

Moreover, environmental responsibility cost reflects the dynamic nature of the business environment, where sustainable practices increasingly intersect with financial performance metrics. The evolving landscape requires firms to incorporate environmental considerations into their decision-making processes, making these costs a critical factor in both short-term financial management and long-term strategic planning (Sullivan & Gouldson, 2017). Firms that effectively manage these costs often benefit from enhanced stakeholder trust and improved reputational capital, which can translate into tangible financial advantages (Bansal & Roth, 2000).

Equity Finance

Equity finance refers to the method of raising capital by selling shares of a company to public or private investors in exchange for ownership stakes. Unlike debt financing, which involves borrowing funds with a fixed repayment obligation, equity financing allows firms to raise funds without incurring debt or fixed interest costs (Brealey, Myers, & Allen, 2020). Equity investors, in turn, receive returns in the form of dividends and capital gains, depending on the company's financial performance. This makes equity finance particularly attractive for firms seeking long-term funding without the burden of regular interest payments. One of the main advantages of equity financing is the flexibility it provides to businesses, especially during periods of uncertainty or expansion. Because equity capital does not require repayment on a fixed schedule, firms can allocate resources toward innovation, infrastructure, and operational growth (Ross, Westerfield, Jaffe, & Jordan, 2019). This is particularly relevant in volatile markets, where cash flows may be unpredictable, and taking on debt could endanger solvency. Additionally, equity financing brings

in investors who may contribute managerial expertise, strategic guidance, and business networks, thereby enhancing the firm's overall competitiveness.

However, equity financing also comes with trade-offs. Chief among these is ownership dilution, which reduces the control of existing owners or founders (Titman, Keown, & Martin, 2021). When a company issues new shares, the percentage of ownership held by existing shareholders decreases unless they buy additional shares. This dilution can affect decision-making authority and influence over corporate strategy. Moreover, shareholders expect transparency and profitability, which can create pressure on management to prioritize short-term returns over long-term value creation (Damodaran, 2012). The cost of equity is also typically higher than the cost of debt because equity holders assume greater risk—they are paid after debt holders in the event of liquidation. As a result, investors demand higher returns to compensate for the risk, which can raise the company's weighted average cost of capital (WACC) (Hillier, Grinblatt, & Titman, 2012). For this reason, financial managers must carefully assess the optimal capital structure—balancing debt and equity—to minimize costs while maintaining financial flexibility and shareholder value. Equity financing plays a vital role in the banking industry, particularly given the strict capital adequacy requirements imposed by regulators such as the Basel Committee on Banking Supervision. Adequate equity capital buffers protect banks from insolvency during financial shocks and maintain confidence among depositors and investors (Berger & Bouwman, 2013). In this context, equity capital is not merely a source of funding but also a signal of financial resilience and credibility. It allows banks to absorb unexpected losses, meet regulatory benchmarks, and maintain access to capital markets during periods of stress.

In emerging markets like Nigeria, equity financing remains a critical yet underutilized tool for business growth. The Nigerian banking sector has faced unique challenges, including volatile exchange rates, regulatory constraints, and limited investor confidence, all of which impact equity market participation (Okoye, Evbuomwan, & Modebe, 2016). Many banks rely heavily on retained earnings and debt instruments, often overlooking equity due to concerns about dilution and weak market infrastructure. However, as regulatory frameworks strengthen and sustainability considerations gain prominence, equity financing is gradually being recognized as essential for long-term growth and environmental accountability.

Stakeholder Theory

The Stakeholder Theory, first articulated by Freeman (1984), provides a comprehensive lens through which the relationship between businesses and their broader societal responsibilities can be examined. Unlike traditional corporate theories that focus solely on shareholders as the primary beneficiaries of a firm's actions, Stakeholder Theory expands this perspective to include all individuals or groups that can affect or be affected by the firm's operations. These stakeholders include employees, customers, suppliers, communities, governments, and even the environment. The theory argues that long-term success and sustainability in business are best achieved when the interests of all stakeholders are taken into account—not just those of investors. This theory becomes particularly relevant as financial institutions are increasingly expected to align their operations with societal and environmental objectives. Banks do not operate in isolation; their activities influence economic development, environmental sustainability, and social welfare. According to Donaldson and Preston (1995), Stakeholder Theory is not only descriptive but also instrumental and normative—it describes how firms behave, suggests how they should behave, and explains how this behavior can improve organizational outcomes. By investing in community

development and environmental initiatives, banks signal their commitment to these broader responsibilities, thereby fulfilling the normative aspect of the theory.

Moreover, the theory suggests that banks' engagement in environmental responsibility, such as community development projects, can generate intangible benefits that contribute to financial stability. These may include enhanced reputation, customer loyalty, and stronger relationships with regulators and civil society (Clarkson, 1995). These outcomes, while not always immediately visible on financial statements, can bolster investor confidence and facilitate access to equity capital. In other words, a strong environmental and social performance can create a competitive advantage, particularly in markets where stakeholders actively reward responsible behavior (Freeman, Harrison, & Wicks, 2007). Stakeholder Theory also provides a theoretical justification for the inclusion of firm-specific characteristics—like firm size—as control variables in empirical analyses. Larger banks may have more capacity to absorb environmental responsibility costs without compromising profitability, while smaller institutions may perceive such investments as burdensome (Mitchell, Agle, & Wood, 1997). Thus, the theory supports a nuanced understanding of how different organizational attributes mediate the relationship between stakeholder engagement and financial outcomes, particularly equity financing.

Furthermore, the theory challenges the traditional belief that social and environmental expenditures are mere costs. Instead, it posits that these expenditures can be strategic investments that yield long-term returns by fostering stakeholder goodwill and reducing operational risks. This is particularly critical in the Nigerian banking context, where trust, transparency, and community engagement are essential for securing capital and retaining customer loyalty (Amaeshi, Adi, Ogbechie, & Amao, 2006). By applying Stakeholder Theory, this study investigates not just whether community development expenditure affects equity financing, but why such an effect exists and under what conditions it may be amplified or diminished. Stakeholder Theory also aligns with the global trend toward Environmental, Social, and Governance (ESG) integration in financial decision-making. Banks that ignore these dimensions risk regulatory backlash, reputational harm, and market exclusion (Kotsantonis, Pinney, & Serafeim, 2016). Conversely, those that internalize stakeholder expectations and invest accordingly are likely to enjoy sustainable access to capital markets. In this regard, Stakeholder Theory provides both a moral and strategic rationale for the growing importance of environmental responsibility in banking.

Prior Studies

Empirical investigations have consistently explored the intricate relationship between capital structure and firm performance. A study by Saeedi and Mahmoodi (2011) examining companies listed on the Tehran Stock Exchange found a significant positive relationship between debt ratios and firm performance metrics like return on equity and earnings per share. Similarly, Margaritis and Psillaki (2010) observed that leverage positively impacts firm efficiency, especially when firms use debt as a governance mechanism to reduce agency costs. Abor (2005), studying firms in Ghana, discovered that short-term debt positively affects performance, while long-term debt has a negative effect. These findings imply that optimal capital structure decisions are context-specific and influenced by a firm's internal and external environment. The impact of capital structure on performance often varies across industries and geographical contexts. Booth et al. (2001) provided cross-country evidence from developing economies and concluded that country-specific factors such as legal environment, tax policies, and financial market development significantly influence capital structure decisions. In Ethiopia, Alemu and Negash (2023) found that capital structure choices among manufacturing firms had a measurable effect on profitability, suggesting the

relevance of capital access in emerging economies. Moreover, Chen (2004) demonstrated that Chinese listed companies' capital structure decisions are not solely based on Western theories, emphasizing the influence of institutional factors and government ownership. These studies collectively affirm the importance of contextualizing capital structure theories within specific economic and regulatory settings.

Beyond static relationships, empirical studies have also explored how quickly firms adjust toward their optimal capital structure. Flannery and Rangan (2006) showed that U.S. firms exhibit a relatively high adjustment speed toward target leverage, challenging the Modigliani and Miller (1958) irrelevance theorem. Similarly, studies by Huang and Ritter (2009) confirmed that market timing plays a role in capital structure adjustment, where firms exploit favorable market conditions to issue equity or debt. These dynamic models suggest that capital structure is not only influenced by firm-specific fundamentals but also by timing, macroeconomic conditions, and market sentiment.

Parallel to the discourse on capital structure, environmental responsibility has attracted substantial empirical attention in recent years. Eccles et al. (2014) found that high-sustainability companies significantly outperformed their low-sustainability counterparts in both stock market and accounting performance over the long term. Similarly, a study by Qiu, Shaukat, and Tharyan (2016) on UK firms revealed that environmental disclosures are associated with improved financial performance, particularly for firms with high stakeholder engagement. These findings indicate that environmental responsibility is not merely a cost but a strategic investment that can yield financial dividends over time.

Corporate social responsibility (CSR), particularly its environmental dimension, has also been studied in relation to capital market behavior. Dhaliwal et al. (2011) provided evidence that firms disclosing CSR information enjoy lower cost of equity capital, especially when such disclosures are voluntary and credible. In Nigeria, Okafor, Hassan, and Awwal (2021) reported a positive relationship between CSR disclosures and market valuation of interest-taking banks, indicating that investors reward environmentally responsible behavior. However, other studies such as Uwuigbe and Uadiale (2011) suggested that while CSR enhances corporate image, its direct impact on short-term profitability may be limited. These mixed findings highlight the need for a nuanced understanding of how capital markets perceive and respond to environmental responsibility initiatives.

Several empirical studies have addressed the potential trade-offs associated with environmental responsibility costs. For instance, Lioui and Sharma (2012) observed that while environmental investment could negatively impact current earnings, it often leads to increased long-term firm value through reputational gains and operational efficiencies. Studies have also emphasized the role of moderating factors. Ameer and Othman (2012) noted that firm size, industry type, and environmental regulations significantly affect the extent to which environmental responsibility influences financial outcomes. Similarly, Yusoff et al. (2022) demonstrated that large firms are better positioned to absorb environmental responsibility costs without compromising equity financing capacity. These findings suggest that the financial implications of environmental responsibility are contingent on both internal capabilities and external pressures.

3. METHODOLOGY

The study adopted an ex post facto research design to examine the effect of environmental responsibility cost, proxied by community development expenditure, on equity financing of listed banks in Nigeria. This design was considered appropriate because the study relied on historical

financial data that could not be manipulated or altered by the researcher. The population of the study comprised all 21 banks listed on the Nigerian Exchange Group (NGX) as of 2023. A purposive sampling technique was employed to select a sample of 13 banks based on the availability and consistency of relevant data on community development expenditure and equity financing for the ten-year period from 2014 to 2023. Secondary data were utilized for the study and were extracted from the annual financial statements and sustainability reports of the selected banks. The key variables included community development expenditure (independent variable), equity financing (dependent variable), and firm size (control variable), measured using total assets. Descriptive statistics were employed to summarize the data, while inferential statistics, specifically multiple regression analysis, were used to examine the relationship among the variables. The analysis was conducted using E-Views statistical software to ensure precision and reliability in the estimation of the model parameters. The study specified the following multiple regression model:

$EF = \beta_0 + \beta_1 CDE + \beta_2 FSIZE + \epsilon$

Where:

- EF = Equity Financing for bank (dependent variable)
- CDE= Community Development Expenditure for bank (independent variable)
- FSIZE = Firm Size for bank (control variable, proxied by the natural logarithm of total assets)
- $\beta 0$ = Constant term (intercept)
- $\beta 1, \beta 2$ = Coefficients of the explanatory variables
- ϵ = Error term

4. RESULTS, CONCLUSION AND RECOMMENDATIONS

Descriptive Result

	EQTY_RATIO	COMM_DEV	FIRMSZ
Mean	1.066603	5.850589	9.131082
Median	1.074314	7.113943	9.313448
Maximum	1.942229	9.408420	10.74871
Minimum	-0.284774	0.000100	6.619356
Std. Dev.	0.277103	3.001528	0.898961
Skewness	-0.869674	-1.210350	-1.253181
Kurtosis	8.999026	2.906807	4.293022
Jarque-Bera	209.6983	31.54305	42.75143
Probability	0.000000	0.000000	0.000000
Sum	137.5918	754.7260	1177.910
Sum Sq. Dev.	9.828615	1153.174	103.4407
Observations	**129**	**129**	**129**

Source: Eviews 9.0

Based on the descriptive statistics from the study, the average equity ratio (EQTY_RATIO) of the sampled banks over the 2014–2023 period was approximately 1.07, indicating that, on average, shareholders' equity slightly exceeded the banks' total assets. However, the minimum value of -0.28 suggests that some banks experienced negative equity during certain years, which could reflect financial distress or accumulated losses. The standard deviation of 0.28 shows a moderate spread in equity financing among the banks, while the skewness of -0.87 and high kurtosis of 8.99

suggest that the distribution is negatively skewed and leptokurtic (with heavier tails), meaning a few banks had extreme values that deviated significantly from the mean.
For community development expenditure (COMM_DEV), the mean value stood at 5.85, with a wide range from as low as 0.0001 to as high as 9.41, indicating notable disparities in how much banks invested in environmental and community-related initiatives. The standard deviation of 3.00 reflects substantial variation in commitment to community development. The negative skewness (-1.21) implies that most banks spent relatively high amounts, with a few spending significantly less. Firm size (FIRMSZ), measured as the natural log of total assets, had a mean of 9.13, indicating that most banks in the sample were large-scale institutions. However, the spread from 6.62 to 10.75 shows a wide range of sizes, with a distribution also skewed to the left (-1.25), suggesting that while most banks were large, some considerably smaller institutions were included.

Regression Analysis

Dependent Variable: EQTY_RATIO

Method: Panel Least Squares

Date: 06/03/25 Time: 08:32

Sample: 2014 2023

Periods included: 10

Cross-sections included: 13

Total panel (unbalanced) observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
COMM_DEV	0.025074	0.009623	2.605746	0.0119
FIRMSZ(COMM_DEV)	-0.087854	0.029305	-2.997931	0.0041
C	1.785202	0.259532	6.878542	0.0000

R-squared	0.188197	Mean dependent var	1.086647
Adjusted R-squared	0.157563	S.D. dependent var	0.261744
S.E. of regression	0.240240	Akaike info criterion	0.037729
Sum squared resid	3.058916	Schwarz criterion	0.146230
Log likelihood	1.943588	Hannan-Quinn criter.	0.079795
F-statistic	6.143398	Durbin-Watson stat	0.890720
Prob(F-statistic)	0.003985		

Source: EViews 9.0

The regression results reveal that community development expenditure (COMM_DEV) has a positive and statistically significant effect on the equity ratio of listed banks in Nigeria. With a coefficient of 0.0251 and a p-value of 0.0119, the result indicates that a unit increase in community

development expenditure is associated with a 2.5% increase in equity financing, holding firm size constant. This implies that banks that invest more in community-related initiatives may build stronger reputations, stakeholder trust, or sustainability ratings, which can enhance investor confidence and, in turn, improve their equity position. The constant term (1.7852) is also significant, suggesting that in the absence of both explanatory variables, banks still maintain a strong baseline equity level. On the other hand, firm size (FIRMSZ) shows a negative and significant relationship with the equity ratio, with a coefficient of -0.0879 and a p-value of 0.0041. This suggests that larger banks tend to rely less on equity financing relative to their total assets, possibly because they have better access to alternative funding sources such as debt or retained earnings. The model's R-squared value of 0.1882 indicates that approximately 18.8% of the variation in equity financing is explained by community development expenditure and firm size. Although modest, the F-statistic (6.14, p = 0.0039) confirms the overall significance of the model. However, the Durbin-Watson statistic (0.89) suggests the possible presence of positive autocorrelation in the residuals, which may require further diagnostic testing or model refinement.

Hypotheses

Ho2. Community development expenditure has no significant effect on equity financing of banks in Nigeria.

Decision: Reject the null hypothesis. The coefficient of community development (COMM_DEV) is 0.025074 with a p-value of 0.0119, which is less than the 0.05 significance level. Therefore, is a statistically significant positive effect of community development expenditure on equity financing. Hence, community development positively influences the equity capital structure of banks in Nigeria.

Ho1. Firm size has no significant effect on the relationship between community development expenditure and equity financing of banks in Nigeria.

Decision: Reject the null hypothesis. The coefficient of firm size (FIRMSZ(COMM_DEV)) is -0.087854 with a p-value of 0.0041, which is also below the 0.05 threshold. Bases on the analysis, firm size has a statistically significant negative moderating effect on the relationship between community development expenditure and equity financing. Thus, larger banks tend to rely less on equity financing despite community development efforts.

Conclusion

The study concluded that community development expenditure has a significant positive effect on the equity financing of listed banks in Nigeria, indicating that increased investment in community-oriented initiatives can enhance a bank's equity position. Conversely, firm size was found to have a significant negative influence, suggesting that larger banks tend to depend less on equity financing, possibly due to their broader access to alternative funding sources. These findings highlight the strategic value of environmental and social responsibility in strengthening financial structure, particularly for small to mid-sized banks seeking to build investor confidence and long-term capital sustainability.

Recommendations

The following recommendations were made for the study;

1. Banks should strategically increase investments in community development initiatives as part of their environmental and social responsibility efforts. Such expenditures not only

enhance corporate image and stakeholder trust but also contribute positively to equity financing by attracting socially conscious investors and strengthening long-term financial sustainability.

2. Regulatory bodies and financial institutions should tailor financial policies to encourage equity-based financing, especially for smaller banks, which can benefit more from community engagement activities. Support mechanisms such as sustainability-linked incentives or reporting frameworks can help align environmental responsibility with capital structure decisions.

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