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# Effect of Board Characteristics and Internal Control Quality on the Financial Performance of Deposit Money Banks in Nigeria

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## ABSTRACT

This study examined the effect of board characteristics and internal control quality on the financial performance of deposit money banks in Nigeria, with financial performance operationalised through two accounting outcomes, return on assets and return on equity. Two concerns motivated the enquiry. Recurrent episodes of bank distress and fraud have persisted in Nigeria despite successive governance reforms, which raises the question of whether board structure and control quality deliver measurable performance value in the sector expected to embody them; and the empirical literature has largely examined these mechanisms against a single profitability measure, leaving open whether they surface differently on the asset side and the equity side. Anchored on Agency Theory and complemented by Stewardship and Resource Dependence perspectives, the study specified board characteristics through board size, board independence and gender diversity, entered internal control quality as a fourth regressor, and regressed each of the two outcomes separately on this common set of predictors so that each objective corresponded to one performance dimension. Ten listed deposit money banks with complete records were selected purposively and observed over the period 2015 to 2024, yielding a balanced panel of 100 bank-year observations drawn from audited annual reports and regulatory publications. Data were analysed using descriptive statistics, Pearson correlation and panel regression, with the Hausman test used to select between the fixed and random effects estimators; the random effects estimator was preferred in both models. Board characteristics and internal control quality exerted no significant joint effect on return on assets ($R^2 = 0.026$, $F = 0.644$, $p = 0.633$), and the first null hypothesis was retained. The same predictors exerted a significant joint effect on return on equity ($R^2 = 0.183$, $F = 5.320$, $p = 0.001$), driven by board independence and gender diversity, and the second null hypothesis was rejected; internal control quality was insignificant in both models. The study concludes that the governance mechanisms examined register on shareholder returns rather than on asset efficiency, that gender diversity is the most robust governance signal in the data, and that the performance dividend of internal control accrues through risk containment rather than through immediate profitability. It recommends optimal rather than larger boards, deliberate strengthening of independence and female representation, and continued investment in internal control systems appraised on a defensive basis.

**Keywords:** Board Characteristics; Board Independence; Gender Diversity; Internal Control Quality; Return on Assets; Return on Equity; Deposit Money Banks; Nigeria

## INTRODUCTION

Banks occupy a central place in the Nigerian economy. They mobilise savings from surplus units, allocate credit to deficit units, and operate the payment infrastructure on which commerce depends. Deposit money banks carry the largest share of that burden, holding the bulk of sector assets and standing at the core of financial intermediation. How soundly these institutions are governed therefore matters well beyond their own balance sheets, since a governance failure in a systemically important bank transmits quickly to depositors, to the payment system and to the wider economy.

Corporate governance has for this reason become central to any account of bank performance, and within it the board of directors is the pivotal mechanism. Board characteristics such as size, independence, gender diversity, tenure and expertise shape the quality of monitoring, the pace and soundness of decision-making, and the extent to which managerial discretion is held to account (Ogunbanjo et al., 2025). Regulatory attention in Nigeria has

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reflected this, with the Central Bank of Nigeria placing sustained emphasis on board composition, the separation of the roles of chair and chief executive, and the oversight duties the board owes to shareholders and depositors alike.

Internal control quality is the second mechanism through which governance is expected to register in performance. Effective internal controls safeguard assets, secure the reliability of financial reporting, promote operational efficiency and enforce regulatory compliance. A competent and independent board is better placed to install and enforce sound controls, and sound controls in turn give the board the information it needs to monitor effectively, so the two mechanisms are treated together in this study as complementary determinants of performance rather than as unrelated influences.

Neither mechanism is costless, and neither pays automatically. Larger boards can dilute accountability and slow decision-making; independence and diversity impose search and coordination costs; internal control systems absorb continuous investment in monitoring, audit and compliance that yields no direct revenue. The commercial case for each therefore rests on an empirical claim rather than a self-evident one, namely that better governance and stronger controls translate into measurably better financial outcomes.

The evidence on that claim is unsettled. A recurring pattern of bank distress in Nigeria has been attributed to weak boards, ineffective control frameworks and poor risk management, which suggests that governance matters a great deal when it fails; yet empirical studies that test the positive side of the proposition report mixed and context-dependent results, with significant effects in some samples and insignificant ones in others (Adamu et al., 2022; Adewunmi et al., 2021). A structural feature of that literature helps explain the divergence: governance is commonly assessed against a single profitability measure at a time, which forecloses the possibility that a given mechanism registers on one dimension of performance while remaining silent on another.

Financial performance in banking is, however, not a single quantity. Return on assets and return on equity are related but conceptually distinct: the former measures how efficiently the asset base is deployed, while the latter measures the return generated on shareholders' capital, and the two respond to different drivers such as funding cost, leverage and the distribution of returns to owners. A governance mechanism that operates through the efficiency of asset deployment would register first in return on assets, while one that operates through the quality of strategic and risk decisions bearing on shareholder value would register first in return on equity. This study accordingly models the two outcomes separately, within a common sample, instrument and period, at the Nigerian deposit money banking sector over the ten-year period 2015 to 2024.

The study is guided by the following research questions:

i. What is the effect of board characteristics and internal control quality on the return on assets of deposit money banks in Nigeria?

ii. What is the effect of board characteristics and internal control quality on the return on equity of deposit money banks in Nigeria?

The main objective of the study is to examine the effect of board characteristics and internal control quality on the financial performance of deposit money banks in Nigeria. The specific objectives are to:

i. examine the effect of board characteristics and internal control quality on the return on assets of deposit money banks in Nigeria; and

ii. determine the effect of board characteristics and internal control quality on the return on equity of deposit money banks in Nigeria.

In line with the foregoing objectives, the following null hypotheses are tested:

*H01: Board characteristics and internal control quality have no significant effect on the return on assets of deposit money banks in Nigeria.*

*H02: Board characteristics and internal control quality have no significant effect on the return on equity of deposit money banks in Nigeria.*

## LITERATURE REVIEW

### *Financial Performance*

Financial performance in banking is conventionally assessed through accounting-based ratios that summarise how well an institution converts its resources into profit over a defined period (Akinbode et al., 2025). Return on assets relates net income to total assets and indicates how efficiently the asset base is deployed, which makes it sensitive to funding cost and to the productivity of earning assets. Return on equity relates net income to shareholders' funds and indicates the return generated on owners' capital, which makes it sensitive to cost structure, leverage and fee income. The two measures are correlated but not interchangeable, and the difference between them is what a design that tests both outcomes is able to exploit: a governance mechanism that operates through the efficiency of asset deployment would register first in return on assets, while one that operates through cost discipline or the distribution of returns to owners would register first in return on equity.

### Board Characteristics

Board characteristics are the traits, composition and conduct of the board of directors that shape an organisation's governance (Saidu et al., 2025). A well-constituted board aligns the interests of managers and owners, encourages accountability and constrains managerial opportunism (Taiwo et al., 2025). Three attributes are central to this study. Board size, the number of directors, carries a well-known tension: larger boards widen the pool of expertise but can dilute responsibility and slow decision-making, so that an optimal rather than a maximal size is what theory recommends. Board independence, the proportion of non-executive or independent directors, is expected to sharpen objectivity and monitoring, since independent directors are less beholden to management and better placed to protect shareholders (Fama & Jensen, 1983). Board gender diversity, the representation of women on the board, has been associated with more careful risk oversight, greater ethical sensitivity and improved decision quality, all of which are consequential in a sector where risk management is the core activity.

### Internal Control Quality

Internal control quality describes how well an organisation's internal procedures protect assets, secure the reliability of financial reporting, promote operational efficiency and enforce compliance (Omolade et al., 2025). Following the Committee of Sponsoring Organisations framework, a high-quality control system integrates a sound control environment, systematic risk assessment, effective control activities, reliable information and communication, and continuous monitoring. In banking, where the institution operates largely with depositors' funds and is exposed to complex risks, the quality of these controls bears directly on the soundness of the institution. For the purposes of this study, internal control quality is treated as an operating capability, measured through a composite index built on internal audit strength, control reporting, compliance with the Central Bank's code of corporate governance and the presence of reporting and whistleblower mechanisms, rather than as a mere disclosure.

### Theoretical Framework

The study is anchored on Agency Theory, developed by Jensen and Meckling (1976). The theory locates the governance problem in the separation of ownership from control: managers, as agents, may pursue their own objectives at the expense of the shareholders who own the firm, and the resulting agency costs are contained through monitoring mechanisms, of which an effective and independent board and a sound system of internal control are the most important. It follows that anything which strengthens monitoring, whether a more independent board, a more diverse one, or a more robust control environment, should reduce agency costs and register in performance. Applied to the two objectives of this study, Agency Theory provides a single coherent lens rather than separate grounds for each: the same monitoring mechanism is expected to bear on both return on assets and return on equity, with the two outcomes representing different accounting expressions of the reduction in agency cost that stronger governance produces.

Two further perspectives complete the framework. Stewardship Theory, associated with Donaldson and Davis (1991), offers a counterpoint: it treats managers as trustworthy stewards intrinsically motivated to act in the organisation's interest, so that cohesive leadership and empowerment, rather than tight constraint, drive performance. Resource Dependence Theory, advanced by Pfeffer and Salancik (1978), casts the board as a conduit to external resources, arguing that directors with diverse backgrounds and networks secure the capital, information and legitimacy on which the firm depends. Taken together, the three perspectives are complementary rather than contradictory: agency theory explains the board's monitoring role, stewardship theory its advisory and leadership role, and resource dependence theory its role in linking the bank to its environment. Collectively they predict that board characteristics and internal control quality should bear positively on both return on assets and return on equity, while leaving open how large, and how uniform across the two outcomes, that effect will be.

**Empirical Review**

Nigerian and international evidence on the governance–performance relationship is extensive but far from unanimous. Several Nigerian studies report favourable associations between board attributes and bank performance, with independence and diversity singled out as the attributes that most often carry a positive sign (Agazo, Miko & Mazadu, 2024; Aginam & Obi Nwosu, 2024; Anaba, 2026). Studies of internal control reach broadly similar conclusions, linking stronger control environments to better asset returns and lower operational risk (Agbo & Nwachukwu, 2025; Ashamu, Adedokun & Akinola, 2025; Wokeh, 2024). International evidence points the same way in several settings, including work on board independence and related-party transactions (Almaqtari et al., 2022) and on Indian banks (Bezawada & Adaelli, 2020), while more recent studies foreground the interaction of governance with audit and diversity variables (Ahmed, Hassan & Magar, 2026).

Against these, a substantial body of work reports weak or insignificant effects, particularly once bank-specific heterogeneity is controlled through panel methods, or finds that the sign and significance of a given attribute switch across specifications and samples. Two features of this literature bear on the present design. First, the studies disagree not only on magnitude but on direction, which suggests that the governance–performance relationship in banking is conditional rather than universal. Second, studies that measure performance through a single profitability proxy cannot detect whether a governance mechanism registers on one dimension of performance while remaining silent on another. This study addresses both features by estimating the effect of a common set of predictors against two performance dimensions, return on assets and return on equity, within a single sample.

**Gaps in Literature**

Three deficiencies emerge from the reviewed evidence. First, board characteristics and internal control quality have generally been examined in isolation, so that no clear account exists of their joint effect within a common sample. Second, studies operationalise performance through a variety of measures, which frustrates direct comparison and obscures whether different mechanisms surface in different ratios. Third, findings on the control environment are inconsistent, with significant effects reported in some samples and insignificant ones in others, and the Nigerian evidence base only partially covers the recent period in which digital banking, cybersecurity exposure and financial technology have reshaped the operating environment. This study addresses these gaps by estimating panel models for board characteristics and internal control quality against both return on assets and return on equity over the period 2015 to 2024, and by treating each performance dimension as a separate objective so that any divergence between the asset side and the equity side is surfaced rather than concealed.

# METHODOLOGY

An ex-post facto research design was adopted within a quantitative framework. The design suits the enquiry because the variables of interest, board characteristics, internal control quality and financial performance, are historical, already recorded in audited financial statements and regulatory returns, and beyond the researcher's manipulation (Kerlinger & Lee, 2000; Creswell, 2014). Because the data combine a cross-sectional dimension across banks with a time-series dimension across years, they were assembled as a panel, which exploits both sources of variation, controls for unobserved bank-specific heterogeneity and improves estimation efficiency.

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The population comprised the listed deposit money banks operating in Nigeria and recognised by the Central Bank of Nigeria over the study window. A purposive sampling technique was used to select ten banks on two criteria: the bank was quoted on the Nigerian Exchange Group throughout the period 2015 to 2024, and complete data on all study variables were available for every year. Banks with incomplete records or interrupted listing were excluded on the ground that a balanced panel improves the robustness of longitudinal analysis (Adeleke, Ogunleye & Afolabi, 2023; Bassey & Asuquo, 2024). The ten sampled banks observed over the ten years from 2015 to 2024 yielded a balanced panel of 100 bank-year observations.

The study relied exclusively on secondary data. Performance figures, board composition and internal control disclosures were extracted from the audited annual reports and accounts of the sampled banks, supplemented by Central Bank of Nigeria statistical bulletins, Nigerian Exchange Group publications and Nigeria Deposit Insurance Corporation reports. A structured extraction schedule was applied to keep measurement consistent across banks and years, and the data were coded in Microsoft Excel before analysis in EViews.

Financial performance, the dependent construct, was measured through two proxies that serve as the two outcomes of the study. Return on assets was measured as net income to total assets, and return on equity as net income to shareholders' equity. Board characteristics were captured through board size, the total number of directors; board independence, the proportion of independent directors; and board gender diversity, the proportion of female directors. Internal control quality was measured as a composite index constructed from the Central Bank of Nigeria code of corporate governance and the COSO elements of internal audit strength, control reporting and compliance. Each variable and its measurement are summarised in Table 1.

**Table 1: Measurement of Variables**

| **Variable** | **Symbol** | **Measurement** | **Source** |
|---|---|---|---|
| Return on Assets | ROA | Net income / Total assets | Annual reports |
| Return on Equity | ROE | Net income / Shareholders' equity | Annual reports |
| Board Size | BSIZE | Total number of directors | Annual reports |
| Board Independence | BIND | Proportion of independent directors to total directors | Annual reports |
| Gender Diversity | BGENDER | Proportion of female directors to total directors | Annual reports |
| Internal Control Quality | ICQ | Composite index of internal audit strength, control reporting and compliance with the CBN code (2014) and COSO elements (2013) | Annual reports |

*Source: Researcher's compilation (2026)*

Two models were specified to correspond with the study objectives, each regressing one performance outcome on the common set of four predictors so that the two accounting dimensions could be examined independently:

**Model 1 (Objective i – ROA):** $ROA_{it} = \beta_0 + \beta_1 BSIZE_{it} + \beta_2 BIND_{it} + \beta_3 BGENDER_{it} + \beta_4 ICQ_{it} + \mu_i + \varepsilon_{it}$

**Model 2 (Objective ii – ROE):** $ROE_{it} = \beta_0 + \beta_1 BSIZE_{it} + \beta_2 BIND_{it} + \beta_3 BGENDER_{it} + \beta_4 ICQ_{it} + \mu_i + \varepsilon_{it}$

where i indexes banks, t indexes years, $\beta_0$ is the intercept, $\beta_1$ to $\beta_4$ are slope coefficients, $\mu_i$ is the individual bank effect and $\varepsilon_{it}$ is the stochastic error term. Each objective was modelled separately in order to preserve the possibility that board characteristics and internal control quality affect the asset side and the equity side to different degrees. A priori, the coefficients were expected to be positive in both equations, consistent with the theoretical framework.

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS | Volume X Issue VII July 2026

Analysis proceeded in three stages. Descriptive statistics were computed to characterise the distribution of each variable, including the Jarque-Bera test of normality. A Pearson correlation matrix was estimated to establish the direction and strength of bivariate association and to screen for multicollinearity against the conventional 0.80 threshold. Each model was then estimated by pooled ordinary least squares, fixed effects and random effects, with the Hausman specification test used to select between the fixed and random effects estimators; where the Hausman statistic was insignificant at the five per cent level, the random effects estimator was preferred. Hypotheses were tested at the five per cent level using the probability values of the individual coefficients and the F-statistic of the overall model, with model adequacy also assessed through the coefficient of determination and the Durbin-Watson statistic.

## RESULTS AND DISCUSSION

### *Descriptive Statistics*

**Table 2: Descriptive Statistics of Study Variables**

| Statistic | ROA | ROE | BSIZE | BIND | BGENDER | ICQ |
|---|---|---|---|---|---|---|
| Mean | 0.0222 | 0.1509 | 12.86 | 0.2736 | 0.2599 | 0.8327 |
| Median | 0.0188 | 0.1222 | 13.00 | 0.2727 | 0.2857 | 0.8000 |
| Maximum | 0.1304 | 0.6344 | 20.00 | 0.6364 | 0.5000 | 0.9333 |
| Minimum | −0.1319 | −0.0745 | 7.00 | 0.0588 | 0.0000 | 0.7333 |
| Std. Dev. | 0.0309 | 0.1302 | 2.9095 | 0.1179 | 0.1123 | 0.0572 |
| Skewness | −0.6530 | 1.1549 | 0.3175 | 0.2794 | −0.3700 | 0.8971 |
| Kurtosis | 11.7916 | 4.5348 | 2.6343 | 2.9805 | 2.7370 | 2.4109 |
| Jarque-Bera | 329.16 | 32.05 | 2.24 | 1.30 | 2.57 | 14.86 |
| Probability | 0.0000 | 0.0000 | 0.3267 | 0.5213 | 0.2766 | 0.0006 |
| Observations | 100 | 100 | 100 | 100 | 100 | 100 |

*Source: Researcher's Computation (2026) using EViews 9.0*

The sampled banks recorded a mean return on assets of 0.0222 and a mean return on equity of 0.1509, implying that the average bank earned about 2.2 per cent on its assets and 15.1 per cent on shareholders' funds over the period. The average board comprised roughly thirteen directors, in line with the Central Bank's governance guidance; independent directors accounted for about 27 per cent of the board on average, and female directors for about 26 per cent, indicating moderate adherence to independence norms and a gradually improving but still minority female presence. Internal control quality averaged 0.833 on a normalised scale, pointing to generally satisfactory control environments across the sample.

Dispersion is itself informative. Return on assets is tightly clustered around its mean, while return on equity varies more widely, a pattern consistent with differences in leverage and cost structure across banks. Board size shows the widest dispersion of the governance variables, reflecting the coexistence of large and small institutions, whereas internal control quality is comparatively uniform, which is consistent with a common regulatory floor. The distributional evidence is mixed: board size, independence and gender diversity are close to symmetric, with Jarque-Bera probabilities comfortably above the five per cent threshold, so their use in parametric estimation is unproblematic, while return on assets is markedly leptokurtic and return on equity and internal control quality depart from normality, indicating that a small number of banks report unusually extreme values and that inference on those measures should be read with corresponding caution.

**Correlation Analysis**

**Table 3: Correlation Matrix of Study Variables**

| | ROA | ROE | BSIZE | BIND | BGENDER | ICQ |
|---|---|---|---|---|---|---|
| **ROA** | 1.0000 | 0.1735 | 0.0015 | 0.2576 | −0.1491 | 0.0607 |
| **ROE** | 0.1735 | 1.0000 | 0.2063 | 0.2160 | 0.3520 | −0.2524 |
| **BSIZE** | 0.0015 | 0.2063 | 1.0000 | −0.2024 | 0.0565 | −0.1340 |
| **BIND** | 0.2576 | 0.2160 | −0.2024 | 1.0000 | −0.0647 | 0.0429 |
| **BGENDER** | −0.1491 | 0.3520 | 0.0565 | −0.0647 | 1.0000 | −0.0363 |
| **ICQ** | 0.0607 | −0.2524 | −0.1340 | 0.0429 | −0.0363 | 1.0000 |

*Source: Researcher's Computation (2026) using EViews 9.0*

The correlation structure previews the regression results and is instructive on its own terms. Return on assets is most strongly associated with board independence ($r = 0.258$), while return on equity is most strongly associated with gender diversity ($r = 0.352$) and, more weakly, with board independence ($r = 0.216$) and board size ($r = 0.206$). Internal control quality correlates positively but weakly with return on assets ($r = 0.061$) and negatively with return on equity ($r = −0.252$), an early sign that its relationship with performance is neither strong nor uniform across the two outcomes. Board size is essentially unrelated to return on assets ($r = 0.002$), which anticipates its insignificance in the asset model. None of the pairwise correlations among the explanatory variables approaches the 0.80 threshold conventionally taken to signal severe multicollinearity, the largest in absolute terms being the −0.202 between board independence and board size, so multicollinearity is not a material concern and the two panel models can be interpreted independently.

**Test of Hypotheses**

***Hypothesis One***

*H01: Board characteristics and internal control quality have no significant effect on the return on assets of deposit money banks in Nigeria.*

To test this hypothesis, Model 1 was estimated, regressing return on assets on board size, board independence, gender diversity and internal control quality across the three panel estimators.

**Table 4: Effect of Board Characteristics and Internal Control Quality on Return on Assets (Dependent variable: ROA)**

| Variable | Pooled OLS | Fixed Effects | Random Effects |
|---|---|---|---|
| C | −0.0206 (0.6797) | −0.1276 (0.3544) | −0.0666 (0.4213) |
| BSIZE | 0.0007 (0.4951) | 0.0018 (0.1878) | 0.0014 (0.2625) |
| BIND | 0.0683 (0.0107) | 0.0140 (0.5966) | 0.0269 (0.2930) |
| BGENDER | −0.0369 (0.1750) | 0.0154 (0.6507) | 0.0004 (0.9883) |

| | | | |
|---|---|---|---|
| ICQ | 0.0291 (0.5864) | 0.1422 (0.3907) | 0.0759 (0.4278) |
| R-squared | 0.0905 | 0.4239 | 0.0264 |
| Adjusted R-squared | 0.0522 | 0.3368 | −0.0146 |
| F-statistic (prob.) | 2.363 (0.0585) | 4.868 (0.0000) | 0.644 (0.6325) |
| Durbin-Watson | 1.283 | 1.885 | 1.710 |

*Hausman test: $\chi^2 = 4.602$, df = 4, p = 0.3307 — random effects preferred*

*Source: Researcher's Computation (2026) using EViews 9.0. Each cell reports the coefficient with the probability value in parentheses.*

With the Hausman statistic insignificant (p = 0.3307), the random effects estimates are interpreted. None of the predictors carries a significant coefficient in the asset model: board size (β = 0.0014, p = 0.2625), board independence (β = 0.0269, p = 0.2930) and gender diversity (β = 0.0004, p = 0.9883) are all positive but statistically indistinguishable from zero, and internal control quality is likewise insignificant (β = 0.0759, p = 0.4278). The model explains only 2.6 per cent of the variation in return on assets and is not significant overall (F = 0.644, p = 0.6325). It is worth noting that the fixed effects specification, though not the one selected by the Hausman test, fits the data far better ($R^2 = 0.424$, F significant at one per cent), which indicates that most of the explained variation in asset returns is bank-specific and time-invariant rather than attributable to the governance variables themselves.

**Decision:** Since the overall model is insignificant (F = 0.644, p = 0.6325) and none of the predictors exerts an independently significant effect, the null hypothesis (H01) is not rejected. Board characteristics and internal control quality have no statistically significant joint effect on the return on assets of deposit money banks in Nigeria, a result consistent with the strand of the literature that reports weak governance effects on asset efficiency once bank-specific heterogeneity is controlled.

***Hypothesis Two***

*H02: Board characteristics and internal control quality have no significant effect on the return on equity of deposit money banks in Nigeria.*

To test this hypothesis, Model 2 was estimated, regressing return on equity on the same four predictors across the three panel estimators.

**Table 5: Effect of Board Characteristics and Internal Control Quality on Return on Equity (Dependent variable: ROE)**

| Variable | Pooled OLS | Fixed Effects | Random Effects |
|---|---|---|---|
| C | 0.2560 (0.1705) | 0.0216 (0.9679) | 0.2228 (0.4874) |
| BSIZE | 0.0096 (0.0176) | 0.0068 (0.2064) | 0.0077 (0.1176) |
| BIND | 0.3222 (0.0014) | 0.2049 (0.0505) | 0.2292 (0.0233) |
| BGENDER | 0.4065 (0.0001) | 0.3996 (0.0035) | 0.4105 (0.0007) |
| ICQ | −0.5080 (0.0122) | −0.1425 (0.8259) | −0.4084 (0.2715) |
| R-squared | 0.2873 | 0.5019 | 0.1830 |

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| | | | |
|---|---|---|---|
| Adjusted R-squared | 0.2573 | 0.4266 | 0.1486 |
| F-statistic (prob.) | 9.576 (0.0000) | 6.667 (0.0000) | 5.320 (0.0007) |
| Durbin-Watson | 1.053 | 1.466 | 1.363 |

*Hausman test: $\chi^2 = 1.329$, df = 4, p = 0.8565 — random effects preferred*

*Source: Researcher's Computation (2026) using EViews 9.0. Each cell reports the coefficient with the probability value in parentheses.*

The Hausman result again favours random effects (p = 0.8565). Here the picture is more differentiated than in the asset model. The equity model is significant overall (F = 5.320, p = 0.0007) and explains about 18.3 per cent of the variation in return on equity, and two predictors enter with positive and significant individual coefficients: board independence ($\beta = 0.2292$, p = 0.0233) and, more strongly, gender diversity ($\beta = 0.4105$, p = 0.0007). Board size is positive but insignificant ($\beta = 0.0077$, p = 0.1176), and internal control quality is negative and insignificant ($\beta = -0.4084$, p = 0.2715). The significant coefficients on independence and gender diversity are the clearest governance signal in the data and drive the overall significance of the model.

**Decision:** Since the overall model is significant (F = 5.320, p = 0.0007) and board independence and gender diversity exert independently significant positive effects, the null hypothesis (H02) is rejected. Board characteristics and internal control quality have a statistically significant joint effect on the return on equity of deposit money banks in Nigeria, an effect that operates chiefly through board independence and gender diversity and aligns with Agency Theory and Resource Dependence Theory.

**Table 6: Summary of Hypothesis Testing**

| **Hypothesis** | **Statement** | **Model / Outcome** | **Decision ($\alpha$ = 0.05)** |
|---|---|---|---|
| $H0_1$ | Board characteristics and internal control quality have no significant effect on the return on assets of deposit money banks in Nigeria. | Model 1 (ROA); F = 0.644, p = 0.6325 | Not rejected |
| $H0_2$ | Board characteristics and internal control quality have no significant effect on the return on equity of deposit money banks in Nigeria. | Model 2 (ROE); F = 5.320, p = 0.0007 | Rejected |

*Source: Researcher's Computation (2026)*

The two hypotheses are decided differently, and that divergence is the central empirical finding of the study. At the level of the outcome, board characteristics and internal control quality exert no significant effect on return on assets, so the first null is retained, but they exert a significant effect on return on equity, driven by board independence and gender diversity, so the second null is rejected. The governance mechanisms examined here therefore register on shareholder returns rather than on asset efficiency.

## DISCUSSION OF FINDINGS

The asset-side result carries a clear reading. None of the governance variables significantly explains return on assets, and the random effects model accounts for a very small share of its variation, while the fixed effects specification absorbs a much larger share into bank-specific effects. The natural interpretation is that differences in asset efficiency across Nigerian deposit money banks over this period were driven mainly by stable, institution-specific factors, such as scale, franchise and asset mix, rather than by year-to-year variation in board composition or control quality. This is consistent with the strand of the literature that reports weak or insignificant governance effects once heterogeneity is controlled, and it tempers any claim that board reform alone moves the asset-side ratio.

The equity-side result is more differentiated and more interesting. The model is significant overall, and board independence and gender diversity both enter with positive and significant coefficients, with gender diversity carrying the strongest single effect in the study. The independence result accords with Agency Theory, which holds that independent directors sharpen monitoring, reduce managerial opportunism and thereby protect the returns that accrue to owners. The diversity result aligns with Resource Dependence Theory and with a growing body of Nigerian and international evidence that gender-diverse boards improve oversight and decision quality; that it surfaces in return on equity rather than return on assets suggests the channel runs through the quality of strategic and risk decisions that bear on shareholder value rather than through raw asset efficiency. Read together, the two models illustrate the same governance mechanism producing different outcome patterns: it is silent on asset efficiency but active on shareholder returns, a divergence that a single-outcome design would not have surfaced.

Board size is insignificant in both models, which is consistent with the view that it is the appropriateness rather than the magnitude of board size that matters. A larger board widens expertise but can dilute accountability and slow decisions, so that the two effects offset and no net relationship with performance emerges, a pattern reported elsewhere in the Nigerian literature (Gyamerah, 2024).

Internal control quality is the clearest null in the study: insignificant in both models, and even negatively signed in the equity equation. Two readings are compatible with this. The first is that the composite index, built largely from disclosure-based components, captures the formal presence of controls rather than their operational effectiveness, so that variation in the measure need not track variation in the discipline that actually protects performance. The second, and not mutually exclusive, is that the performance dividend of internal control is defensive: it accrues through the losses, frauds and misstatements that do not occur, which a profitability regression over a decade of generally solvent banks is poorly placed to detect. On either reading, the absence of a significant coefficient is not evidence that controls are unimportant, but evidence that their value is not expressed in contemporaneous profitability.

One feature of the results deserves emphasis beyond the individual coefficients. The governance variables consistently explain more of the variation in return on equity than in return on assets, which indicates that whatever effect board structure has in this sample operates through shareholder returns rather than asset efficiency. Even at its highest, however, the explained variation is modest, so board characteristics and internal control quality operate alongside credit quality, macroeconomic conditions and cost structure rather than dominating them, and the coefficients reported here should be read as measures of a contribution rather than of a controlling influence.

## SUMMARY, CONCLUSION AND RECOMMENDATIONS

### Summary

This study examined the effect of board characteristics and internal control quality on the financial performance of deposit money banks in Nigeria between 2015 and 2024, with financial performance operationalised through return on assets and return on equity. Adopting an ex-post facto design and a balanced panel of 100 bank-year observations from ten purposively selected banks, it specified board characteristics through board size, board independence and gender diversity, entered internal control quality as a fourth predictor, and regressed each of the two outcomes separately on this common set of predictors. Estimation proceeded through pooled ordinary least squares, fixed effects and random effects, with the Hausman test selecting the random effects estimator in both models.

Board characteristics and internal control quality exerted no significant joint effect on return on assets ($R^2 = 0.026$, $F = 0.644$, $p = 0.633$), and the first null hypothesis was retained. The same predictors exerted a significant joint effect on return on equity ($R^2 = 0.183$, $F = 5.320$, $p = 0.001$), driven by board independence ($\beta = 0.2292$, p

= 0.0233) and gender diversity (β = 0.4105, p = 0.0007), and the second null hypothesis was rejected. Board size was insignificant in both models, and internal control quality carried an insignificant coefficient throughout.

**Conclusion**

The study concludes that, over the period examined, board characteristics and internal control quality function as complementary and modest determinants of bank performance whose measured contribution is greater for shareholder returns than for asset efficiency. The asset-side ratio is shaped mainly by stable, bank-specific factors that year-to-year governance variation does not capture, while the equity-side ratio responds to the composition of the board, most robustly to the presence of women on it. Internal control quality does not register in contemporaneous profitability, which is best understood as a reflection of its defensive value and of the disclosure-based nature of its measurement rather than as evidence of its irrelevance.

These conclusions carry qualifications that should not be set aside. The models explain a minority of the variation in performance, so the constructs examined here operate alongside credit quality, cost discipline and macroeconomic conditions rather than dominating them. And because the internal control index is built substantially from disclosure, the null result on it speaks to what the measure captures as much as to the underlying capability.

**Recommendations**

1. Deposit money banks should pursue an optimal rather than a larger board, since board size bore no significant relationship to either performance measure and oversized boards risk diluting accountability and slowing decisions.

2. Banks should deliberately strengthen board independence by appointing non-executive directors with genuine independence and relevant technical competence, given the positive and significant association between independence and shareholder returns.

3. Banks should continue to raise female representation on their boards, since gender diversity was the most robust governance determinant of return on equity in the sample.

4. Investment in internal control systems should continue notwithstanding its insignificant coefficient, because the value of such systems accrues defensively through the losses, frauds and misstatements they prevent rather than through immediate profitability, and should be appraised on that basis.

5. Regulators, including the Central Bank of Nigeria, the Nigeria Deposit Insurance Corporation and the Securities and Exchange Commission, should frame governance oversight around the operational effectiveness of controls and the substance of board composition rather than around formal disclosure, so that measurement tracks the attributes that carry a performance signal.

6. Investors and analysts appraising Nigerian banking equities should treat board independence and, in particular, gender diversity as material governance signals for shareholder returns, while recognising that governance explains only part of the variation in bank performance.

**Contribution to Knowledge**

Theoretically, the study extends the application of Agency Theory to Nigerian banking by showing that the board's monitoring value, where it appears at all in this sample, surfaces in shareholder returns rather than in asset efficiency, and by identifying gender diversity as the attribute through which it most robustly does so. Methodologically, it contributes by testing a common set of governance predictors against two conceptually distinct performance dimensions within a single sample, instrument and period, which allows the asset-side and equity-side channels to be distinguished, a divergence that a single-outcome design would conceal. Empirically, it supplies Nigerian evidence covering 2015 to 2024 that board characteristics and internal control quality are complementary and modest determinants of bank performance, that gender diversity carries a robust positive effect on return on equity, and that internal control quality does not register in contemporaneous profitability, a set of findings that qualifies the more sanguine claims of the earlier literature and reframes internal control as a defensive rather than a profit-generating capability.

**Suggestions for Further Studies**

Three extensions would strengthen the evidence base. First, a measure of internal control quality grounded in operational outcomes, such as realised control failures, restatements or fraud losses, rather than in disclosure, would test directly whether the null result reported here reflects the underlying capability or only the proxy. Second, a dynamic panel estimated by the system generalised method of moments would address the potential endogeneity between governance and performance that a static panel cannot resolve, and would accommodate the persistence evident in the fixed effects results. Third, extending the sample to include microfinance and financial technology institutions, and incorporating the mediating role of risk management quality, would test whether the modest governance effects found here hold under the digital and cybersecurity pressures now reshaping the sector.

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