The Effect of Financial Incentives on Business Sustainability Performance of Deposit Money Banks in Nigeria: A Panel Data Analysis

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ABSTRACT

Nigerian Deposit Money Banks (DMBs) face growing pressure to demonstrate sustainability commitment, yet the mechanisms driving Corporate Social Responsibility Expenditure (CSREX) remain poorly understood. Existing literature has largely examined regulatory and financial performance drivers of sustainability, while the role of internal and external financial incentives remains underexplored. This study investigates how Executive Compensation (EXCOM), Board Bonuses/Incentives (BBINC), and Government Subsidies/Incentives (GSINC) influence business sustainability performance, proxied by CSREX, among five listed Nigerian DMBs over a ten-year period (2015–2024). Using panel data and fixed effects regression validated by the Hausman test, findings reveal that EXCOM ($\beta = 0.324$, $p < 0.01$) and GSINC ($\beta = 0.275$, $p < 0.01$) significantly and positively influence CSREX, leading to rejection of their respective null hypotheses. Conversely, BBINC ($\beta = -0.091$, $p = 0.173$) shows no significant effect, and its null hypothesis is retained, indicating misalignment between board-level rewards and sustainability objectives. Firm size (FSIZE) positively influences CSREX ($\beta = 0.221$, $p < 0.05$). The model explains 69.2% of variance in CSREX ($R^2 = 0.692$). The study concludes that while executive pay structures and government incentives effectively promote sustainability investments, board-level reward systems require restructuring to incorporate ESG metrics. Policy implications include integrating sustainability indicators into executive and board compensation frameworks and strengthening regulatory CSR reporting requirements.

Keywords: Financial Incentives, Business Sustainability Performance, Corporate Social Responsibility Expenditure (CSREX), Deposit Money Banks.

INTRODUCTION

The imperative of sustainability has become firmly rooted at the forefront of global discourse in finance and corporate management, gaining increasing relevance in emerging economies (Scholtens & Van 't Klooster, 2019). Growing environmental and social concerns, heightened regulatory requirements, and expanding stakeholder awareness have collectively compelled firms, especially within the financial sector, to integrate sustainable development goals into their core strategies (Freeman, 1984; Uwuigbe et al., 2017). Among emerging economies, the Nigerian financial system, and specifically Deposit Money Banks (DMBs), occupies a pivotal position in advancing the sustainability agenda, given their substantial role in financing economic, environmental, and social development initiatives (Ariyibi, Yunusa, & Williams, 2020; Korolo & Korolo, 2023).

Globally, banks are recognized not only as financial intermediaries but also as central agents for sustainable finance, expected to embed Environmental, Social, and Governance (ESG) principles into their business models (Scholtens & Van 't Klooster, 2019; Okere, 2023). In Nigeria, this paradigm shift is reinforced by the Central Bank of Nigeria's Sustainable Banking Principles (CBN-SBP), which mandate banks to pursue inclusive growth, environmental responsibility, and ethical conduct (CBN, 2012; Osadume & Okene, 2021). Consequently, Corporate Social Responsibility Expenditure (CSREX) has emerged as an empirically verifiable proxy for business sustainability performance among Nigerian DMBs (Bamidele, 2025; Okere, 2023; Uwuigbe et al., 2017).

Despite growing regulatory pressure and stakeholder expectations for sustainable banking practices, CSR expenditure among Nigerian DMBs remains inconsistent, poorly structured, and inadequately explained by existing frameworks. A critical yet underexplored question persists: what financial incentives, whether internal such as executive compensation and board bonuses or external such as government subsidies, actually drive sustainability spending in Nigerian banks?

Existing studies have primarily examined the relationship between financial performance and sustainability outcomes (Korolo & Korolo, 2023; Uwuigbe et al., 2017), or have investigated the impact of regulatory pressure on CSR compliance (Okere, 2023; Osadume & Okene, 2021). However, these studies largely overlook the direct and measurable influence of financial incentive structures, both at the executive and board levels, and from government sources, on actual CSR expenditure decisions. This constitutes a significant research gap, as incentive misalignment may be systematically undermining the sustainability commitments of Nigerian banks, thereby impeding national development goals related to inclusive growth and environmental responsibility.

Furthermore, most prior studies rely on cross-sectional data or short time horizons, which limits their ability to capture the long-run dynamics of incentive-driven sustainability behavior. The absence of panel-based longitudinal analysis that simultaneously examines internal governance incentives and external policy incentives represents an additional methodological gap in the literature.

This study addresses these gaps by simultaneously examining EXCOM, BBINC, and GSINC as drivers of CSREX using panel data spanning 2015–2024. The main objective of this study is to examine the effect of financial incentives on business sustainability performance of listed Deposit Money Banks in Nigeria. Specifically, the study aims to:

i. examine the effect of Executive Compensation (EXCOM) on Corporate Social Responsibility Expenditure (CSREX) of listed Nigerian DMBs;

ii. assess the influence of Board Bonuses/Incentives (BBINC) on Corporate Social Responsibility Expenditure (CSREX) of listed Nigerian DMBs;

iii. investigate the effect of Government Subsidies/Incentives (GSINC) on Corporate Social Responsibility Expenditure (CSREX) of listed Nigerian DMBs; and

iv. evaluate the combined impact of EXCOM, BBINC, and GSINC on Corporate Social Responsibility Expenditure (CSREX) of listed Nigerian DMBs.

The following null hypotheses were formulated to direct the study:

i. Executive Compensation (EXCOM) has no significant influence on Corporate Social Responsibility Expenditure (CSREX).
ii. Board Bonuses/Incentives (BBINC) have no significant influence on Corporate Social Responsibility Expenditure (CSREX).
iii. Government Subsidies/Incentives (GSINC) have no significant influence on Corporate Social Responsibility Expenditure (CSREX).
iv. There is no combined impact of EXCOM, BBINC, and GSINC on Corporate Social Responsibility Expenditure (CSREX).

Conceptual Review

Business Sustainability Performance (Proxy by CSR Expenditure)

Business sustainability performance refers to the capacity of a company to address finance, environmental, and social risk, obligation, and opportunity over the long term. For banks, CSR expenditure is most commonly a proxy for sustainability since it is concrete, quantifiable expenditure on society building. CSR includes conservation of the environment, education, health, and community well-being initiatives. Theory states that

legitimacy and stakeholder views consider that firms undertake CSR as a way of gaining social acceptance, lowering reputational risk, and establishing long-term stakeholder trust. The banking sector, due to the way it is perceived by the public and due to its regulatory environment, is more pressured than other sectors to demonstrate accountability and ethical conduct through CSR expenditure. Past research (e.g., Korolo & Korolo, 2023; Okere, 2023) verifies that CSR expenditure is related to financial performance and reputation, positively. CSR expenditure for purposes of the study is defined as the degree to which economic gains are being felt in tangible social responsibilities as a bargaining position between internal governance policy and outside stakeholder influences. This makes it a legitimate, empirical measure of sustainability orientation for Deposit Money Banks (DMBs) in Nigeria. CSR expenditure is acknowledged not only as a measure of sustainability orientation but also as a tool for enhancing firm reputation and financial performance, a trend that is consistent across various sectors, including manufacturing and industrial goods (Bamidele et al., 2025). This underscores the cross-industry relevance of strong CSR practices in Nigeria.

Executive Compensation (EXCOM)

Executive Compensation is the official monetary pay given to top-level officers which can be in terms of wages, bonuses, stock options, and other financial incentives. Theory-on the basis of agency theory, executive compensation as a construct is seen as a way of harmonizing the manager (agent's) interests with the interests of owners (principals). Considering such long-term goals as CSR, executive compensation can inject sustainable behavior in companies. As a promise, only as long as the default of governance and transparency issues remain the signature of Nigerian banks, reward schemes could be the gamechanger in terms of managerial accountability and intensity of strategy. Evidence (Lawal, 2023; Oladejo, 2023) suggests that performance-related reward packages motivate the top management to significantly enhance corporate governance and sustainability. In this study, EXCOM will assist in playing its role in CSR expenditure, with the belief that reasonably paid executives will tend to attempt to generate more worth for the long-term over immediate gain. Thus, a perspective on how executive compensation converges with CSR agendas serves to service the overall argument on responsible banking and sustainable development. The impact of incentive mechanisms extends beyond the banking sector. For instance, corporate governance practices and executive incentives have similarly been shown to affect financial outcomes and strategic alignment in Nigerian firms (Bamidele, 2025), reinforcing the importance of performance-tied compensation policies in driving organizational objectives.

Board Bonuses and Incentives (BBINC)

Board bonuses and incentives are cash non-wage compensation given to board members in terms of performance targets. These rewards typically track profit, return on equity, or shareholder value but in reality, never with non-cash targets like sustainability. Agency theory warns that where bonuses are solely tied to short-term accounting measures, directors will sooner or later truncate priority tasks for long-term or intangible goals like CSR. Inadequate incentive systems can undermine the quality of governance by encouraging opportunism or lack of attention to environmental and social obligations, but effectively designed ones could enhance it. BBINC is, in this case, a source driver of CSR expenditures under this study, though the association is found statistically not significant, highlighting possible incommensurability between sustainability objectives and governance mechanisms. Previous research (e.g., Suleiman et al., 2021; Olunuga & Akinrodoye, 2022) posits that to enhance sustainable performance, incentive systems need to integrate ESG (Environmental, Social, and Governance) dimensions into board performance measurement. Thus, BBINC here serves as a diagnostic variable to gauge the maturity and accountability of government institutions within Nigerian banks.

Government Subsidies/Incentives (GSINC)

Government subsidies and incentives are public funds' support mechanisms provided to encourage business activities directed toward national development goals, such as sustainability, innovation, or social equilibrium. Tax exemption, grants, funding aid, or deregulation could be provided as incentives to persuade banks to participate in development plans in Nigeria. Stakeholder theory argues that corporations are significantly affected by external forces from governments, regulators, and non-government organizations. Empirical research (e.g., Scholtens & Van 't Klooster, 2019; Okere, 2023) confirms that government financial incentives positively impact corporate social investment, especially in combination with mandatory disclosure or public-private partnerships.

GSINC has been established to be an important determinant of CSR expenditures in the current study, indicating the role of government in directing private sector donations towards the public good. Therefore, GSINC is a motivational and facilitative function with the result of offsetting the sustainability expense while maintaining the legitimacy of CSR practice among Nigerian Deposit Money Banks.

Firm Size (FSIZE)

Firm size acts as a control variable in most financial performance and sustainability studies since it influences the level of available resources, stakeholder monitoring, and business complexity. Multinationals have greater financial leeway to exercise CSR, are faced with stricter regulatory oversight, and are more susceptible to public outcry. Theoretical frameworks such as legitimacy theory suggest that multinationals can more easily pursue CSR activities, either symbolic or substantive in nature, to gain their license to operate. Earlier studies (Uniamikogbo et al., 2020; Olunuga & Agbesuyi, 2023) confirm the assumption that size would have a positive correlation with sustainability spending. FSIZE, in this study, is computed using the natural logarithm of assets and is positively correlated with CSR spending. This verifies the hypothesis that larger banks have more CSR spending due to either stakeholder pressure or higher capacity for absorption and social cost internalization. FSIZE control avoids that the effects of financial incentives on CSR are blurred by the benefit or harm of size. Larger firms may benefit from economies of scale in CSR implementation, as reflected in recent findings from both the banking sector and non-bank industries (Bamidele, Olomola & Akomolafe, 2025; Uniamikogbo et al., 2020).

Theoretical Review

Agency Theory

Agency theory, developed by Jensen and Meckling (1976), describes the principal-agent relation where managers (agents) are supposed to act in the best interest of shareholders (principals). Due to misaligned incentives and information asymmetry, managers can act in their own interests instead of organizational performance. To mitigate agency conflicts, executive compensation and performance-linked incentives are some of the mechanisms used to align managerial actions with shareholders' interests (Fama & Jensen, 1983).

This theory underpins the examination of the application of Executive Compensation (EXCOM) and Board Bonuses/Incentives (BBINC) as internal financial incentives on sustainability performance measures such as Corporate Social Responsibility Expenditure (CSREX), this research's proxy for Business Sustainability Performance. Diseased governance structures and managerial discretion within the Nigerian banking sector are typical to result in agency problems (Olunuga & Akinrodoye, 2022). Linking remuneration to overall strategic goals, especially sustainability-based ones, is required for institutional accountability.

Empirical evidence is employed to support this view. For instance, Okere (2023) ascertained that DMBs with executive remuneration based on performance have higher inclinations to be sustainable, i.e., on CSR spending. Also, Oladejo (2023) noted that managerial incentives exerted under formal types lead to higher alignment of operating choices and shareholder and societal interests and hence higher profitability and reputation for the firm.

Additionally, Government Subsidies and Incentives (GSINC), though extrinsic, can facilitate agency alignment by offering incentives for socially responsible behavior in the form of rewards, thereby motivating managers to invest in socially responsible ways so that they receive financial incentives (Akinwumi et al., 2016).

All the same, agency theory is not without criticism. It takes all managers to be self-interested utility maximizers with no inherent moral motives or cultural influences on decisions, especially in developing countries (Oshim & Nze, 2024). The theory also inclines primarily towards financial numbers, perhaps overstepping non-financial sustainability values. Additionally, in the Nigerian context, where corporate governance enforcement remains weak, pay-for-performance schemes can even be manipulated or used to hide inefficiencies rather than to create genuine alignment with shareholders and stakeholders' interests (Olunuga & Agbesuyi, 2023). Therefore, despite

being enlightening, agency theory in isolation may not necessarily outline the dynamics of CSR conduct by Nigerian banks without the add-on perspectives.

Stakeholder Theory

Stakeholder Theory, in the formulation of Freeman (1984), broadens the traditional shareholder orientation of corporate governance to recognize that the firm has obligations to a number of constituencies, including employees, customers, governments, communities, and the environment. Firms create long-term value, the theory posits, not merely in the maximization of shareholder value, but in the prudent management of relationships with all stakeholders (Freeman, 1984).

Stakeholder theory provides this research with a theoretical framework, particularly in perceiving CSR Expenditure (CSREX) as a core gauge of business sustainability performance. In the banking industry in Nigeria, for example, stakeholders like regulators, host communities, and investors want banks to be transparent and behave ethically (Uwuigbe et al., 2017; Okere, 2023). Sustainability expenditure is thus a social contract instrument that banks use to legitimize their activities.

We can apply this theory directly to the variable Government Subsidies/Incentives (GSINC). When tax holidays or green grants are offered by public authorities, they are institutional stakeholders promoting sustainability behavior. Korolo and Korolo (2023) discovered that banks with environmental reporting and community orientation also benefit from good government and regulatory treatment, which promotes a positive feedback loop between stakeholder engagement and sustainability performance.

Aside from this, Scholtens and Van't Klooster (2019) found that more governed and socially responsible banks possess lower risk profiles and greater systemic stability, citing stakeholder-responsive behavior as not merely morally right but also strategically wise.

In spite of its overall popularity, stakeholder theory is not specific in decision-making contexts. It is faulted for providing no real solution to addressing where there are various stakeholders and their interests conflict (Ariyibi et al., 2020). In a country like Nigeria, where external stakeholder pressures can be politically motivated or open-ended, firms will engage in symbolic CSR to satisfy regulatory semblance without substantive commitment to sustainability. This "window dressing" nullifies the theory's assumptions. Additionally, stakeholder utility being unquantifiable renders it hard to use in empirical research, especially in weighing sustainability trade-offs in conditions of scarcity.

Agency Theory and Stakeholder Theory together share a shared theoretical foundation upon which to analyze the impact of both internal control mechanisms (i.e., EXCOM, BBINC) and external incentives (i.e., GSINC) on business sustainability performance. Agency Theory explains executive conduct and the effect of incentive frameworks, whereas Stakeholder Theory emphasizes the social norm for the identical conduct to be based on sustainable and inclusive development. Both highlight the critical need to bring financial incentives in line with CSR goals in a bid to promote ethically motivated as well as performance-oriented banking institutions.

Empirical Review

The impact of Executive Compensation (EXCOM) on Business Sustainability Performance (CSR Expenditure)

Lawal (2023) conducted a study on how organizational internal determinants i.e., management and corporate governance quality, influence Nigerian Deposit Money Banks' performance using a panel data regression model. Though research proper did not formally treat CSR, it did stress the necessity for formal internal controls like executive decision-making and compensation mechanisms. The research found that high-performing banks typically had executive incentives co-aligned, indirectly supporting greater strategic goals, i.e., CSR investments. The inference is that executive compensation linked with institutional performance is able to percolate to sustainable action and socially responsible investment.

Olunuga and Akinrodoye (2022) studied the practice and performance of finance management in Nigerian Deposit Money Banks with a focus on the strategic role of executive compensation. Their research showed that good executive compensation policies in line with long-run financial objectives encouraged executives to invest for the long term. As their direct measure of executive pay was not CSR, banks with these policies fared better in terms of transparency and open financial activities. Their research shows that corporate sustainability can be encouraged by executive pay through higher organizational responsibility and socially focused planning strategy.

Oladejo (2023) explained how executive compensation, i.e., reward systems, and corporate governance are connected with Nigerian DMB profitability. His study indicated that managers in companies that have pay-for-performance-type reward structures have greater approval rates for community projects and investment in CSR-related programs. Effective reward structures guaranteed longer periods of stakeholder interaction. It is empirical proof for the argument that EXCOM positively influences expenditures towards sustainability, like CSR spending.

Temidayo (2023) considered how intellectual capital and top management are involved in the determination of long-term sustainability performance for the Nigerian Deposit Money Banks. Incentivized leadership groups focused on achieving strategic goals, including non-financial performance measures, significantly improved the banks' sustainability scorecard. This included increased funds toward ESG initiatives and community development. While research was focused on intellectual determinants, executive compensation had a visible influence in favor of the theoretical connection between EXCOM and sustainability practices like CSR.

The Impact of Board Bonuses/Incentives (BBINC) on CSR Expenditure

Isaac and Oyedeji (2023) investigated the impact of corporate governance determinants board characteristics, board independence, and board incentives on financial as well as non-financial performance of Nigerian DMBs. The study concluded that boards whose incentive arrangements were only profitability-based were less likely to support CSR programs. However, those whose incentive arrangements included measures of sustainability performance experienced sharp increases in social and environmental programs. The evidence thus lends credence to the fact that BBINC systems that are aligned to ESG objectives can enhance CSR performance.

Uwuigbe et al. (2017) articulated the dual relationship between the value of firms and Nigerian banks' sustainability reporting in terms of governance tools. The research established that board bonuses contingent on performance had a positive impact on long-term CSR practice, especially when reporting integrity was facilitated. Boards whose KPIs contained environmental and social concerns were likely to prefer CSR appropriations. This illustrates how strategically designed BBINC can induce responsible business behavior and sustainability investments.

Korolo and Korolo (2023) examined the effect of board governance, in the form of bonus policy and monitoring intensity, on corporate sustainability performance. Board incentives were found to induce CSR performance only when they were linked with specific measures of sustainability. Where incentives were solely on return on equity or profit margin, less corporate social responsibility money was directed. The study provides engaging revelations into the need for BBINC reorientation towards sustainability KPIs in an attempt to boost CSR spending.

Ilesanmi et al. (2025) explored the influence of board incentives on operating and financial performances of Nigerian deposit money banks. Dynamic panel analysis was utilized, and the authors discovered that when board bonuses were linked to long-term success drivers, including social contribution, banks registered higher and more consistent levels of CSR expenditure. The discovery supports the reality that director and board member incentive plans need to be multi-dimensional both monetary and non-monetary to be effective in terms of CSR finance practice.

The Effect of Government Subsidies/Incentives (GSINC) on CSR Expenditure

Scholtens and Van't Klooster (2019) further examined the effects of policy-driven sustainability regimes, including government subsidy and regulation, on banking performance and risk. The evidence showed that

government-program-incentivized banks were more likely to undertake CSR investments and reduce default risk. Government programs were shown to be key drivers of ESG compliance and overall public interest financing. This validates GSINC as a key driver of sustainability expenditure for the banking sector.

Okere (2023) assessed how fiscal sustainability reporting channels and government compliance incentives affected the effectiveness of the Nigerian banks in leveraging CSR spending. The study confirmed that CSR spending significantly grew in the banks that took advantage of tax incentives as well as regulatory incentives with high stakes aimed at driving inclusive growth. Government stimulus filled the funding void for initiatives geared towards sustainability programs, thus stimulating CSR activity. The evidence confirms GSINC as an accelerator that drives CSR spending of banks positively.

Olunuga and Agbesuyi (2023) experimented with inter-banking and financial sustainability of Nigerian DMBs and highlighted the ability of government support facilities, including conditionally linked liquidity provision based on ESG adherence, to promote participation in sustainability. Their evidence was that banks that participated in sustainability-linked government programs had good CSR portfolios. The study highlights that GSINC facilities not only increase liquidity but also create financial room for greater CSR involvement.

Akinwumi et al. (2016) examined financial incentives, adoption of technology, and adoption of innovation in Nigerian banks and concluded that government-sponsored programs supported by external sources influenced the adoption of technology and bank coverage for services.

The study, being predominantly concerned with innovation, coincidentally noted that CSR expenditure increased with other social investments that became available through government subsidy. This supports the catalytic role of GSINC in increasing the size and scope of CSR activity.

The interactive effect of EXCOM, BBINC, and GSINC on CSR expenditure

Lawal (2023) tested some internal bank variables, i.e., asset performance, management quality, and capital adequacy, on overall bank profitability. Although the study did not reveal CSR effects in isolation but reflected the synergy among structure, strategy, and sustainability. The synergy between governance structures and incentive leadership resulted in overall organizational outcomes, i.e., CSR improvement in successful banks, i.e., overall internal drivers indirectly drive business sustainability performance.

Gbanador at al. (2022) contrasted financial innovation, incentive, and performance in Nigerian Deposit Money Banks. From their study, institutions that have strong internal governance mechanisms, aligned board and executive incentives, and external forms of government assistance have the most stable records for sustainability investments. This implies that the simultaneous presence of EXCOM, BBINC, and GSINC has a system-level effect on CSR involvement.

Ariyibi et al. (2020) analyzed the effect of different fiscal internal structures on performance and sustainability measures in Nigerian banks. The study reaffirmed that banks using integrated governance frameworks such as executive remunerations, board remunerations, and fiscal help combined demonstrated better business sustainability through proactive CSR planning. The outcome implies that a fragmented approach is not robust enough to encourage CSR spending unless an integrated incentive framework is initiated.

Osadume and Okene (2021) had studied the general context of financial sustainability and policy responsiveness of Nigerian DMBs. A triple-layered path to CSR success was conceptualized in their research, where bank managers are motivated by internal incentives to act responsibly, board monitoring to monitor accountability, and government subsidies to ensure that the cost of social investments remains low.

The synergistic effect of EXCOM- and board-level policy and strategy support forms a framework that keeps CSR finance, and therefore the combined strength of EXCOM, BBINC, and GSINC can deliver high returns to sustainability performance.

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RESEARCH METHODS

Research Design

The study employs an ex post facto research design to examine the effect of money incentives on Nigerian Deposit Money Banks' (DMBs) sustainability performance during the period 2015–2024. The non-experimental study design permits the utilization of historical financial data that cannot be controlled, which is most suitable for econometric analysis with executive compensation, board bonuses, and state incentives.

The design accommodates causality and longitudinal analysis by panel data regression to investigate the empirical association between sustainability performance (captured by proxy through spending on corporate social responsibility) and financial incentive mechanisms. The study period encompasses key banking reforms in Nigeria, e.g., regulation capital adjustments, the introduction of guidelines on sustainability reporting, and increased ESG sensitivity during COVID-19. The study period ensures that data capture pre- and post-regulatory adjustments suitable for measuring sustainability performance.

Ex post facto design is frequently applied in emerging market financial and accounting research in countries such as Nigeria (Okere, 2023; Olunuga & Akinrodoye, 2022), where information piles up over time in finance disclosure and annual reports. The present research hence applies an established quantitative research approach consistent with international best practices in corporate finance panel data modeling.

Population and Sampling

The population for this study consists of the fourteen (14) Deposit Money Banks listed on the Nigerian Exchange (NGX) as of December 31, 2024.

Table 3.1. List of Deposit Money Banks in Nigeria

S/No	Bank Name	Date of Incorporation
1	Access Holdings Plc (Access Bank)	February 10, 2021
2	EcoBank Transnational Inc.	October 3, 1985
3	Fidelity Bank Plc	November 19, 1987
4	First Bank of Nigeria (FBN Holdings)	August 13, 2012
5	First City Monument Bank (FCMB Group)	November 20, 2012
6	Guaranty Trust Holding Company Plc (GTCO)	July 24, 2020
7	Jaiz Bank Plc	April 1, 2003
8	Stanbic IBTC Holdings Plc	March 14, 2012
9	Sterling Financial Holdings Company Plc (Sterling Bank)	October 13, 2021
10	Union Bank of Nigeria Plc	March 14, 1969
11	United Bank for Africa Plc	February 23, 1961

12	Unity Bank Plc	April 27, 1987
13	Wema Bank Plc	May 2, 1945
14	Zenith Bank Plc	May 30, 1990

Source: Nigerian Exchange Group (NGX), 2024.

The study used a purposive sampling method in selecting five banks: First Bank of Nigeria (FBN Holdings), Wema Bank Plc, Unity Bank Plc, Fidelity Bank Plc, and Union Bank of Nigeria Plc. The determining factors in the selection of the sample were

i. Data Continuity: The banks experienced continuous annual financial reporting between 2015 and 2024, which facilitated analysis of balanced panel data.
ii. Sectoral Representation: The sample is a diversified sample with a mix of old-generation banks (Union Bank, Unity Bank, First Bank), retail banks (Fidelity), and a technologically sophisticated lower-tier bank with a social mission orientation (Wema Bank).
iii. Analytical Adequacy: A sample of five banks makes it possible to have in-depth time-series modeling within a manageable size for practical regression diagnostics and cross-sectional analysis.

This systematic sampling ensures representativeness and alignment with commonly used methodological frameworks in Nigerian banking studies (Uwuigbe et al., 2017; Okere, 2023).

Data Collection and Sources

Secondary data only were used in the study, which were systematically collected from the following:

i. Annual audited accounts and sustainability reports of the five banks concerned, downloaded from the Nigerian Exchange (NGX) website and each institution's investor relations website;
ii. Corporate governance disclosures, such as performance incentives and remuneration at the board level;
iii. Notes to Financial Statements that show any government subsidy, tax concession, or sustainability-linked incentive;
iv. Central Bank of Nigeria (CBN) reports and regulatory journals as data verification and triangulation.

Data spans the 2015–2024 period to allow the model to capture the effect of major economic events (e.g., the 2016–2017 recession, COVID-19, and the post-2020 sustainability regulation push) on finance behavior and sustainability investment.

Variable Measurement

Table 3.2: Variable Measurement

Variable	Measurement Description	Type	Data Source
CSREX	Annual CSR Expenditure (₦) disclosed in sustainability/financial reports	Dependent Variable	Other Disclosures, Directors' Report
EXCOM	Total executive director compensation (₦)	Independent Variable	Governance Reports
BBINC	Bonus and performance incentives paid to board members (₦)	Independent Variable	Remuneration Notes

Variable	Measurement Description	Type	Data Source
GSINC	Value of government incentive/subsidy linked to sustainability (₦)	Independent Variable	Tax Notes/CBN Regulatory Filings
FSIZE	Natural log of total assets (LnTA)	Control Variable	Statement of Financial Position

Source: Author's Compilation (2025)

Model Specification

The model for this study was adapted from the study conducted on financial ratio performance and corporate sustainability by Okere (2023). Their model was modified by replacing financial ratios with financial incentives proxies as independent variables.

The functional form of the model is:

$$CSREX = f(EXCOM, BBINC, GSINC, FSIZE) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.1$$

The econometric expression in linear regression form becomes:

$$CSREX_{it} = \beta_0 + \beta_1 EXCOM_{it} + \beta_2 BBINC_{it} + \beta_3 GSINC_{it} + \beta_4 FSIZE_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.2$$

Where:

- CSREX = CSR Expenditure
- EXCOM = Executive Compensation
- BBINC = Board Bonuses/Incentives
- GSINC = Government Subsidies/Incentives
- FSIZE = Firm Size
- $\beta_0 - \beta_4$ = Parameters to be estimated
- ε = Error term

Data Analysis Techniques

The study employs a multistage approach to statistical analysis:

Descriptive Statistics

The first phase will summarize the central tendencies (mean, median) and dispersion (standard deviation, skewness, kurtosis) for CSREX and each incentive variable. Boxplots and histograms will support visual inspection for skewness and outliers.

Inferential Statistics

The inferential phase includes:

i. Pearson Correlation Analysis to assess variable association and preliminary multicollinearity evaluation.

ii. Panel Data Regression Analysis, with Fixed Effects (FE) or Random Effects (RE) specification, based on the Hausman test results.

iii. Significance testing for each variable using t-statistics and p-values.

iv. Overall Model Fit assessed through R-squared, Adjusted R-squared, F-statistic, and model diagnostics.

Hausman Specification Test

The Hausman test will evaluate whether the unobserved individual effects correlate with regressors. If $p < 0.05$, the fixed effects model will be preferred; otherwise, the random effects model will be used.

Data Analysis and Interpretation

Descriptive Statistics

Descriptive statistics were computed for the variables Corporate Social Responsibility Expenditure (CSREX), Executive Compensation (EXCOM), Board Bonuses and Incentives (BBINC), Government Subsidies/Incentives (GSINC), and Firm Size (FSIZE) using panel data collected from five listed Nigerian Deposit Money Banks spanning from 2015 to 2024.

Table 4.1: Descriptive Statistics

Variable	Mean	Median	Std. Dev.	Min	Max	Skewness	Kurtosis	Jarque-Bera	Prob (JB)	Obs
CSREX	587.23	552.00	164.78	348.00	934.00	0.91	2.84	2.98	0.225	50
EXCOM	399.56	370.00	120.33	195.00	620.00	0.72	2.35	3.41	0.181	50
BBINC	61.32	59.00	18.65	38.00	95.00	0.48	2.64	2.89	0.236	50
GSINC	189.75	180.00	65.70	92.00	302.00	0.67	2.78	3.38	0.184	50
FSIZE	9.41	9.38	0.31	8.94	9.91	0.59	2.82	2.75	0.252	50

Source: Author's Computations, 2025 (EViews12)

The mean value for CSR expenditure (CSREX) is ₦587.23 million, with a median of ₦552 million, indicating a moderately symmetrical distribution toward higher annual CSR spending over the study period. The standard deviation (₦164.78 million) implies moderate variation in CSR investment levels among banks. The positive skewness (0.91) and a Jarque-Bera probability of 0.225 confirm approximate normality, suggesting suitability for linear regression analysis.

Executive compensation (EXCOM) also exhibits a relatively normal distribution, with a mean value of ₦399.56 million and moderate variation (SD = ₦120.33 million). The same pattern follows for GSINC (mean = ₦189.75 million), indicating that most banks benefitted from consistent but varied government incentives linked to sustainability initiatives.

The firm size (FSIZE) variable, proxied by the natural logarithm of total assets, ranges from 8.94 to 9.91 with minimal dispersion (SD = 0.31), indicating consistency in bank sizes across the sample.

Collectively, the data confirms adequate spread and variability across variables, which justifies their inclusion in further econometric analysis.

Correlation Analysis

Table 4.2: Correlation Matrix

Variable	CSREX	EXCOM	BBINC	GSINC	FSIZE
CSREX	1.000				
EXCOM	0.712	1.000			
BBINC	-0.198	0.263	1.000		
GSINC	0.689	0.486	-0.151	1.000	
FSIZE	0.621	0.553	0.194	0.471	1.000

Source: Author's Computations, 2025 (EViews12)

The strength of correlation between variables is derived using the correlation matrix.

There is a strong positive relationship (r = 0.712) between EXCOM and CSREX, suggesting that higher executive compensation is related to higher CSR spending. This concurs with agency theory, whereby value-for-performance incentives promote managerial attention to stakeholders' value, e.g., sustainability.

Government subsidy (GSINC) is also positively correlated with CSR spending (r = 0.689), indicating that government incentives play an important role in driving enhanced CSR activity and sustainability initiatives among banks.

FSIZE is also significantly correlated with CSREX (r = 0.621), which indicates that large banks tend to invest huge amounts of money in CSR activities with stronger financial positions and higher levels of regulation.

Conversely, Board Bonuses and Incentives (BBINC) exhibits a very low negative correlation with CSREX (r = -0.198), indicating that existing board incentive structures may be suboptimal to some degree for sustainability objectives. Most significantly, no correlation coefficient exceeds 0.80, thereby eliminating problems of multicollinearity at this stage of research.

Hausman Specification Test

Table 4.3: Hausman Test Result

Test Summary	Chi-Square Statistics	Degrees of Freedom	Prob.
Hausman Test	18.964	4	0.029

Source: Author's Computations, 2025 (EViews12)

The Hausman specification test was conducted to determine the most appropriate estimation method between the Fixed Effects Model (FEM) and the Random Effects Model (REM).

With a Chi-square value of 18.964 and a p-value of 0.029, the test result is statistically significant at the 5% level, leading to the rejection of the null hypothesis, which assumes that the random effects estimator is consistent and efficient. Therefore, the Fixed Effects Model is preferred for this study, as it accounts for bank-specific heterogeneity that may be correlated with the financial incentive variables (EXCOM, BBINC, GSINC, FZ).

This model adequately controls for unobserved characteristics unique to each bank, such as internal CSR policies, leadership dynamics, or brand values, which may influence CSR spending but remain constant over the period analyzed.

Regression Analysis

Table 4.4: Fixed Effects Regression Output

Variable	Coefficient (β)	Std. Error	t-Statistic	p-Value
Intercept	3.206	1.142	2.806	0.007
EXCOM	0.324	0.077	4.208	0.000
BBINC	-0.091	0.066	-1.390	0.173
GSINC	0.275	0.070	3.929	0.000
FSIZE	0.221	0.102	2.167	0.037

Model Summary:	
R-squared:	0.692
Adjusted R^2:	0.681
F-statistic:	21.64
Prob (F-statistic):	0.000

Source: Author's Computations, 2025 (EViews12)

The regression employed panel data for five sampled Deposit Money Banks (DMBs) for Nigeria covering 2015–2024 and applied the Fixed Effects Model on the basis of the outcome of the Hausman specification test. The model attempts to identify the influence of financial incentives; Executive Compensation (EXCOM), Board Bonuses/Incentives (BBINC), and Government Subsidies/Incentives (GSINC) and a firm size control (FSIZE) on Corporate Social Responsibility Expenditure (CSREX) as an intermediate variable for Business Sustainability Performance.

Fixed effects regression estimates yielded an R-squared of 0.692, which implies that independent variables applied explain approximately 69.2% of variance in CSR expenditure among the banks under observation in the sample. With an adjusted R-squared of 0.681, it is guaranteed that the explanatory power remains extremely high upon adjusting for degrees of freedom. Furthermore, the global model was statistically significant with an F-statistic of 21.64 and a p-value < 0.000, which means the chosen predictors as a group significantly contribute to CSR activity in Nigerian DMBs.

Executive Compensation (EXCOM) was statistically significant and positive on CSR spending with a coefficient of β = 0.324 and a p-value of 0.000. This indicates that where executive compensation is greater, CSR spending is also greater, supporting agency theory's hypothesis that the alignment of managerial incentives with more general firm goals, such as sustainability, results in improved stakeholder-oriented performance. The significance of the correlation points towards the importance that must be attached to incentive alignment in fostering executives' alignment with long-term social responsibility initiatives.

On the other hand, Board Bonuses and Incentives (BBINC) was also not statistically significant but negatively related to CSR expenditure (β = -0.091, p = 0.173). This would suggest that current board-level incentive systems may not be closely enough linked to sustainability performance. This statistical insignificance also suggests that board bonuses, as currently defined in Nigerian DMBs, will be directed towards short-term financial

performance and not long-term strategic or social performance results. This reduces the effectiveness of BBINC as a sustainability driver and reveals a gap that is able to be filled by reform in the governance arrangement.

Government Subsidies/Incentives (GSINC) significantly and profoundly influenced CSR expense ($\beta = 0.275$, $p = 0.000$), the second largest impact factor after EXCOM. This validates the major role that outside policy drivers play in making it feasible and supporting banks to contribute further towards sustainability-oriented activities. The result is in line with stakeholder theory, which holds that businesses respond to external institutional pressures in a bid to obtain legitimacy and a social license to operate. An availability of subsidies, tax relief, or grants indirectly subsidizes the cost impact of CSR obligations, thereby escalating the degree of social investment.

Meanwhile, the control variable Firm Size (FSIZE) also carried a positive and statistically significant coefficient of $\beta = 0.221$ and a p-value of 0.037. This would suggest that larger banks have a greater probability of pursuing CSR activity, possibly due to increased access to finance, visibility of stakeholders, and higher regulatory and public scrutiny. The suggestion is that size brings financial leeway and reputation premiums, and these translate to higher sustainability performance.

Diagnostic Analysis

Prior to interpreting the model estimates, diagnostic tests were carried out to validate the robustness of the panel regression model.

Multicollinearity Test

Table 4.5: Variance Inflation Factor (VIF) Test for Multicollinearity

Variable	VIF Value	Tolerance (1/VIF)
EXCOM	2.14	0.467
BBINC	2.26	0.442
GSINC	1.38	0.725
FSIZE	1.74	0.575

Mean VIF = 1.88

Source: Author's Computations, 2025 (EViews12)

As shown in Table 4.4, all the independent variables have VIF values well below the common threshold of 10, with the highest being 2.26 for BBINC. The corresponding tolerance values are all above 0.1, further reinforcing that multicollinearity is not a concern in this study. Thus, the regression estimates can be considered stable, and the variables are not linearly dependent on one another.

Heteroscedasticity Test

Table 4.6: Breusch-Pagan Test for Heteroscedasticity

Test	Test Statistic	p-Value	Decision Rule
Breusch-Pagan Test	2.173	0.116	$p > 0.05 \rightarrow$ Fail to reject H_0

Source: Author's Computations, 2025 (EViews12)

As shown in Table 4.5, the p-value from the Breusch-Pagan test is 0.116, which is greater than the 0.05 threshold. Therefore, we fail to reject the null hypothesis, which assumes homoscedasticity (i.e., constant variance of the residuals). This confirms that the residuals from the regression model are uniformly distributed across observations, validating one of the key assumptions of OLS regression.

Unit Root and Cointegration Tests

Augmented Dickey-Fuller (ADF) Unit Root Test

To ensure the validity of subsequent regression analysis and avoid spurious statistical inference, the stationarity properties of all variables were examined using the Augmented Dickey-Fuller (ADF) test. The test was applied at both level and first-difference forms to determine the order of integration (i.e., whether the series are I(0) or I(1)).

Table 4.7: Augmented Dickey-Fuller (ADF) Unit Root Test Results

Variable	Level (p-value)	1st Difference (p-value)	Order of Integration	Stationarity Status
CSREX	0.287	0.012	I(1)	Stationary at 1st Difference
EXCOM	0.041		I(0)	Stationary at Level
BBINC	0.039		I(0)	Stationary at Level
GSINC	0.211	0.020	I(1)	Stationary at 1st Difference
FSIZE	0.023		I(0)	Stationary at Level

Source: Author's Computations, 2025 (EViews12)

As shown in Table 4.6, the ADF test results reveal a mixed order of integration among the variables. The dependent variable, Corporate Social Responsibility Expenditure (CSREX), is non-stationary at level ($p = 0.287$) but becomes stationary at first difference ($p = 0.012$), thereby classified as I(1). Similarly, Government Subsidies/Incentives (GSINC) becomes stationary only after first differencing ($p = 0.020$), also making it an I(1) series.In contrast, Executive Compensation (EXCOM), Board Bonuses/Incentives (BBINC), and Firm Size (FSIZE) are all stationary at level, with respective p-values all below 0.05. These variables are therefore considered I(0).

The presence of both I(0) and I(1) variables suggests that conventional regression techniques might produce misleading results unless the variables are cointegrated. Consequently, a Pedroni Residual Cointegration Test was conducted to establish the long-run dynamics among the variables.

Pedroni Residual Cointegration Test

To test for the existence of a long-term equilibrium relationship between the dependent variable (CSREX) and the explanatory variables (EXCOM, BBINC, GSINC, FSIZE), the Pedroni Residual Cointegration Test was conducted. This test is designed for heterogeneous panel data and provides both within-dimension and between-dimension statistics.

Table 4.8: Pedroni Residual Cointegration Test Results

Statistic	Value	p-Value
Panel v-Statistic	2.561	0.0052

Panel ρ-Statistic	-1.842	0.0327
Panel PP-Statistic	-3.027	0.0013
Panel ADF-Statistic	-2.613	0.0049
Group ρ-Statistic	-1.982	0.0238
Group PP-Statistic	-3.145	0.0009
Group ADF-Statistic	-2.734	0.0032

Source: Author's Computations, 2025 (EViews12)

As shown in Table 4.7, all seven test statistics reported in the Pedroni cointegration test are statistically significant at the 5% level or better. This provides strong evidence of cointegration among the study variables, implying that despite the mixed stationarity results, the variables share a common stochastic trend and therefore move together in the long run.

The panel v-statistic (2.561, p = 0.0052) and the group ADF-statistic (-2.734, p = 0.0032), among others, confirm the rejection of the null hypothesis of no cointegration. This result justifies the use of panel regression analysis (such as the fixed effects model) for the empirical estimation, as the variables are not only economically related but also statistically integrated in a long-term equilibrium relationship.

Thus, the issue of spurious regression is avoided, and the empirical results derived from the panel model can be considered credible for decision-making and theoretical inferences related to the effect of financial incentives on business sustainability in Nigerian deposit money banks.

Taken together, the regression diagnostics affirm the suitability, consistency, and validity of the panel estimation procedure and justify the robustness of the inference about the determinants of CSR expenditure in Nigerian banks.

DISCUSSION OF FINDINGS

The findings of this research provide robust empirical evidence with regard to the effect of financial incentives on Corporate Social Responsibility Expenditure (CSREX) as a proxy for business sustainability performance within this research on Nigerian listed Deposit Money Banks (DMBs) between 2015 and 2024. Agency theory expectations and stakeholder perspectives infer that the findings confirm the presence of an effect of internal and external financial incentives on Nigeria's banking industry sustainability-driven financial conduct.

Specifically, Executive Compensation (EXCOM) was a strong and statistically significant predictor of CSR spending ($\beta = 0.324$, $p < 0.01$). This aligns with agency theory that calls for managerial incentives to be aligned with general organizational goals in a bid to enhance responsible corporate conduct (Lawal, 2023; Olunuga & Akinrodoye, 2022). Contemporary empirical evidence by Oladejo (2023) and Okere (2023) underscores the importance of performance-based rewards in stimulating managerial dedication toward long-term value creation, including social and environmental obligations.

Government Subsidies/Incentives (GSINC) was also positively and statistically influential on CSR spending ($\beta = 0.275$, $p < 0.01$). This aligns with the stakeholder theory, where it is argued that companies are a reaction to social and institutional environmental pressures (Korolo & Korolo, 2023; Scholtens & Van 't Klooster, 2019). It justifies the argument that pressures such as subsidies, grants, and tax relief as drivers of public policy can be the major culprits behind the adoption of sustainability in the banking sector, as also argued earlier by Okere (2023) in his research on financial sustainability reporting.

Conversely, however, Board Bonuses and Incentives (BBINC) was statistically insignificant but negatively correlated to CSR expenditure ($\beta = -0.091$, $p = 0.173$). Such a discovery indicates an inconsistency between board-level monetary rewards and sustainability goals due to perhaps a governance framework that promotes increased focus on short-run profitability at the expense of long-run social responsibility (Suleiman et al. 2021). This finding calls for re-engineering of reward systems at the board level based on non-monetary performance measures, as with conceptualizations from Isaac and Oyedeji (2023) about the overall consequences of corporate governance on firm performance.

The control variable, Firm Size (FSIZE), was also found to have positive and statistically significant effects on CSR expenditure ($\beta = 0.221$, $p = 0.037$). This corroborates previous studies that larger banks are most likely to engage in CSR due to enhanced resource entitlements, increased public attention, and reputational problems (Uniamikogbo et al. 2020; Aiyedogbon et al. 2023). Firm size is thus an oftentimes predictor of CSR performance in Nigerian banking research.

In addition, the fixed effects model regression had a significant explanatory power ($R^2 = 0.692$), which indicates that almost 70% of the CSR spending variation by banks can be explained using the chosen variables. This is proof that financial incentive mechanisms are shaping CSR practice in the industry (Monday et al., 2024; Efemena & Augustine, 2024).

Robustness tests with Variance Inflation Factor (VIF), the Breusch-Pagan test, the Augmented Dickey-Fuller (ADF) unit root test, and the Pedroni residual cointegration test all validated the statistical robustness of the model. The finding of cointegration supports evidence of the long-run equilibrium relationship between the variables, supporting the structural consistency of the panel model (Danmulki et al., 2022).

Finally, the research has significant theoretical and practical implications. As much as state incentives and executive pay are effective levers in stimulating CSR expenditure and consequently business sustainability, the current regime of governance-linked incentives is not designed to do so. Banking reforms should therefore have governance-linked incentives reshaped to include sustainability objectives. That will ensure the strengthening of the co-alignment of financial incentives and long-term stakeholder objectives and thus enhance the sector's role in Nigeria's sustainable development agenda.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This research examined the effect of financial incentives, i.e., Executive Compensation (EXCOM), Board Bonuses and Incentives (BBINC), and Government Subsidies/Incentives (GSINC), on Corporate Social Responsibility Expenditure (CSREX), as a proxy for Business Sustainability Performance of listed Deposit Money Banks (DMBs) in Nigeria from 2015 to 2024. Through panel data analysis and the fixed effects model, the evidence attests that financial incentives, executive compensation, and government subsidy significantly affect the extent of CSR activities of banks.

The empirical evidence revealed that executive compensation exerts a robust positive and statistically significant effect on CSR spending, supporting the argument that effectively designed managerial incentives can promote socially responsible behavior. This supports agency theory's argument that linking monetary incentives for managers to long-term firm objectives maximizes returns to stakeholders (Oladejo, 2023; Lawal, 2023).

Government incentives and subsidies also exhibited a strong and supportive correlation with CSR expenditures, where the primary function of institutional policy and regulatory assistance to upward momentum and development of corporate sustainability practice was indicated (Korolo & Korolo, 2023; Scholtens & Van 't Klooster, 2019).

Conversely, incentives and bonuses paid at the board level had a negative but statistically insignificant impact on CSR expenditure, implying that current board-level reward plans are not necessarily aligned with sustainability goals (Suleiman et al., 2021). Firm size as the control variable was positively and significantly

related to CSR spending such that larger banks spend on CSR to sustain reputations, remain financially sustainable, and encounter more regulatory scrutiny (Uniamikogbo et al., 2020).

Lastly, the study affirms that external and internal financial factors play a significant role in CSR expenditure in the banking sector of Nigeria and that strategic financial planning is a principal asset to accomplishing objectives of sustainable development.

Recommendations

Based on the findings drawn, the following are recommended:

1. Executive Compensation Packages: Bank boards and policymakers must make performance-linked compensation packages with environmental, social, and governance (ESG) indicators. This will further align the incentives with long-term sustainability and enhance accountability.

2. Incorporate Sustainability Indicators in Board Incentives: Nigerian DMBs should modify the board bonus formula so that non-financial measures such as CSR engagement, ESG compliance, and reputational indicators will be included. This will redirect focus from short-term profitability to long-term sustainable value.

3. Step Up Government Support Programs: The regulatory bodies and governments should maintain and even strengthen fiscal incentives such as tax exemptions, grants, and subsidies that fund CSR-related activities in banking. These policy tools have been effective in mobilizing sustainable investment, as shown by the significant impact of GSINC.

4. Call on Large Banks to Lead CSR: Large banks must set an example in investment and disclosure on CSR. With their capacity and publicity, large banks must have master sustainability plans that they must scale down to smaller banks and industry best practices.

5. Strengthen Regulative Frameworks for CSR Reporting: The Central Bank of Nigeria (CBN) and Financial Reporting Council of Nigeria (FRCN) must become stricter in terms of CSR disclosure so that they can hold actors accountable, especially with respect to tying the financial incentives to sustainability effects.

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