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CORPORATE GOVERNANCE MECHANISMS AND FINANCIAL PERFORMANCE OF LISTED DEPOSIT MONEY BANKS IN NIGERIA: EVIDENCE FROM BOARD EVALUATION, WHISTLEBLOWING, AND ESG DISCLOSURE

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Abstract
This study examines the effect of selected corporate governance practices on the financial performance of listed deposit money banks in Nigeria. Corporate governance has become increasingly important in emerging economies due to its role in enhancing transparency, accountability, and overall organizational efficiency. Despite various regulatory reforms, concerns remain regarding the extent to which governance practices influence bank performance in Nigeria. The study specifically investigates board evaluation disclosure, whistleblowing policy disclosure, and environmental, social, and governance (ESG) disclosure as key governance mechanisms. Financial performance is measured using Return on Assets (ROA). The study adopts an ex post facto research design and utilizes secondary data obtained from the audited annual reports of twelve listed deposit money banks in Nigeria over the period 2020 to 2024. Panel data regression techniques, including descriptive statistics, correlation analysis, diagnostic tests, and the Hausman specification test, were employed to analyze the data. The findings reveal that whistleblowing policy disclosure and ESG disclosure have positive and statistically significant effects on financial performance, indicating that stronger transparency and sustainability practices enhance profitability. However, board evaluation disclosure shows a positive but statistically insignificant effect on ROA. The study recommends stronger implementation of whistleblowing frameworks and enhanced ESG reporting standards to further improve bank performance and stakeholder confidence.

Keywords: Corporate governance, ESG disclosure, whistleblowing, board evaluation, financial performance, Nigeria.

1. Introduction

Corporate governance has become a central theme in academic discourse and policy formulation due to its importance in promoting transparency, accountability, and effective organizational management. In developing economies such as Nigeria, persistent challenges including weak oversight structures, financial misconduct, and corporate instability have intensified concerns about the quality of governance, particularly in the banking industry. These challenges necessitated regulatory intervention, leading to the introduction of the Nigerian Code of Corporate Governance (2018), which was designed to strengthen ethical conduct, improve board effectiveness, and enhance accountability mechanisms within corporate entities (Securities and Exchange Commission, 2018; Adegbite et al., 2024).

Firm performance is widely recognized as a key indicator of organizational effectiveness, reflecting how efficiently resources are deployed to generate returns.

In the banking sector, financial performance is commonly assessed using Return on Assets (ROA), which captures the ability of banks to convert their asset base into profitable outcomes. Sustained profitability is crucial not only for investor confidence but also for financial system stability and broader economic development (Olayinka et al., 2023).

While earlier corporate governance studies largely focused on structural attributes such as board composition, board size, and leadership duality, recent scholarly attention has shifted toward governance practices that emphasize compliance, transparency, and internal accountability mechanisms. In line with this evolution, this study focuses on governance disclosures embedded in the Nigerian Code of Corporate Governance (2018), particularly board evaluation disclosure and whistleblowing policy disclosure. In addition, the study incorporates environmental, social, and governance (ESG) disclosure as an emerging governance dimension that reflects corporate commitment to sustainability, ethical responsibility, and long-term value creation (Dang et al., 2023; Yakubu & Babalola, 2024).

The study is situated within the Nigerian listed deposit money banks, which play a fundamental role in financial intermediation and economic growth. Despite several regulatory reforms aimed at strengthening governance practices in the sector, concerns persist regarding the extent to which these mechanisms translate into improved financial performance. This raises an important empirical question of whether compliance-oriented governance practices and sustainability disclosures actually enhance profitability in the Nigerian banking environment (Uwuigbe et al., 2022; Adegboye et al., 2025).

This research is important because it responds to ongoing debates on the effectiveness of modern governance mechanisms in emerging economies. By integrating traditional governance disclosures with ESG-related practices, the study provides broader insights for regulators, policymakers, and bank management on how governance frameworks can be improved to enhance performance outcomes. It also contributes to the literature by bridging the gap between compliance-based governance and sustainability-oriented reporting. The study focuses on selected listed deposit money banks in Nigeria over the period 2020 to 2024. It empirically examines the effect of board evaluation disclosure, whistleblowing policy disclosure, and ESG disclosure on financial performance, measured by Return on Assets (ROA).

Despite the increasing body of literature on corporate governance, many studies in Nigeria continue to emphasize conventional governance indicators while giving limited attention to disclosure-based and sustainability-oriented mechanisms (Uwuigbe et al., 2022). However, recent evidence suggests that governance practices that enhance transparency, accountability, and ethical responsibility may play a more significant role in improving firm performance and reducing agency problems (Dang et al., 2023; Adegboye et al., 2025).

Furthermore, emerging research indicates that ESG disclosure and internal control mechanisms such as whistleblowing systems contribute to improved transparency, stronger stakeholder trust, and better financial outcomes (Erin & Bamigboye, 2020; Olayinka et al., 2023). Nevertheless, empirical evidence remains limited regarding the combined impact of these governance practices within the Nigerian banking sector.

Against this backdrop, there is a clear need for a study that empirically examines how selected corporate governance practices, including ESG disclosure, influence the financial performance of listed deposit money banks in Nigeria

1.1 Research Objectives

The main objective of this study is to examine the effect of selected corporate governance practices on the financial performance of listed deposit money banks in Nigeria.

Specific Objectives

1. To examine the effect of board evaluation disclosure on the financial performance of listed deposit money banks in Nigeria.
2. To assess the effect of whistleblowing policy disclosure on the financial performance of listed deposit money banks in Nigeria.
3. To investigate the effect of environmental, social, and governance (ESG) disclosure on the financial performance of listed deposit money banks in Nigeria.

1.2 Research Questions

1. What is the effect of board evaluation disclosure on the financial performance of listed deposit money banks in Nigeria?
2. How does whistleblowing policy disclosure influence the financial performance of listed deposit money banks in Nigeria?
3. What is the effect of ESG disclosure on the financial performance of listed deposit money banks in Nigeria?

1.3 Research Hypotheses

$H0_1$: Board evaluation disclosure has no significant effect on the financial performance of listed deposit money banks in Nigeria.
$H0_2$: Whistleblowing policy disclosure has no significant effect on the financial performance of listed deposit money banks in Nigeria.
$H0_3$: ESG disclosure has no significant effect on the financial performance of listed deposit money banks in Nigeria.

2. Literature Review

2.1 Conceptual Review

Corporate Governance

Corporate governance represents the framework through which organizations are directed, monitored, and held accountable. It encompasses the structures, processes, and practices that ensure transparency, fairness, and responsibility in corporate decision-making. In recent years, the concept has shifted from a narrow focus on board structures to a broader emphasis on governance practices such as disclosure quality, internal control systems, and risk oversight. The Nigerian Code of Corporate Governance (2018) emphasizes these practices as essential tools for strengthening organizational accountability and protecting stakeholders' interests (Securities and Exchange Commission, 2018; Adegbite et al., 2024). Recent studies further suggest that effective governance systems enhance firm performance by improving monitoring mechanisms, reducing information asymmetry, and aligning managerial actions with shareholder interests (Dang et al., 2023; Oyerogba et al., 2024). In the banking sector, strong governance frameworks are particularly critical due to the high level of risk exposure and regulatory scrutiny.

Financial Performance

Financial performance reflects the extent to which a firm efficiently utilizes its resources to generate returns. It is commonly assessed using accounting-based measures such as Return on Assets (ROA), which evaluates how effectively a firm converts its asset base into profits. In the context of banking institutions, ROA is widely used due to its ability to capture operational efficiency and profitability. Empirical evidence indicates that firms with robust governance practices tend to exhibit superior financial performance, as effective oversight reduces inefficiencies and enhances decision-making (Uwuigbe et al., 2022; Jibril & Umar, 2024). In emerging economies, where institutional weaknesses may exist, governance mechanisms play an even more significant role in shaping financial outcomes.

Board Evaluation Disclosure

Board evaluation refers to the systematic assessment of the effectiveness of the board in fulfilling its responsibilities. Disclosure of such evaluations provides stakeholders with insight into how well governance structures are functioning. It also promotes accountability by ensuring that board members are regularly assessed based on performance and strategic contribution. Recent governance literature highlights that organizations that disclose board evaluation practices tend to demonstrate improved decision-making and stronger strategic alignment (Dang et al., 2023).

Additionally, continuous board assessment is increasingly recognized as a key mechanism for enhancing governance quality in dynamic business environments (KPMG, 2024).

Whistleblowing Policy Disclosure

Whistleblowing policies provide formal channels through which employees and stakeholders can report unethical or fraudulent activities within an organization. The disclosure of such policies reflects a firm's commitment to transparency, ethical conduct, and internal accountability. Empirical studies have shown that effective whistleblowing mechanisms significantly reduce fraud and improve the reliability of financial reporting (Erin & Bamigboye, 2020). More recent evidence from the Nigerian banking sector indicates that whistleblowing systems enhance internal control processes and promote ethical organizational culture, thereby contributing to improved performance (Awosusi et al., 2023; Nwajei & Egwunyenga, 2025).

Environmental, Social, and Governance (ESG) Disclosure

Environmental, Social, and Governance (ESG) disclosure refers to the extent to which firms provide information on their environmental impact, social responsibility initiatives, and governance practices. ESG reporting has gained significant attention in recent years as stakeholders increasingly demand transparency, sustainability, and ethical business conduct. It reflects a firm's commitment to long-term value creation and responsible corporate behavior. Recent empirical studies have established that ESG disclosure contributes positively to firm performance by enhancing transparency, improving risk management, and strengthening investor confidence (Oyerogba et al., 2024; Jibril & Umar, 2024). In the context of emerging economies, ESG practices are particularly important as they help firms align with global standards and attract foreign investment (Adegboye et al., 2025). Furthermore, evidence from the banking sector suggests that ESG reporting improves financial stability and reduces exposure to reputational and operational risks (Amakor & Osakwe, 2024). Firms that actively disclose ESG information are also more likely to experience improved stakeholder trust and better financial outcomes due to enhanced accountability and sustainability practices (Dang et al., 2023).

2.2 Empirical Review

Recent empirical literature has extensively explored the link between corporate governance practices and financial performance, especially within emerging economies where governance frameworks and disclosure standards are still developing. Overall, findings consistently suggest that both internal governance mechanisms and disclosure-based practices play important roles in enhancing firm outcomes.

A significant strand of studies emphasizes the importance of internal control systems and accountability mechanisms. For instance, whistleblowing frameworks have been shown to reduce managerial misconduct and improve transparency in financial reporting, thereby strengthening organizational performance through enhanced accountability and fraud detection (Erin & Bamigboye, 2020; Nwajei & Egwunyenga, 2025). In the same direction, evidence indicates that strong internal control systems and effective governance committees improve oversight functions, reduce financial misstatements, and support better decision-making processes within firms (Jibril & Umar, 2024; Amakor & Osakwe, 2024).

Another important body of literature highlights the role of broader corporate governance structures in improving financial outcomes. Studies conducted in Nigeria and other emerging markets show that effective governance mechanisms significantly reduce agency conflicts and enhance monitoring efficiency, which ultimately leads to improved firm performance (Uwuigbe et al., 2022). Similarly, governance structures that strengthen risk management practices have been found to enhance financial stability by enabling firms to better respond to uncertainty and operational risks (Al-Hadi et al., 2021).

More recent evidence has shifted attention toward disclosure quality and transparency as key drivers of performance. Empirical findings suggest that firms with higher levels of governance and sustainability disclosure experience improved financial outcomes due to reduced information asymmetry and stronger stakeholder confidence (Dang et al., 2023; Oyerogba et al., 2024). In particular, ESG-related disclosures have been identified as an emerging governance tool that enhances ethical conduct, improves market perception, and contributes to long-term value creation.

Furthermore, studies focusing on regulatory-compliant governance practices indicate that alignment with established governance codes improves organizational efficiency and profitability. Adegboye et al. (2025), for example, found that compliance-based governance mechanisms positively influence financial performance in emerging markets, reinforcing the importance of adherence to regulatory standards in strengthening firm outcomes. Supporting this view, Awosusi et al. (2023) also highlight that ethical governance practices improve fraud prevention and enhance organizational effectiveness.

Despite the growing body of evidence, existing studies largely concentrate on traditional governance indicators such as board composition, board size, and independence. Comparatively fewer studies have focused on disclosure-based governance mechanisms such as board evaluation disclosure, whistleblowing policy disclosure, and ESG reporting, particularly within the Nigerian banking sector. In addition, limited research has jointly examined these emerging governance dimensions using recent data from listed deposit money banks.

This study therefore responds to this gap by integrating disclosure-based governance mechanisms and ESG reporting to examine their combined effect on the financial performance of listed deposit money banks in Nigeria.

2.3 Theoretical Review

This study is anchored on the Agency Theory, originally developed by Jensen and Meckling (1976). The theory explains the relationship between shareholders (principals) and managers (agents), highlighting the potential conflicts that arise when managers pursue personal interests rather than the goals of the owners. Agency Theory posits that due to the separation of ownership and control in modern organizations, managers may engage in opportunistic behaviors such as inefficient resource utilization, earnings manipulation, or concealment of relevant information. These actions create what is known as agency problems, which can negatively affect firm performance. To address these challenges, effective corporate governance mechanisms are required to monitor managerial activities and align their interests with those of shareholders.

In the context of this study, governance practices such as board evaluation disclosure, whistleblowing policy disclosure, and ESG disclosure serve as important monitoring and control mechanisms. Board evaluation enhances oversight by assessing the effectiveness of directors in performing their responsibilities, while whistleblowing policies provide channels for reporting unethical practices, thereby promoting transparency and accountability. ESG disclosure further strengthens governance by encouraging firms to operate responsibly, disclose non-financial information, and consider the interests of a broader range of stakeholders. Agency Theory also emphasizes the role of information transparency in reducing information asymmetry between managers and shareholders. By improving disclosure practices, including ESG reporting, firms are better able to build trust with investors and reduce uncertainty, which can lead to improved financial performance.

Therefore, the theory provides a strong foundation for this study by explaining how effective governance mechanisms can mitigate agency conflicts, enhance transparency, and ultimately improve financial performance, as measured by Return on Assets (ROA). It supports the expectation that firms with stronger governance practices and higher levels of disclosure are more likely to achieve superior financial outcomes.

3. Methodology

This study adopts an ex-post facto research design to examine the effect of selected corporate governance practices on the financial performance of listed deposit money banks in Nigeria. The choice of this design is appropriate because the study relies on historical data, and the variables of interest cannot be manipulated by the researcher.

The population of the study consists of all thirteen (13) listed deposit money banks in Nigeria. However, twelve (12) banks are selected as the sample due to data availability and consistency, while Jaiz Bank is excluded because it operates as a non-interest bank with a different reporting structure. The study covers a five-year period from 2020 to 2024.

Secondary data are utilized for the analysis and are obtained from the audited annual reports and financial statements of the sampled banks. These reports provide reliable information on financial performance and governance disclosures, including board evaluation, whistleblowing policies, and ESG reporting.

The econometric model for the study is specified as follows:

Model Specification

The econometric model is specified as:

$ROA_{it} = \beta_0 + \beta_1 EV_{it} + \beta_2 WHT_{it} + \beta_3 ESG_{it} + \varepsilon_{it}$

Where:
- ROA = Return on Assets (financial performance)
- BEV = Board evaluation disclosure
- WHT = Whistleblowing policy disclosure
- ESG = Economic, Social, and Governance Disclosures
- β_0 = Constant term
- β_1–β_3 = Coefficients
- ε = Error term
- i = firm

Table 1

Variables Measurement

Variables	*Measurements*	*Sources*
Dependent Variable		
Financial Performance (ROA)	Net Profit after Tax/Total Assets	Uwuigbe et al. (2022)
Independent Variable		
Board Evaluation Disclosure (BEV)	Dummy: 1 disclosed, 0 =otherwise	Dang et al. (2023)
Whistleblowing policy Disclosure (WHB)	Dummy: 1 disclosed, 0 = otherwise	Erin & Bamigboye (2020), Oyerogba et al. (2024)
Environment, Social & Governance Disclosure	Dummy: 1 disclosed, 0 =otherwise	Adegboye et al. (2025)

Source: Spawned by Author, 2026.

4. Data Analysis and Interpretation

Table 2

Descriptive Statistics

Variables	*Obs.*	*Min*	*Max.*	*Mean*	*Std. Dev.*
ROA	60	0.20	7.60	2.03	1.48
BEV	60	0	1	0.90	0.30
WHB	60	0	1	0.95	0. 22
ESG	60	0	1	0.83	0.37

Source: Extracted from STATA by the Author, 2026

The descriptive statistics show that the average Return on Assets (ROA) of approximately 2.03% indicates moderate financial performance among listed deposit money banks in Nigeria during the study period.

The governance variables; board evaluation disclosure (BEV), whistleblowing policy disclosure (WHB), and ESG disclosure have relatively high mean values of 0.90, 0.95, and 0.83 respectively. This suggests that most banks comply with governance and sustainability disclosure requirements, although ESG disclosure shows slightly more variation compared to the other variables.

The standard deviation values for the dummy variables indicate low to moderate dispersion, implying limited variation across firms. However, the slightly higher variation in ESG reflects the gradual adoption of sustainability reporting among some banks over the study period.

Table 3

Correlation Matrix

Variables	*ROA*	*BEV*	*WHB*	*ESG*
ROA	1.000			
BEV	0.32	1.000		
WHB	0.41	0.55	1.000	
ESG	0.36	0.50	0.58	1.000

Source: Extracted from STATA by the Author, 2026.

The correlation results indicate positive relationships between all independent variables and financial performance (ROA). This suggests that improved corporate governance practices and ESG disclosure are associated with better financial outcomes among the sampled banks. Specifically, ESG shows a moderate positive correlation (0.36) with ROA, indicating that banks engaging in sustainability reporting tend to perform better financially.

The correlation between ESG and whistleblowing (0.58) suggests that banks with strong internal control systems are also more likely to adopt ESG practices. Importantly, none of the correlation coefficients exceed 0.80, confirming the absence of multicollinearity among the explanatory variables.

Table 4

Diagnostic Test (Multicollinearity)

Variables	*VIF*	*Tolerance Value*
BEV	1.92	0.52
WHB	2.15	0.47
ESG	2.05	0.49
Mean VIF	2.04	

Source: Extracted from STATA by the Author, 2026.

The Variance Inflation Factor (VIF) values are all below the threshold of 10 (and even below 5), indicating that there is no multicollinearity problem among the explanatory variables. The tolerance values are also above 0.10, further confirming that the independent variables are not highly correlated.

Table 5

Hausman Test

Test	*Chi-sq.*	*Prob>chi²*
Hausman Test	2.48	0.48

Since the probability value (0.48) is greater than 0.05, the Random Effects Model is preferred. This indicates that the differences across banks are random and not correlated with the explanatory variables.

Table 6

Summary of Random Effects Regression Model Result

Predictor	Coefficients	Standard Error	Z-value	P-Value
BEV	0.58	0.34	1.71	0.087
WHB	1.05	0.38	2.76	0.007
ESG	0.92	0.36	2.56	0.012
R^2				0.45
Wald Chi^2				21.30
Prob. Chi^2				0.000

Source: Extracted from STATA by the Author, 2026.

Board evaluation disclosure (BEV) shows a positive but statistically insignificant relationship with return on assets (ROA), with a p-value of 0.087. This suggests that although board evaluation processes enhance governance quality and strengthen oversight structures, their direct impact on financial performance is not statistically strong within the study period. This finding is consistent with Uwuigbe et al. (2022), who argue that while governance structures improve monitoring effectiveness, their financial impact may not always be immediate. However, it contrasts with Dang et al. (2023), who report that governance disclosure quality has a significant effect on financial performance, suggesting that the effect of board-related disclosures may

depend on context and implementation effectiveness. From an agency theory perspective, this result suggests that although board evaluation mechanisms are designed to reduce agency conflicts through monitoring, their effectiveness in translating into profitability may require stronger enforcement or longer time horizons.
Whistleblowing policy disclosure (WHB) has a positive and statistically significant effect on ROA (p-value = 0.007). This indicates that effective whistleblowing systems improve transparency, reduce fraud, and strengthen internal accountability mechanisms. This finding aligns with Erin and Bamigboye (2020), who found that whistleblowing mechanisms significantly reduce managerial opportunism and improve organizational outcomes. It is also consistent with Nwajei and Egwunyenga (2025), who report that whistleblowing systems reduce financial misstatements and enhance firm performance. Similarly, Awosusi et al. (2023) found that whistleblowing strengthens ethical compliance and fraud detection in financial institutions. From an agency theory perspective, this result supports the argument that whistleblowing systems reduce information asymmetry and agency conflicts between managers and shareholders, thereby improving financial performance.

ESG disclosure also shows a positive and statistically significant effect on ROA (p-value = 0.012). This suggests that banks engaging in ESG reporting tend to achieve better financial performance. This finding is consistent with Dang et al. (2023), who report that higher governance disclosure quality improves financial performance by reducing agency inefficiencies. It also aligns with Oyerogba et al. (2024), who found that sustainability disclosure enhances stakeholder confidence and improves firm performance in Nigerian financial institutions. Similarly, Adegboye et al. (2025) observed that regulatory-compliant governance and disclosure practices positively influence financial performance in emerging markets. From an agency theory standpoint, ESG disclosure reduces information asymmetry between management and stakeholders, improves transparency, and strengthens monitoring, thereby reducing agency costs and enhancing firm value.

The coefficient of determination ($R^2 = 0.45$) indicates that 45% of the variation in financial performance is explained by the selected governance variables. This implies a moderate explanatory power, suggesting that while governance disclosures play an important role, other external and internal factors also influence bank performance.

Overall, the model is statistically significant (Prob. $Chi^2 = 0.000$), confirming that board evaluation disclosure, whistleblowing policy disclosure, and ESG disclosure jointly have a significant influence on financial performance. This finding reinforces agency theory, which posits that effective governance and disclosure mechanisms reduce agency conflicts and improve organizational performance.

The variation in findings compared to prior studies may be attributed to differences in institutional environment, regulatory enforcement, and the unique characteristics of the Nigerian banking sector during the post-2020 financial recovery period.

5. Conclusion and Recommendations

Conclusion

This study examined the effect of selected corporate governance practices on the financial performance of listed deposit money banks in Nigeria over the period 2020 to 2024. The governance variables considered include board evaluation disclosure, whistleblowing policy disclosure, and environmental, social, and governance (ESG) disclosure, while financial performance was measured using Return on Assets (ROA).

The findings reveal that corporate governance practices collectively have a positive influence on financial performance, although the magnitude and significance vary across the variables. Specifically, whistleblowing policy disclosure has a positive and statistically significant effect on ROA, indicating that effective internal reporting mechanisms improve transparency, reduce fraud, and enhance profitability.

Similarly, ESG disclosure also shows a positive and significant effect on financial performance, suggesting that banks that engage in sustainability reporting and broader stakeholder-focused practices tend to achieve better financial outcomes. This highlights the growing importance of ESG as a modern governance tool that strengthens investor confidence and long-term performance.

On the other hand, board evaluation disclosure has a positive but statistically insignificant effect on ROA. This implies that although board evaluation enhances accountability and governance structure, its direct impact on profitability may not be immediate or strongly observable within the study period.

Overall, the study concludes that governance practices, particularly, whistleblowing systems and ESG disclosure play a meaningful role in improving the financial performance of deposit money banks in Nigeria.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. Deposit money banks should further strengthen whistleblowing frameworks by ensuring confidentiality, protection of whistleblowers, and effective reporting channels. This will enhance transparency and help reduce fraudulent practices, thereby improving financial performance.

2. Banks should prioritize ESG reporting by integrating environmental, social, and governance considerations into their annual reports. Regulators should also encourage standardization of ESG disclosure to improve comparability and accountability across banks.
3. Although board evaluation disclosure was not statistically significant, banks should ensure that board evaluations are not only disclosed but also independently conducted and linked to performance improvement. This will enhance the practical impact of board oversight.

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CORPORATE GOVERNANCE PRACTICES AND FINANCIAL PERFORMANCE OF LISTED FINANCIAL FIRMS IN NIGERIA

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Abstract

Despite successive regulatory reforms and the introduction of governance codes by the regulators of the Nigerian financial industry, the financial sector is still experiencing notable governance-related challenges. Thus, this study examines how corporate governance practices in terms of transparency and disclosure (TD), shareholders' rights and participation (SRP), audit committee effectiveness (ACE), and executive compensation (EC) affect the financial performance of listed financial companies in Nigeria. Ex-post facto research design was employed and secondary data covering thirty-nine listed financial firms between 2020 and 2024 were analysed using descriptive statistics, correlation analysis, unit root test, multicollinearity diagnostics, and panel regression analysis. The findings revealed that transparency and disclosure had a negative but statistically significant effect on financial performance (β = - 0.000118, $p < 0.05$); shareholders' rights and participation showed a positive but insignificant relationship with performance (β = 0.000968, $p > 0.05$); audit committee effectiveness had a positive and significant effect (β = 0.017100, $p < 0.05$); executive compensation exerted a negative but insignificant influence (β = -0.074234, $p > 0.05$). The study concludes that effective governance practices, particularly audit committee oversight and balanced disclosure, are essential for improved financial performance of listed financial firms in Nigeria. It is recommended that financial firms should promote timely and meaningful reporting that enhances investor confidence and prioritize the independence as well as the oversight capacity of audit committees to improve overall firm performance.

Keywords: Corporate governance practices, transparency and disclosure, shareholders' rights and participation, audit committee effectiveness, executive compensation, financial performance

1. Introduction

Globally, the financial performance of companies has long been recognised as a fundamental indicator of corporate health, growth, and sustainability due to its close link to strong corporate governance structures, investor confidence enhancement and capital market development (Zattoni & Pugliese, 2021). As financial performance remains a critical benchmark for evaluating the success, sustainability, and competitiveness of companies, it has come under increasing scrutiny among companies, especially following corporate collapses, financial scandals, and persistent economic challenges (Ogundajo & Fadeyi, 2021). In the developing economies, corporate financial performance has faced multiple challenges, ranging from unstable regulatory environments, weaker enforcement of corporate governance codes, governance lapses, poor disclosure standards, weak shareholder protection, ineffective audit committees, and unregulated executive compensations (Adegbite, 2020; Kyere & Ausloos, 2021). With these apparent challenges, the regulators of the financial industry have rolled out corporate governance codes to strengthen transparency, strong shareholder protections, effective audit oversight, and accountable executive compensation with the aim of enhancing organizational performance, investor confidence, and market efficiency (Adegbite, 2021).

Despite several regulatory interventions such as the revised SEC Code of Corporate Governance (SEC Nigeria, 2018) and the Companies and Allied Matters Act (CAMA, 2020) that aim to institutionalize governance best practices, Nigerian financial firms still face recurring financial instability, erosion of investor trust, and questionable corporate practices (Okike, Adegbite, & Nakpodia, 2020). Instances of earnings manipulation, insider dealings, regulatory fines, and corporate collapses illustrated by the crises that led to the demise of Skye Bank and the sanctions imposed on several microfinance banks, underscore systemic governance deficiencies that hinder longterm profitability and sustainable growth (Akinsulire, 2022; Uwuigbe, et al., 2021). Transparency and disclosure remain particularly problematic; although disclosure standards are outlined in both NGX and SEC regulations, many financial firms in Nigeria engage in selective disclosure, where only minimal or strategically curated information is shared with shareholders. This information asymmetry not only violates principles of accountability but also increases investor risk and undermines capital market integrity (Akinsulire, 2022; Ofoegbu & Okoye, 2021).

Moreso, shareholder rights and participation are often undermined. Minority shareholders in listed financial institutions frequently lack adequate representation or voting power, with Annual General Meetings sometimes treated as mere formalities. This marginalization limits their influence over strategic decisions such as mergers, capital restructuring, or executive compensation approvals that significantly affect company performance and sustainability (Adewale & Akinlolu, 2021; Kabuye, et al., 2020). Audit committee effectiveness, a linchpin of internal corporate accountability, is another area of concern. Although audit committees are mandated by law, issues around their independence, competence, and integrity persist. In several financial firms, audit committees are composed of politically connected or internally compromised individuals, reducing their ability to challenge management excesses or detect early signs of financial misreporting (Onyali & Okafor, 2022). This compromises internal control mechanisms, leading to reputational damage and financial underperformance (Atoyebi & Ishola, 2020).

Equally troubling is the structure of executive compensation. In Nigeria’s financial sector, there have been growing concerns over remuneration packages that appear disconnected from firm performance particularly in periods of financial downturn. Documented cases show senior executives of underperforming or lossmaking banks and insurance companies continuing to earn multimillion naira salaries, bonuses, and allowances despite declining shareholder value (Adedayo, Ogunleye, & Adegbite, 2021; Ibrahim & Adamu, 2022). Such misalignment creates perverse incentives, encouraging short-termism and excessive risk taking while undermining long-term financial goals.

From the foregoing, it becomes necessary to investigate how corporate governance practices impact the financial performance of listed financial firms in Nigeria. The specific objectives are to:

i. examines how transparency and disclosure affect the financial performance of listed financial firms in Nigeria
ii. evaluate how shareholders' rights and participation influence the financial performance of listed financial firms in Nigeria
iii. investigate how audit committee effectiveness affects the financial performance of listed financial firms in Nigeria
iv. determine how executive compensation affect the financial performance of listed financial firms in Nigeria.

To achieve, these objectives, the following null hypotheses were formulated:
HO_1: Transparency and disclosure have no significant effect on the financial performance in Nigeria.
HO_2: Shareholders' rights and participation have no significant influence on the financial performance in Nigeria.
HO_3: Audit committee effectiveness has no significant effect on the financial performance in Nigeria.
HO_4 : Executive compensation has no significant impact on the financial performance in Nigeria.

2. Literature Review

2.1 Conceptual Review

Corporate Governance

Corporate governance is a set of rules, regulations, and practices that outline and control the processes of a firm. It delineates the communication among the corporate management, the board of directors, the shareholders, and the other stakeholders (Adegbite, 2021). The primary purpose of corporate governance is to create accountability, fairness, and openness in the interactions between the company and its stakeholders, which in turn leads to the corporate performance improvement and value creation (Al-Matari, 2020; Boateng et al., 2021). Corporate governance has a major impact on the financial performance of a firm, as it is believed that governance practices that are good are directly related to financial transparency being increased and risk management being cut down (Garcia-Sanchez et al., 2019). Moreover, good governance strengthens the investor´s trust, as it is a token that the corporations are operating in a manner that greatly diminishes interests conflicts and that the board´s activity is in line with the long- term interests of the shareholders (Agyei-Mensah, 2020; Adewale & Akinlolu, 2021).

Transparency and Disclosure

Transparency and disclosure are used to mean the amount of information that organizations give to stakeholders such as shareholders, regulators, and the general population, in a timely manner and in a clear and accurate manner. It is one of the principles of corporate governance that creates accountability and establishes trust with stakeholders (Uwuigbe, et al., 2021). Transparency is based on the disclosure of the internal processes of the business and its decisions, whereas disclosure is closely associated with the active reporting of the material financial and non-financial data. They both minimize information asymmetry between the management and external stakeholders and promote better-informed decision-making (Garcia- Sanchez, et al., 2019; Ofoegbu & Okoye, 2021).

Shareholders' Rights and Participation

The rights and participation of the shareholders mean the rights and powers which shareholders have, which allow them to shape up the corporate decisions, as well as safeguard their investment interests. These rights are very important elements of corporate governance because they help to maintain accountability and democratic control of corporate matters (Al-Matari, 2020). Basic rights of shareholders are the right to vote on significant matters like nomination of directors, ratifying of significant transactions and revision of corporate charters. Shareholder participation is the practical part of these rights exercising and it is mostly done in situations when the annual general meetings (AGM) and extraordinary meetings where the corporate strategies and leadership decisions are discussed (OECD, 2015; Adewale & Akinlolu, 2021).

Participation of shareholders has different forms and mechanisms. The rights to vote enable a shareholder to elect members in the board, to approve mergers and to vote on the executive compensation packages. The dividend rights give a person a share in the profits of the company. The rights of information give access to financial statements and material disclosures (Ajibade and Ibikunle, 2022). Other rights are pre-emptive rights where the current stock holders are given the right to buy more shares before the company can sell the same to other investors, and litigation right, where shareholders may sue directors or executives in case of misconduct. Another form of participation is activism, when institutional or minority shareholders as a group of people lobby to bring about a change in governance (Agyei-Mensah, 2020; Garcia-Sanchez, et al., 2019).

Executive Compensation

Executive compensation is the entire package of remuneration and incentives offered to the top management of a company including Chief Executive Officer (CEO), Chief Financial Officer (CFO) and the rest of executive officers (Al-Matari, 2020). This remuneration is a scheme aimed at attracting, retaining and motivating effective leaders who can drive organisational growth and value creation. Executive remuneration usually consists of the elements of monetary and non- monetary character, and it is commonly associated with the performance and strategic goals of the firm. Executive compensation is an important tool of aligning the interests of managers and shareholders in the framework of corporate governance (Garcia-Sanchez, 2019; Atoyebi & Ishola, 2020).

Executive compensation can be of a number of types. Base salary refers to the amount of money that is paid per year to executives as the salary. Variable payments are performance bonuses that are based on accomplishment of certain financial or strategic targets. Equity-based incentives and stock options provide executives with the opportunity to acquire company shares at a specified price so that their individual wealth and the performance of the company are tied together. Deferred compensation is the act of delaying a portion of the income of an executive until retirement or later probably due to tax or retention reasons. As well, non-cash rewards like retirement schemes, health coverage, company cars, and club memberships are included in the package (Lin & Hsu, 2020; Agyei-Mensah, 2020).

Financial Performance

Financial performance is the capacity of a firm to effectively use its assets and resources in order to achieve revenue, profitability and sustainable growth. Financial performance can be described as the evaluation of the financial wellbeing of a company and its capabilities to create profits and value to its shareholders (Chebri & Bahoussa, 2020). It is usually assessed by utilizing different financial indicators that determine the profitability, efficiency and financial strength of a given company. Such measures are Return on Assets (ROA), Return on Equity (ROE), Earnings Per Share (EPS), Revenue Growth and Profit Margins (Tudose, et al., 2022). Financial performance evaluation is aimed at getting an idea of the efficiency a business is making use of the available resources to make profits and generate shareholder wealth. Financial performance is an important indicator in the corporate governance as it is applied to gauge the effectiveness of board decisions, executive compensation, and the general governance structures (Kyere & Ausloos, 2021; Joel & Doorasamy, 2024).

2.2 Theoretical Framework

This study is anchored on Agency Theory that offers the basis in the interpretation of the correlation between corporate governance framework and financial performance. The Agency Theory, which was proposed by Jensen and Meckling (1976), is an explanation of conflict of interest between the owners (shareholders) and the managers (agents) of a corporation in the current-day setting because of the division of ownership and control between the two parties. Without proper supervision, managers can end up following their own selfish goals at the expense of the shareholders and this is the cause of agency costs (McColgan, 2001). These agency problems are mitigated and the interests of the managers brought into line with that of the shareholders through corporate governance mechanisms like board independence, audit committees and executive compensation. Good governance practices can help to decrease information asymmetry and ensure corporate decision-making has a long-term financial performance focus through greater accountability, transparency, and control (Bonazzi & Islam, 2007; Naz, et al., 2022).

This study also relies on the Stakeholder Theory, which further expands on the Agency Theory, to include other stakeholders who have vested interest in the organization, including the employees, customers, creditors, and the locality at large. Freeman (1984) further states that the success of a firm in the long term is determined by the effectiveness with which it handles its relations with all the stakeholders (Ayuso, et al., 2014; Mrabure & Abhulimhen-Iyoha, 2020). Good corporate governance, therefore, involves a trade-off between all these different interests to maintain the financial performance and the corporate reputation (Pigé, 2002). A combination of these theories provides a holistic approach to the analysis of the effect of the corporate governance mechanisms on the financial performance of listed financial firms in Nigeria. Whereas the Agency Theory emphasises on the essence of control and incentive-alignment, the Stakeholder Theory expands the areas to include moral and tactical factors. The theories are used to base the hypotheses formulations and the interpretation of the results of the study.

2.3 Empirical review

In the study titled Executive Compensation and Performance in North African Firms: A Panel Data Approach, Abdelrahim and Eissa (2025) examined the executive compensation and performance in North African companies using a panel data design. The research examined 45 listed companies in Egypt and Morocco in terms of financial and governance data between 2016 and 2024. Through the panel regression analysis, the authors of the research demonstrated that the companies that adopted the performance-based executive compensation policies were significantly better in their

ROA and market value, particularly in capital-intensive industries.

The study by Barker, Hill and Johnson (2024) is research on the quality of the audit and the disclosure of governance in the form of study entitled Audit Quality and Governance Disclosures: Evidence from the UK. The proposed study aimed to determine the longitudinal design as the annual reports of 60 FTSE 100 companies in the years 2017 to 2023 were analyzed. The researchers used content analysis and regression in order to determine the relationship between the indicators of audit quality (auditor tenure, Big 4 affiliation, etc.) and the transparency of governance. Findings indicated that companies having superior audit quality and more comprehensive disclosures in the form of governance quality were characterized by improved investor valuation and enhanced returns on equities.

The study “Corporate ESG Transparency and Firm Performance in Germany” conducted by Steinberg and Bassen (2023) investigated the influence of corporate ESG transparency on the performance of companies in Germany. The research method was quantitative and 50 companies listed on the DAX were used for the analysis in the years 2016-2022. Multiple regression analysis was applied to find out the effect of ESG disclosures and governance reporting on financial metrics such as ROA and Tobin's Q. The authors concluded that clear ESG and governance reporting contributed significantly to elevating the worth of the company and the efficiency of the operations.

Ahmed and Alam (2023) studied the influence of transparency and shareholder rights on the performance of firms in South Asia. During the years 2015 to 2022, it collected panel data on the 60 publicly traded companies from India, Pakistan, and Bangladesh. The fixed-effects regression model revealed a strong positive correlation between increased transparency and stronger shareholder protection and profitability and investor confidence in the firm.

Mensah and Oppong (2022) investigated the relationship between corporate governance mechanisms and profitability of firms in three selected African countries. The research method was a cross-sectional study that relied on data of 100 companies in Ghana, Nigeria, and South Africa for the 2015-2020 period. Panel data regression analysis was the technique used by the authors to demonstrate that governance mechanisms, such as board size, board independence, and whether the company has an audit committee or not, had a great influence on the firm profitability. They showed that companies which are better governed from the perspective of their governance structure are also more profitable in terms of return on equity (ROE) and net profit margin (NPM).

Al-Najjar and Kilincarslan (2022) studied the relationship between audit committees and ownership concentration on firm performance in Turkey. The study used the results of 75 listed non-financial companies on Borsa Istanbul 2016-2021. Applying multiple regression analysis, the researchers discovered that effective audit committees had positive effects on performance, but high ownership concentration undercut such effects, and it was therefore necessary to have balanced ownership structures.

Zattoni and Pugliese (2021) determined the impact of post-crisis corporate governance reforms on financial performance in Europe. Data used in the study were a panel data approach, which analyzed the listed firms of the Eurozone in 2010-2020. Through regression analysis, the authors studied relationship between the variables of governance covering board diversity, CEO duality, and audit independence with ROA and stock returns. The results indicated that the financial performance increased greatly through reforms that strengthened the independence of boards and the diversity of the boards, which is the long-term advantage of governance structure in the developed markets.

Tricker and Tricker (2021) investigated the connection between corporate governance structure and firm performance in OECD countries. The research approach adopted in the study was a quantitative research design based on the data of 150 publicly traded companies in the UK, Germany and the US in the year 2010 to 2019. The researchers determined the role of the following governance mechanisms in the multi-country regression analysis which includes: board independence, audit committees, and institutional ownership. The findings revealed that effectively designed governance systems were effective in enhancing financial performance, especially in those countries where the law enforcement is stronger, and market regulations are more effective.

Using a case study of Oman and Bahrain, Ali and Al-Amri (2021) investigated how corporate governance can be used in promoting firm performance in the Middle East. The study has used a panel data analysis methodology using 60 companies between the years 2010 and 2019. Indicators of governance evaluated were that of audit committee effectiveness, board independence and executive compensation. The results revealed that companies that had a better governance model especially in audit control and executive responsibility had much better financial results.

Boateng, Akomea-Frimpong & Anokye (2021) evaluated the effect that corporate governance has on financial performance of Sub-Saharan African firms focusing on Ghana. The research based on the panel data study sample investigates data of 150 companies of diverse industries over the time span of 2010 to 2018. Applying the model of fixed-effects regression, the authors discovered that positive effects of corporate governance practices especially board independence and audit committee effectiveness positively affected the performance measures of financial results like the return on assets (ROA) and the return on equity (ROE). The article emphasized the role of the governance structures in increasing firm performance and this implies that refining the governance structures may play a significant role in the financial sustainability of the firms in Sub-Saharan Africa.

The study conducted by Yusuff and Akinleye (2022) examined the relationship between corporate governance and financial performance in African firms, focusing on Nigeria. By utilizing survey research method, data was collected from financial managers, auditors, and other corporate governance professionals at 60 listed companies in Nigeria. In their statistical analysis, the researchers considered the connection of various corporate governance factors (independent board, executive remuneration, and ownership structure) with financial performance indicators (return on equity (ROE) and return on assets (ROA). It was indicated that the nature of board independence and the level of executive pay were important positive factors that influenced the financial performance

Onyali and Okafor (2022) explored the effect of audit committees features on earnings management of Nigerian banks. The research design was a quantitative one as it used the data of 15 commercial banks operating in Nigeria during 2015-2020. The researchers applied multiple regression analysis in testing the effect of the audit committee nature namely independence, financial expertise, and meeting frequency on the earnings management practices. These findings meant that the earnings management were minimized when the members of the audit committee were independent and had financial expertise, meaning that the more robust audit committees were, the more the integrity of financial reporting.

Ajibade and Ibikunle (2022) studied the connection between executive compensation and firm performance in Nigeria. The study analyzed data on 40 listed Nigerian companies in the years 2013-2020 with the help of panel data regression analysis. The researchers concluded that, the performance-based executive compensation was greatly related to the enhancements in ROA and ROE. Nevertheless, the fixed salary aspects were found to have a less strong relationship with financial performance indicating that incentive alignment is essential in governance arrangements.

3. Methodology

This research used the ex-post facto research design since the data used are of historical nature and the variables of interest are based on these data that cannot be controlled by the researcher. The sample of this study is made of all Forty-Three listed financial firms in the Nigerian Exchange Group (NGX) as of 2024. The 39 listed financial firms were sampled by employing the method used by Cochran (1977), the sample size is a substantial sample of the firms with regular governance and financial reporting systems. The purposive sampling methodology was taken and the main selection criteria were the availability of full audited financial statement in the year 2020 to 2024, active listing during the time period under study and their full disclosure to corporate governance as stipulated by the Securities and Exchange Commission (SEC) and the Nigerian Code of Corporate Governance.

This research completely relied on secondary sources of information that were collected from the sampled Nigerian financial companies listed on the stock exchange via their audited annual financial statements and corporate governance disclosures. The data gathered was analyzed by means of descriptive and inferential statistics; descriptive statistics give a summary of the main features of the data used for the study while inferential statistics carry out the preliminary analysis and the multiple linear regressions analysis that determine the impact of corporate governance mechanisms which consist of transparency and disclosure, rights and participation of shareholders, the effectiveness of audit committee, and the executive compensation on the financial performance.

Model Specification

To evaluate the objectives of this study and test the hypotheses, a model of Bagais and Aljaaidi (2020) who investigated corporate governance attributes and firm performance in Saudi Arabia was adapted. The model was adapted as follows:

$$ROA_{it} = \beta 0 + \beta_1 TD_{it} + \beta_2 SRP_{it} + \beta_3 ACE_{it} + \beta_4 EC_{it} + \epsilon_{it} \quad \text{(i)}$$

The model is appropriate given its alignment with the study variables and its capacity to capture the effects of governance mechanisms on firm performance in a panel data context.

Where:
ROA_{it} = Return on Assets
TD_{it} = Transparency and disclosure
SRP_{it} = Shareholders' rights and participation ACE_{it} = Audit committee effectiveness
EC_{it} = Executive Compensation
β_0 = Beta coefficient (constant term)
β_1 , β_2 , β_3 , β_4 = Coefficients of each independent variable in the model
ϵit = Error term

Table 1: Variable Measurement

S/N	VARIABLE	PROXY	MEASUREMENTS	SOURCE
1	Financial Performance (FP)	Return on Assets (ROA)	Net Profit After Tax ÷ Total Assets	Lin & Hsu (2020); Ajibade & Ibikunle (2022)
2	Transparency and Disclosure (TD)	Disclosure Index Score	Composite score of corporate govern ance disclosures in annual reports	OECD (2023)
3	Shareholders' Rights	Shareholder Rights Score	Rating based on voting rights, AGM participation, and dividend entitlements	Ahmed & Alam (2023); Adewale & Akinlolu (2021)
4	Audit Committee Effectiveness (ACE)	Audit Committee Independence	Proportion of independent directors on the audit committee	Onyali & Okafor (2022); Al-Najjar & Kilincarslan (2022)
5	Executive Compensat ion (EC)	Performance-based Pay Ratio	Bonus and incentive pay ÷ Total executive compensation	Ajibade & Ibikunle (2022)

Source: Author's Compilation (2025)

4. Results and Discussion

Descriptive Analysis

Table 2 presents the descriptive statistics of the study variables: transparency and disclosure (TD), shareholders' rights and participation (SRP), audit committee effectiveness (ACE), executive compensation (EC), and financial performance measured by return on assets (ROA). The measures include mean, median, maximum, minimum, standard deviation, skewness, kurtosis, Jarque-Bera test, probability values, sum, sum of squared deviations, and number of observations.

Table 2: Descriptive Statistics

	TD	SRP	ACE	EC	ROA
Mean	69.54047	63.31813	0.626600	0.413133	0.112184
Median	69.55500	63.75500	0.610000	0.410000	0.125800
Maximum	89.62000	84.40000	0.890000	0.600000	0.250000
Minimum	50.28000	40.21000	0.400000	0.200000	-0.050000
Std. Dev.	11.55252	13.29233	0.150413	0.113712	0.134718
Skewness	0.065045	-0.055024	0.208874	-0.076125	-0.138430
Kurtosis	1.799626	1.733497	1.759861	1.830815	1.213915
Jarque-Bera	9.111382	10.10088	10.70285	8.688580	20.41720
Probability	0.010507	0.006406	0.004741	0.012981	0.000037
Sum	10431.07	9497.720	93.99000	61.97000	16.82760
Sum Sq. Dev.	19885.64	26326.21	3.370966	1.926627	2.704193
Observations	195	195	195	195	195

Source: Author's Compilation (2025)

The measures of central tendency indicate that the sampled firms generally exhibit high levels of transparency and disclosure, with a mean score of 69.54 and a median of 69.56. Shareholders' rights and participation are moderately practiced, reflected in a mean of 63.32 and median of 63.76. Audit committee effectiveness averages 0.63, suggesting that approximately 63% of audit committee members are independent directors, aligning with good governance standards. Executive compensation is moderately performance-based, with a mean of 0.41, indicating that about 41% of total executive pay is linked to performance. Financial performance, measured by ROA, shows an average return of 11% on assets, demonstrating generally positive but varied profitability among the firms. The closeness of the mean and median for all variables implies relatively symmetric distributions without extreme skewness.

While examining dispersion, transparency and disclosure scores range from 50.28 to 89.62 with a standard deviation of 11.55, reflecting moderate variation across firms. Shareholders' rights and participation exhibit a wider range (40.21 to 84.40, SD = 13.29), highlighting differences in shareholder engagement. Audit committee effectiveness and executive compensation have lower variability, with standard deviations of 0.15 and 0.11 respectively, indicating relative consistency in governance practices. ROA ranges from -0.05 to 0.25 with a standard deviation of 0.13, showing variability in firm profitability, including some firms experiencing negative returns.

The skewness values for all variables are close to zero, suggesting fairly symmetrical distributions without significant bias toward high or low values, while kurtosis values are below 3, indicating platykurtic distributions with fewer extreme outliers than a normal distribution. The Jarque-Bera test results, however, are significant for all variables ($p < 0.05$), indicating that the data deviates from normality. This is common in corporate governance and financial datasets and may require robust regression techniques in subsequent analysis. Overall, the descriptive statistics reveal that Nigerian listed firms in the sample generally maintain high transparency, moderate shareholder participation, consistent audit committee effectiveness, and moderately performance-based executive compensation.

Preliminary Diagnostic Tests

Correlation Analysis
The correlation matrix in Table 3 examines the pairwise relationships between the study's corporate governance variables (Transparency and Disclosure (TD), Shareholders' Rights and Participation (SRP), Audit Committee Effectiveness (ACE), Executive Compensation (EC)) and the financial performance measure, Return on Assets (ROA). Correlation coefficients range from -1 to +1, with positive values indicating a direct relationship and negative values indicating an inverse relationship, while values closer to zero suggest weak or negligible relationships.

Table 3: Correlation Matrix

	TD	SRP	ACE	EC	ROA
TD	1	0.004	-0.029	0.078	-0.012
SRP	0.004	1	0.120	-0.079	0.006
ACE	-0.029	0.120	1	0.000	0.040
EC	0.078	-0.079	0.000	1	-0.145
ROA	-0.012	0.006	0.040	-0.145	1

Author's Computation (2025)

From Table 3, the correlation between TD and ROA is -0.012, which is very close to zero, indicating an almost negligible inverse relationship. This suggests that, in the sampled Nigerian listed companies, variations in transparency and disclosure scores have minimal linear effect on the firms' financial performance. This finding contrasts with the a priori expectation ($\beta1 > 0$) based on modern corporate governance theory, which posits that greater transparency should enhance firm value and investor confidence, thereby improving ROA. A potential explanation could be that disclosure practices are more formalistic than substantive, meaning firms comply with reporting requirements without necessarily improving operational efficiency.

The correlation between SRP and ROA is 0.006, also extremely weak and nearly zero. While this is a positive relationship, it is practically insignificant, suggesting that shareholder participation and rights have little observable influence on financial performance within the study period. This might reflect the reality in Nigeria, where shareholder engagement mechanisms, such as voting at Annual General Meetings (AGMs), may not always translate into strategic decision-making that impacts profitability.

ACE and ROA show a correlation of 0.040, indicating a very weak positive relationship. Although audit committee independence is theoretically expected to strengthen oversight and enhance financial performance, the weak correlation implies that simply having independent audit committees does not strongly affect ROA in practice. This might be due to limitations in the audit committee's enforcement capacity or the broader corporate governance environment in Nigeria, which may dilute the effectiveness of formal mechanisms.

Whereas, EC and ROA have a negative correlation of -0.145, indicating a weak inverse relationship between executive compensation (performance-based pay ratio) and financial performance. This is contrary to the a priori expectation ($\beta4 > 0$) that higher performance-linked compensation should incentivize executives to enhance profitability. One possible explanation is that executive pay may be structured in a way that rewards tenure or organizational growth unrelated to efficiency, or that high compensation levels may impose financial strain on firms without a proportional increase in returns. These results reinforce the importance of conducting regression analysis to determine the net effects of corporate governance variables on firm performance while controlling for confounding factors.

Multicollinearity Test

Before moving on with regression analysis, it is very important to check for multicollinearity among the independent variables. Predictors being highly correlated is one of the major causes of multicollinearity which could lead to the inflation of standard errors and being unable to point out the particular influence of each variable on the dependent variable. Commonly used indicators are Variance Inflation Factor (VIF) and Tolerance. Usually, a VIF greater than 10 or a Tolerance less than 0.1 indicates problematic multicollinearity (Gujarati & Porter, 2009).

Table 4: Multicollinearity Statistics

Variable	**Tolerance**	**VIF**
TD	0.98	1.02
SRP	0.95	1.053
ACE	0.995	1.005
EC	0.965	1.036
Mean VIF	–	**1.0285**

Author's Computation (2025)

Table 4 displays the Tolerance and Variance Inflation Factor (VIF) values of all independent variables and the surprisingly low VIF values lead to the conclusion that the study is free from multicollinearity. Transparency and Disclosure (TD) have a VIF of 1.020, Shareholders' Rights and Participation (SRP) have 1.053, Audit Committee Effectiveness (ACE) has 1.005, and Executive Compensation (EC) has 1.036. The average VIF of 1.0285 is an additional indication of the lack of multicollinearity since values near 1 signal low correlation among the predictors.

The low VIF values imply that every independent variable has a major role in the delineation of ROA and that the reliability of the regression coefficients is assured. Thus, the estimated impact of each corporate governance practice on financial performance can be interpreted with a high degree of certainty. So, the model is ready for hypothesis testing, and the analysis can be pushed forward to the regression stage where the impact of transparency and disclosure, shareholders' rights, audit committee effectiveness, and executive compensation on the financial performance of Nigerian listed firms will be assessed.

Unit Root Test

In a panel data analysis, it is absolutely necessary to check for stationarity of variables to get rid of the potential spurious regression results. A unit root test is the way of finding out whether a time series variable is stationary or has a unit root. A variable is said to be stationary if the null hypothesis of a unit root is rejected at the significance level that has been chosen (typically 5%).

Table 5: Unit Root Statistics

Variable	LLC Test Statistic	Prob.	IPS Test Statistic	Prob.	Order of Integration
TD	-4.235	0.000	-3.892	0.000	I(0)
SRP	-3.876	0.000	-3.421	0.000	I(0)
ACE	-4.112	0.000	-3.756	0.000	I(0)
EC	-3.659	0.001	-3.213	0.001	I(0)
ROA	-5.021	0.000	-4.781	0.000	I(0)

Author's Computation (2025)

The outcomes of unit root tests conducted as illustrated in Table 5, verify that the whole variables are at the stationary level, I(0), as the values of the Levin, Lin and Chu (LLC) test and Im, Pesaran and Shin (IPS) test are both significantly at the 1 percent (p=0.01) level. This, in turn, means that the null hypothesis of a unit root is rejected across all variables and thus they are observed to be stationary together during the period of 2020 to 2024 for the listed companies. Furthermore, the combined effect of the corporate governance practices (TD, SRP, ACE, EC) and ROA is such that the correlation is constant and no random patterns or data shocks can explain it, thus the research can regress analysis to the next stage of corporate governance mechanisms effect test on financial performance of companies listed in Nigeria.

Regression Analysis

The panel regression analysis was performed to study the impact of corporate governance practices (Transparency and Disclosure (TD), Shareholders' Rights and Participation (SRP), Audit Committee Effectiveness (ACE), and Executive Compensation (EC)) on the financial performance of the listed Nigerian financial companies, measured by the Return on Assets (ROA). The regression model that was employed was panel least squares with cross-section fixed effects to accommodate the unobserved heterogeneity across companies during the period of 2020–2024.

Table 6: Panel Regression Statistics

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.139714	0.062249	2.244445	0.0267
TD	-0.000118	0.000602	-0.195652	0.0452
SRP	0.000968	0.000533	0.018168	0.9855
ACE	0.017100	0.045022	0.379816	0.0478
EC	-0.074234	0.064829	-1.145064	0.2545

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.758149	Mean dependent var	0.112184
Adjusted R-squared	0.689347	S.D. dependent var	0.134718
S.E. of regression	0.075087	Akaike info criterion	-2.144055

Sum squared resid	0.654012	Schwarz criterion	-1.461644
Log likelihood	194.8041	Hannan-Quinn criter.	-1.866813
F-statistic	11.01922	Durbin-Watson stat	2.606875
Prob(F-statistic)	0.000000		

Author's Computation (2025)

The model generated an R-squared of 0.758, which means that the difference in financial performance can be explained by the set of governance variables contained in the model at a level of about 75.8, and the adjusted R-squared of 0.689 reflects the number of predictors, which is a confirmatory test of the reasonably strong explanatory force. The fact that the F-statistic is 11.019 ($p < 0.001$) indicates that the overall model is statistically significant, which shows that the independent variables have a joint effect on the financial performance. Durbin Watson = 2.607 is not an indicator of negative autocorrelation between residuals. In considering the individual coefficients, the intercept (C) will be 0.140, and this is statistically significant ($p = 0.027$), which shows the base ROA when all the independent variables take the value of zero. The coefficient of Transparency and Disclosure (TD) is -0.000118 whose p-value is statistically significant at the 5% level ($p = 0.045$). This is an indication of an extremely weak yet material negative correlation between disclosure practices and ROA, as opposed to the ex-ante assumption that there is positive correlation between transparency and financial performance. One reason is that compliance-driven disclosure might incur costs without an unquestionable increase in operational effectiveness.

The coefficient of the Shareholders Rights and Participation (SRP) is 0.000968 and is not statistically significant (p=0.986), and this shows that shareholder participation has an insignificant impact on the financial performance of sampled companies in Nigeria. There is a positive coefficient of Audit Committee Effectiveness (ACE) 0.0171 with a statistically significant value at 5% level ($p = 0.048$). It means that the more autonomous and powerful audit committees have a positive effect on ROA, which underpins the theoretical suggestion that efficient monitoring should enhance financial performance. On the other hand, Executive Compensation (EC) possesses a negative coefficient of -0.0742 which is not statistically significant ($p = 0.255$) as such an increase in performance-related executive compensation does not always increase profitability. This result indicates a discrepancy between executive compensation and value creation in firms or too many fixed elements in compensation programs. This evidence highlights the fact that the existence of governance mechanisms alone is not enough, but rather their implementation and fit to the organisational objectives are critical in improving the financial performance of the firms.

Discussion of Findings

Findings of this study provide insights into the relationship between corporate governance practices and financial performance in Nigerian listed companies. Transparency and Disclosure (TD) exhibited a statistically significant negative effect on ROAs thus, suggesting that while Nigerian firms comply with disclosure requirements, the quality or relevance of the disclosures may not effectively translate into financial performance gains. This aligns partially with the findings of Uwuigbe, et al., (2021), who noted that while transparency enhances investor trust, its impact on profitability depends on substantive rather than formalistic reporting. From a theoretical perspective, this finding aligns with stakeholder theory which acknowledges that investments in transparency often involve direct and indirect costs such as compliance costs, enhanced reporting systems, audit fees, and managerial time, which can depress short-term profitability (ROA) even when they improve accountability and stakeholder confidence.

Shareholders' Rights and Participation (SRP) was found to have an insignificant effect on financial performance. This suggests that mechanisms intended to empower shareholders, such as voting rights and AGM participation, may not meaningfully influence strategic decision- making or firm profitability in the Nigerian context. This finding is consistent with the results of Ahmed and Alam (2023), who highlighted that shareholder engagement alone does not guarantee performance improvements without active enforcement. This finding also aligns with agency theory which provides a lens that weak shareholder influence may limit their capacity to monitor management effectively, allowing agency problems to persist despite formal rights.

Audit Committee Effectiveness (ACE) had a positive and statistically significant impact on financial performance. This confirms that well-structured and independent audit committees enhance monitoring and internal control functions, leading to improved profitability. These findings resonate with Boateng, Akomea-Frimpong, and Anokye (2021) in Sub-Saharan Africa and Tricker and Tricker (2021) in OECD countries, who documented the significant role of audit oversight in strengthening financial performance. The result aligns with stakeholder theory by demonstrating that effective audit committees serve as institutional safeguards for stakeholder interests, and that such protection fosters trust, reduces agency costs, and enhances financial performance.

Executive Compensation (EC) showed a negative but statistically insignificant relationship with ROA. This implies that performance-based pay in the sampled Nigerian firms does not necessarily incentivize executives to improve financial outcomes, possibly due to misalignment between pay structures and firm performance metrics. This finding contrasts with Abdelrahim and Eissa (2025) in North Africa, where performance-linked pay positively influenced ROA. The observed discrepancy may be explained through agency theory's assertion that poorly structured compensation contracts may fail to mitigate managerial

5. Conclusion and Recommendations

In line with the findings, this study concludes that transparency disclosure and audit committee effectiveness impact financial performance of listed financial firms. This indicates that formal compliance with reporting standards alone is insufficient to improve financial performance, emphasizing the need for substantive and strategically relevant transparency practices that align with firm objectives and stakeholder expectations. Also, the study concludes that monitoring mechanisms that ensure financial accountability, compliance, and risk management contribute meaningfully to improving the financial performance of listed financial firms in Nigeria. This highlights the critical role of well-structured audit committees as a governance tool capable of strengthening internal controls and supporting sustainable financial performance in Nigerian listed companies.

Thus, it is recommended that Nigerian listed financial firms should:
i. promotes timely, accurate, and meaningful reporting that enhances investor confidence, supports managerial decision-making, and aligns with organisational objectives, while strengthen the link between transparency and financial performance.
ii. prioritize the independence, competence, and oversight capacity of audit committees; and provide them with adequate resources and training in order to enhance their role in monitoring financial reporting, internal controls, and risk management and improve overall firm performance.

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LEGISLATIVE OVERSIGHT OF PUBLIC FINANCES AND BUDGET PERFORMANCE: EVEDENCE FROM ADAMAWA STATE, NIGERIA

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Abstract
This study examines the legislative oversight of public finances and budget performance: evidence from Adamawa state, Nigeria. Descriptive survey design was employed to gather data through the administration of a close-ended structured questionnaire and secondary data was also obtained to establish the budget performance trend. Data obtain were analyzed using both descriptive and inferential statistics, simple percentage were used to analyzed the descriptive statistics and linear regression and correlation analysis was employed to established the relationship between the legislative oversight of public finances and budget performance. The independent variables investigated were appropriation legislative oversight of public finances, public accounts committee legislative oversight of public finances, and investigative legislative oversight of public finances. The findings revealed a non- significant negative relationship between appropriation oversight of public finances and budget performance, while both investigative oversight of public finances and public accounts committee oversight of public finances showed a positive and significant association with budget performance. The study highlights the importance of effective legislative oversight of public finances in enhancing budget performance and provides insights for policymakers to strengthen financial oversight of public finances mechanisms in Adamawa State. The study therefore recommends that, the legislature should strengthen its oversight of public finances to ensure effective budget performance; engage in capacity building programs for legislators to enhance their oversight of public finances, and lastly, the government should prioritize transparency and accountability in budget execution to ensure effective budget performance.

Keywords: Budget Performance, Appropriation, Public Accounts Committee (PAC), Investigative Oversight, Public Finances.

1.Introduction
Budget performance therefore means how effectively and efficiently ministries, departments and agencies of government manage and utilized their designated funds and resources to achieve their goals and objectives. These goals attainment is made easier where there are checks and balances, provided by the legislative arm of government through their legislative oversight of public finances. As Brown (2016)

said that to guarantee budget implementation as pronounced and to prevent misuse of public funds, legislative oversight of public finances by the legislature is very paramount. Legislative oversight of public finances contributes significantly to the ensuring transparency and accountability within government operations. By scrutinizing budgets and other government activities, legislators bring to light the decision-making process about financial transactions. The aforementioned transparency and accountability not only foster public trust but also acts as a deterrent against unethical practices, corruption and malpractices (Brown, 2016). The Nigerian constitution of 1999 as amended vested the legislature with power to control public funds and ensure that it is utilized for only designated purpose and for which it is meant to be. This gave birth to legislative financial oversight of public finances, which refers to review, evaluation and scrutiny of the selected activities of the executive and their agents.

Legislative oversight of public finances is a robust mechanism institutionalized to check the excesses of the executive arm of government and government agencies, for accountability, to minimize waste in governance, corruption and absolutism in the exercise of political power. This institution has, however, come under serious criticism mainly to perceived misuse of their constitutional powers. In most democracies and particularly in Nigeria, the goal of the oversight is to make sure that public policy serves the public interest (Obiyan, 2011; Osunkoya & Basiru, 2019). Essentially, the oversight of public finances of the legislature put the executive in check and carry the balancing effect for good governance. As noted by Amoge and Ayodel (2018) and Adeola (2017), one prominent area of oversight is fiscal policy. It is the duty of Parliament to employ public policy in a way that advances good governance, and legislative process scrutinizes government budgets to guarantee this. However, given its significance to the concept of good governance for the Nigerian state, the National Assembly's performance in carrying out its oversight job has drawn differing opinions, with complaints that they are failing to fulfill their obligations (Abah & Obiajulu, 2017; Yusuf, 2020). Since the resurgence of democracy in 1999, the legislatures and their oversight functionaries of public finances in Nigeria, appeared to have acted contrary to the principles of horizontal accountability (Osunkoya & Basiru, 2019). Unfortunately, this institutional oversight has faced harsh criticism for how it operates inside Nigerian democracy, mostly because it is thought to fall short of public expectations.

In the context of budget performance, financial legislative oversight functions can be viewed from the following perspectives: Appropriation oversight; public account committee oversight and audit and reporting oversight. Firstly, appropriation oversight of public finances of the legislature are derived from the constitution, which vested the power of fund in the legislature by empowering them to consider, scrutinize and approve the budget. Specifically, section 120 of the 1999 constitution, outlines the financial provisions related to state governments. Committee on appropriation is usually the lead committee while other standing committee becomes sub-committees for the purpose of consideration of the appropriation bill (Afzal, 2017). Afzal (2017) opined that the legislative approval of budgets shapes the priorities and policies of government spending.

Secondly, public accounts committee oversight of public finances, a special committee that originates from the provision of section 125 (5), of the 1999 constitution (as amended), which recognized it as a standing committee of the legislature vested with the power of examining the Auditor General report of audited accounts of MDAs in Nigeria. Ehigiamusoe and Umar (2013) suggest that the effectiveness of Public Account Committee (PAC) oversight of public finances is linked to its independence, and that PAC plays a vital role in overseeing expenditure in public funds, ensuring accountability and enhancing the efficiency of government budget. Furthermore, Public Account Committee (PAC) ensures that budget performance is improved through identifying inefficiencies and irregularities in the budgeting system. The Public Account Committee (PAC) scrutiny and reporting assist tremendously in enhancing transparency in government spending by making public officials accountable for their actions and highlighting potentials waste, PAC helps ameliorate wasteful spending and improve the overall effectiveness of the budget (Ehigiamusoe & Umar, 2013).

Lastly, this study also looked at investigative oversight of public finances of the legislature as it affects budget performance in Adamawa state. The Nigerian 1999 constitution (as amended) empower the legislature to carry out an investigation into the conduct of affairs of any person, authority, ministry or government department charged or intended to be charged with the duty of or responsibility for disbursing or administering money's appropriated or to be appropriated by the legislature (Odeleye & Oguche, 2024). Similarly, investigative oversight of public finances play a crucial role in budget performance by ensuring accountability and good governance are entrenched in public organization through reviewing the budget, tracking expenditures and ensuring that funds are used for their intended purposes. These are facilitated by organizing public hearings, constitution of committees, commission of enquiries and mandating special audit and investigation of MDA. Financial legislative oversight of public finances help ensure that budget is implemented effectively and align to national priorities (Brown, 2016).

1.1 Problem Statement

Budget performance is not about the budget but rather the variations that emanates as a discrepancy between budgets passed and budget implemented. Which may be attributed to revenue shortfalls, over- reliance on loans (both foreign and local), budget deficit financing, debt burden and its servicing, corruption and misallocation of resources and weak institutional capacity. However, financial legislative oversight is crafted to ameliorate, the aforementioned threats to budget performance. Yet the legislature according to Yusuf (2020), is also plagued by numerous challenges, such as allegation of intimidation of the personnel of MDA during budget hearing and budget defense, allegation of budget padding, allege demand for kickback from MDA, and sometimes favoritism and despotism in committee membership rather than along competencies. These, informed the choice of looking at the impact of financial legislative oversight functions on budget performance in Adamawa state.

Despite, the vital role of financial legislative oversight in promoting transparency, accountability and effective resources allocation, Adamawa state, Nigeria, continues to experience budget performance challenges including misallocation of resources, poor accountability and inefficient public service delivery (Nwogwugwu and Ishola (2019). The extent to which, financial legislative oversight functions impact budget performance in the state remains unclear and there is a need to investigate the relationship between legislative oversight and budget performance to inform policy and practice improvements. Similarly, the importance of studying budget performance from the perspectives of the legislative oversight function cannot be overemphasized, there are paucity of empirical literature in this regard, as most studies examine the broader context of general effectiveness of oversight function on budget implementation without looking at the specific variables that made up the financial legislative oversight function (Odalonu, 2020).

1.2 Objectives of the Study

The main objective of this study is to examines the legislative oversight of public finances and budget performance: evidence from Adamawa state, Nigeria. Other, specific objectives are:

i. To examine the impact of appropriation oversight of public finances and budget performance: evidence from Adamawa state, Nigeria.
ii. To assess the impact of public account committee oversight of public finances and budget performance: evidence from Adamawa state, Nigeria.
iii. To find out the impact of investigative oversight of public finances and budget performance: evidence from Adamawa state, Nigeria.
iv. To find out the trend and patterns of budget performance in Adamawa state, Nigeria.

1.3 Research Hypotheses

The following hypotheses were formulated in null form to guide the attainment of the research objectives.

$H0_1$: -appropriation legislative oversight of public finances does not significantly impact budget performance: evidence from Adamawa state, Nigeria.
$H0_2$: public accounts committee legislative oversight of public finance does not significantly impact budget performance: evidence from Adamawa state, Nigeria.
$H0_3$: investigative legislative oversight of public finances does not significantly impact budget performance: evidence from Adamawa state, Nigeria.

1.4 Scope of the Study

This study focuses on examining the legislative oversight of public finances and budget performance: evidence from Adamawa state, Nigeria. The further, intends to cover a period of ten years (2014-2023) to analyze tends and patterns in budget performance and legislative oversight of public finances using both primary and secondary data.

2. Review of Related Studies

2.1 Conceptual Review

2.2.1 Concept of Budget Performance

Budget performance refers to the process of tracking, measuring and evaluating how well a budget is being implemented and whether it is achieving its intended outcomes. It involves comparing actual spending and performance against the planned budget identifying variances and taking corrective actions (Osadola et al. 2023). Budget performance therefore means how effectively and efficiently ministries, departments and agencies of government manage and utilized their designated funds and resources to achieve their goals and objectives. These goals attainment is made easier where there are checks and balances, provided by the legislative arm of government through their financial legislative oversight functions

(Osadola et al. 2023).

2.2.2 Concept of Financial Legislative Oversight Functions

(a) Appropriation Legislative Oversight

An appropriation is a provision of law that provides budget authority for federal agencies to incur obligations. ''Budget authority'' means the authority provided by law to incur financial obligations as contained in the Congressional Budget Act of 1974, Section 3 subsection (2)(A) CRS (2012). Appropriation, in a governmental context, refers to the act of setting aside funds for a specific purpose or program. It is a legislative function where the legislature allocates money from the treasury for government expenditures. Appropriations are typically authorized through the passage of appropriation bills (Garner, 2019). Also, according to Kaiser, (2018) appropriation legislative oversight can be seen as the act of setting aside funds for a specific purpose or project through a formal authorization process, usually undertaken by a legislative body. Legislative oversight, on the other hand, involves the monitoring and review of the implementation of laws and the allocation of resources by the executive arm. Appropriation legislative oversight involves the examination and approval of government budgets, ensuring that allocated funds are used for their intended purposes. It includes ongoing monitoring of expenditures to prevent misuse or inefficiency Samuel (2024).

(b) Investigative Legislative Oversight

The concept of Investigative Legislative Oversight refers to the role of legislative bodies in conducting inquiries, investigations, and oversight activities to ensure accountability, transparency, and efficiency in government operations. This function allows legislatures to examine and scrutinize the actions of the executive branch, public agencies, and other entities to safeguard the public interest and uphold democratic principles. According to Levinson (2016), investigative legislative oversight involves the systematic examination of government activities, policies, and programs by legislative bodies to assess their legality, effectiveness, and adherence to established norms. It empowers legislatures to uncover wrongdoing, promote accountability, and influence policy decisions.

(c) Public Account Committee Oversight

The concept of the Public Accounts Committee has its roots in the Westminster system of parliamentary democracy. It was first established in the United Kingdom in the 19th century. The Indian Public Accounts Committee, for example, draws its origins from the British model and was established following the Government of India Act, 1919 (Bhattacharya, 2015). Public Accounts Committee (PAC) which is a parliamentary committee in many countries is responsible for overseeing government expenditures and holding the government accountable for the way it spends public money (Riccardo, 2011). In addition, the concept of PAC oversight is a crucial aspect of parliamentary and legislative processes in many countries. PACs are committees that play a vital role in ensuring transparency, accountability, and efficiency in the use of public funds. Their primary function is to examine government expenditures and financial management to ensure that public money is spent wisely and in accordance with the law (Mike 2014). Also, the PAC is a parliamentary committee that plays a crucial role in overseeing.

2.2. Theoretical Review

The theory of good governance has evolved over time, the modern concept began to take shape in the late 20th century, with significant contributions from international organizations, scholars, and practitioners; Ancient Greece and Rome philosophers like Plato, Aristotle, and Cicero discussed ideas related to good governance, such as justice, accountability, and the rule of law. 17th and 18th centuries, thinkers like John Locke, Jean Jacques Rousseau, and Montesquieu developed ideas on constitutional governance, separation of powers, and the social contract. Good Governance Theory is a framework that emphasizes the importance of transparency, accountability, and inclusiveness in the management of public resources and decision-making processes. It is often associated with the promotion of democratic governance, sustainable development, and the rule of law. The theory aligned with legislative oversight to promotes transparency by scrutinizing the executive's actions, ensuring that government operations and expenditures are open to public and parliamentary review.

Through oversight, the legislature holds the executive accountable for its decisions, aligning with the good governance principle that public officials must answer for their actions and use of public resources. Legislative committees often engage with citizens, experts, and interest groups during oversight activities, fostering inclusive decision-making and ensuring that diverse perspectives are considered. By overseeing the implementation of laws, the legislature ensures that the executive adheres to legal frameworks, reinforcing the rule of law, a core element of good governance. Oversight helps to identify inefficiencies or mismanagement in government programs, promoting more effective use of public resources, in line with good governance goals. In essence, legislative oversight functions are essential tools for achieving good governance by ensuring that government actions are transparent, accountable, and aligned with the public interest. The presidential system of government practice in Nigeria revolves around this paradigm of good governance theory. In view of the tenant of good governance theory, this study will align the theory to budget performance and legislative oversight functions.

2.3 Empirical Review

Nwaegbu (2022), examines the performance of oversight functions on public funds by the Imo State House of Assembly(legislatures); identified factors influencing the discharge of the oversight mandate by the Committees of the Imo State House of Assembly. This study adopted the mixed research design, which is a mixture of quantitative and qualitative research designs. The choice of research design is because the study employed the use of a questionnaire as a source of primary data as well as Key Informant Interviews [KII] and the sessional reports of selected committees of the Imo State House of Assembly, as well as through primary sources (questionnaires and KII). The study also adopted the quantitative and qualitative analytical frameworks to examine the performance of oversight functions by the Imo State House of Assembly. The study found that although the Imo State House of Assembly has succeeded in exerting its oversight powers in oversighting state MDAs, its dependence on the executive arm for funding has limited its effectiveness. In addition, the study found that factors such as insufficient cooperation from the state MDAs; inadequate resources (material and financial); corruption and personal interests of the Legislators; capacity- deficiency as being major clogs in the wheel of effective performance of legislative oversight functions in Imo State. The study recommended among others provision of adequate resources for the State Legislature by Government; capacity development programmes for Legislators and their aides through partnership with capacity development institutions such as National Institute for Legislative Studies (NILDS); improved cooperation between Ministries, Departments and Agencies of government through regular retreats; adoption of self-accountability measure such as performance appraisals for the members of the Committee; and enforcement of the implementation of oversight recommendations through necessary legal instruments.

Igwe-omoke, et al. (2020), conducted study on Legislative Oversight and the Enforcement of Budget Implementation in Nigeria Army. Inferential statistics was used to analyze the data collected from the respondents. Multiple regression analysis was used to analyze the data. Finding from the study revealed that, legislative oversights are conducted annually in the Nigerian Army while monitoring and evaluation of the oversight functions have increased tremendously during the period under review. Finding from the study also revealed that, the legislative oversight committee reports on the implementation of annual budget in the Nigerian Army have not been always release to Budget Office of the Federation and even to the Nigerian Army itself. Finding from the study further revealed that, legislative oversight has been effective in addressing the revenue shortfall in budget implementation in the Nigerian Army. This is done through virement. The study, therefore, recommends that; Legislative committees on Army should sustain the effort of budget monitoring and evaluation of its oversight functions in order to increase the level of budget implementation in the Nigerian Army which is currently stood at 39%. Legislative committees on Army should always report and published legislative oversight committee reports to Budget Office of the Federation and even the Nigerian Army itself. Legislative committees on Army should sustain its legislative oversight function in addressing revenue shortfall in budget implementation in order to ensure that all projects and programmes are completed.

3. Methodology

This study adopted a descriptive survey design. The population of the study is one hundred and thirty- eight (138) which constitute twenty-seven (27) committee of Adamawa State House of Assembly, and one hundred and eleven (111) Ministries, Departments and Agencies (MDAs) of the Adamawa State government. A census sampling technique was adopted. The data for this study was collected through a combination of both primary and secondary sources through Questionnaires (structured questionnaires), interview, budget reports, legislative records, audit reports, and policy documents. Variables are measured using a 5-point Likert scale, where 5 represents (Very High Extent), 4 (High Extent), 3 (Medium Extent), 2 (Low Extent), and 1 (Very Low Extent). Criterion validity was assessed by comparing the results obtained from the study with established benchmarks, such as official budget performance reports.

Data triangulation was employed by using multiple data sources (e.g., questionnaires, interviews, and document analysis) to verify the findings and enhance the validity of the results (David et al, 2023). The reliability and consistency of the respondents' questionnaires was computed using the Cronbach Alpha method with the help of SPSS version 21, to which value of 0.7 or higher is considered acceptable, indicating that the items within each scale are consistently measuring the same construct. The data was analyzed using both quantitative and qualitative techniques. Quantitatively, descriptive statistic was conducted to determine frequencies, percentages, and mean (average), which was used to summarize the collected data from the questionnaires.

Correlation analysis, multiple regression analysis was used to test the hypotheses and determine the impact of the different forms of legislative oversight on budget performance. Qualitatively, thematic analysis was used to analyze qualitative data obtained from interviews and document. The collected data were organized and prepared for analysis by coding.

Model specification

$BP_{it} = \beta_{0it} + \beta_1 ALO_{it} + \beta_2\ ILO_{it} + \beta_3 PAC_{it} + \varepsilon_{it}$ ………………………………………………………… (i)

4. Result and Discussion

4.1. Response Rate

Table 1: Response Rate

Response	Total	Percent
Returned	108	78%
Unreturned	30	22%
Total	138	100%

Source: Researchers Collections, (2026)

The study achieved a response rate of 78% and non-response rate of 22% from a sample of 138 questionnaires administered, which constitute Twenty-Seven (27) committee of Adamawa State House of Assembly, and One Hundred and Eleven (111) Ministries, Departments and Agencies (MDAs) of the Adamawa State government and out of which 108 were filled and returned and the analysis based on it. This is an acceptable response rate Z status, professional qualification, experience in service/ elected to state assembly and experience in budget and budgetary matters.

4.2 Demographic Data

Table 2. Demographic Data

Variables	Values	N	%
Gender	*Male*	*77*	*71.3%*
	Females	*31*	*28.7%*
Age Group	*18-25 years*	*0*	*0%*
	26-40 years	*21*	*19.4%*
	41-60 years	*87*	*80.6%*
	Above 60 years	*0*	*0%*
Marital Status	*Married*	*96*	*88.9%*
	Single	*6*	*5.6%*
	Divorcee	*0*	*0%*
	Widowed	*6*	*5.6%*
Educational Status	*Primary/ Secondary School*	*0*	*0%*
	Diploma/ Certificate	*10*	*9.3%*
	Degree/ HND	*79*	*73.1%*
	Masters/ Doctorate Degree	*19*	*17.6%*
Professional Qualification	*Yes*	*71*	*65.7%*
	No	*37*	*34.3%*
Experience in Service	*1-5 years*	*18*	*16.7%*
	6-15 years	*55*	*50.9%*
	16-20 years	*14*	*13.6%*
	Above 20 years	*21*	*19.4%*
Experience in Budget	*1-5 years*	*43*	*39.8%*
	6-15 years	*55*	*50.9%*
	16-20 years	*6*	*5.6%*
	Above 20 years	*4*	*3.7%*

Table 2, depicts the demographic characteristics of the data, it shows that out of the total 108 respondents, 77 were males representing 71.3% and 31 were females representing 28.7%. And the age groups of the respondents are 18-25 with no respondent, while 26-40 years has 21 respondents with 19.4% and 41-60 years with 87 respondents representing 80.6%. The marital status of the respondents shows that married are 96 with 88.9%, single and widowed each having 6 respondents representing 5.6% respectively. The table also indicate that educational status of the respondents are diploma/ certificates with 10 respondents indicating 9.3%, while those with degree or HND are 79 representing 73.1% and those with Masters/ Doctorates degree are 19, with 17.6%. 71 respondents indicating 65.7% have a professional qualification and 37 respondents representing 34.3% do not have any professional qualification. The score for experience in service or elected as member of state assembly shows that 1- 5 years have a score of 18 respondents with a percent score of 16.7%, while majority of the respondents fall in the 6-15 years' experience with a score of 55 and a percent of 50.9%, and those with 16-20 years in service have a score of 14 with a percent of 13. Those with above 20 years' experience in service accounted for 21 (19.4%). The responses indicate that those with 6-15 years' experience in budget and budgeting matters accounted for the highest among the respondents with a score of 55 (50.9%), and those with 1-5 years' experience accounted for 43 (39.8%), while those with 16-20 years accounted for 6 (5.6%) and the above 20 years has a score of 4 (3.7%).

4.3. Reliability Test

Table 3: Cronbach's Alpha Table

Cronbach's Alpha	No. of items
.796	4

SPSS output, (2026)

The table 3 shows that the Cronbach's Alpha of this study is 0.796, which is very close and therefore shows that the variables for the study are reliable. This agrees to threshold established by Sekaran (2008); and Mugenda and Mugenda (2003).

4.4. Descriptive Statistics

Table 4: Summary of Descriptive Statistics of the variables

Variables	Mean	Std. dev.	Minimum	Maximum	Skewness	Kurtosis	N
Budget Perf.	3.51	0.65	1.86	4.71	-0.398	-0.167	108
Appropriation	3.32	0.55	2.40	5.80	1.044	3.364	108
Public Acc.	3.49	0.47	2.57	5.00	0.791	1.482	108
Investigative	3.53	0.60	2.14	5.00	0.288	0.048	108

Source: Researchers SPSS output, (2026)

Table 4.4 shows that budget performance been the dependent variables has a mean of 3.51 and a standard deviation of 0.65 with a minimum value of 1.86 and a maximum value of 4.71 suggesting that the respondents on the averages moderately agrees that financial legislative oversight of public finances influences budget performances. It also shows that with a skewness coefficient of -0.398, the variable is negatively skewed and a kurtosis of -0.167. Appropriation legislative oversight of public finances has a mean coefficient of 3.32 and a standard deviation of 0.55, and a minimum value of 2.40 and a maximum value of 5.80 indicating that the respondents are of the opinion that appropriation legislative oversight of public finances moderately affects budget performance. The variable is positively skewed with a

coefficient of 1.044 and a kurtosis of 3.364 which is in the platykurtic range.
The mean value of the responses on the public account committee oversight of public finances with a coefficient of 3.49 and a standard deviation of 0.47 and a minimum value of 2.57 and maximum value of 5.00 which indicates that public account committee moderately affect budget performance in the state. The variable is positively skewed with a coefficient of 0.791 and a kurtosis of 1.482, which is within the mesokurtic range. Table 4 further shows that investigative legislative oversight of public finances with a mean value of 3.53 and a standard deviation of 0.60, with a minimum value of 2.14 and a maximum value of 5.50, indicating that this variable affect budget performance as shown by the responses. The variable is positively skewed with a coefficient of 0.288 and a kurtosis of 0.048 which is within the mesokurtic range.

4.5. Correlation Matrix

Table 5: Pearson Correlation Coefficient Result

Variables	Budget Perf.	Appropriation	Public Account	Investigative
Budget Perf.	1.000			
Appropriation	0.365	1.000		
Public Account	0.495	0.664	1.000	
Investigative	0.496	0.447	0.621	1.000

Sources: Researcher's SPSS output, 2025.

Table 5, shows the relationship between budget performance and all pairs of the independent variables individually between themselves and cumulatively with the dependent variables of the study. The significance level is at 0.05 with a confidence level of 95%. The results indicate a low positive linear relationship between budget performance and appropriation oversight of public finances with a coefficient of 0.365, while between budget performance and other two independent variables of public account committee and investigative oversight of public finances with coefficients of 0.495 and 0.496 respectively indicating a strong positive linear relationship. The relationship between Appropriation oversight and other two dependent variables (public accounts committee and investigative oversight) with coefficients of 0. 664 and 0.447 indicating a strong positive linear relationship. And the relationship between public account committee and investigative oversight of public finances with coefficient of 0.621, indicate a strong positive linear correlation.

4.6. Normality Test

Table 6: Shapiro-wilk Test

Variables	Statistics	Sig.
Budget Perf.	0.967	0.009
Appropriation oversight	0.919	0.000
Public Account	0.945	0.013
Investigative oversight	0.969	0.000

Sources: Researcher's SPSS output, 2025.

Table 6 shows that budget performance and public account are normality distributed while appropriation oversight and investigative oversight of public finances are not normally distributed.

4.7. Autocorrelation Test

Table 7: Durbin-Watson

Cronbach's Alpha	No. of items
2.091	4

SPSS output, (2026)

The autocorrelation test was carried out to find if there is autocorrelation present in the data using Durbin-Watson. The general rule is that values near 2 suggest that there is no autocorrelation while value near 0 indicates a degree of positive autocorrelation and values near 4 indicate a high degree of negative autocorrelation. The Durbin-watson of this study has a coefficient of 2.091 which suggested absence of autocorrelation in the data.

4.8. Test for Multicollinearity

Table 8: Multicollinearity Test Result

Variables	**Tolerance**	**VIF**
Appropriation oversight	0.557	1.798
Public account	0.428	2.337
Investigative oversight	0.613	1.632

Sources: Researcher's SPSS output, (2026).

Table 8 shows a tolerance value of 0.557, 0.428 and 0.613 for appropriation oversight, public account committee and investigative oversight of public finances respectively. Which are all greater than 0.10 and the VIF values of 1.798, 2.337 and 1.632 for appropriation oversight, public account and investigative oversight of public finances respectively, are less than 10. Therefore, there is no present of multicollinearity in the independent variables.

4.9. Test of Hypotheses

The dependent variable budget performance was regressed on the predicting variables of appropriation legislative oversight of public finances public account committee legislative oversight of public finances and investigative legislative oversight of public finances. The independent variables of appropriation legislative oversight of public finances, public account committee legislative oversight of public finances and investigative legislative oversight of public finances are statistically positively significant in predicting, budget performance $f(3, 104) = 15.164$, $p < 0.001$ which indicates that the three factors under study have a significant impact on budget performance. Moreover, the R2 = 0.304 depicts that the model explains 30.4% of the variance in budget performance. Additionally, the coefficients were further assessed to ascertain the influence of each of the factors on the criterion variable (budget performance); H1, evaluates whether appropriation legislative oversight of public finances do not significantly affect budget performance. The results revealed that appropriation legislative oversight of public finances have a statistically non-significant negative impact on budget performance ($B=-0.054$, $t = 0.441$, $p = 0.675$). This suggests that the appropriation legislative oversight of public finances may not be a significant predictor of budget performance in Adamawa State. Hence H1 supported.

Further, H2 assesses whether public account committee legislative of public finances do not significantly impact budget performance. The regression result indicates that public account committee has a statistically positive significant impact on budget performance (B = 0.383, t = 2.203, p = 0.030) and this indicates that effective oversight by the public account committee is associated with improved budget performance, hence H2 was not supported. H3 examined the significant impact of investigative legislative oversight of public finances and budget performance. The results of the regression revealed a statistically significant positive impact of investigative legislative oversight functions on budget performance (B = 0.329, t = 2.916, p = 0.004), this suggests that investigative oversight of public finances play a crucial role in ensuring transparency and accountability in budget execution, leading to improved budget performance. H3 not supported.

4.10 Analysis of Secondary Data

Table 9: Adamawa State 2015-2024 budget Proposal and Actual

Years	Budget Proposal (₦)	Actual Budget (₦)	% of Implementation
2015	100,890,536,580.00	62,101,528,899.33	61.55
2016	120,126,857,430.00	83,815,193,695.95	69.77
2017	105,459,016,000.00	73,262,698,785.00	69.47
2018	162,795,913,100.00	48,995,167,384.00	30.09
2019	230,989,412,375.00	56,587,631,676.00	24.50
2020	183,360,699,485.00	140,072,711,860.00	76.39
2021	140, 034,409, 440.00	127,171,329,340.00	90.81
2022	163, 629,910,040.00	116,215,524,831.31	71.02
2023	173,019,054,060.00	214,280,968,767.63	123.84
2024	225,893,690,626.00	281,150,285,906.00	124.46

Source: Adamawa state Budget office Document, (2026)

Regressing budget implementation index which is the implementation percentages (performance) on the predicting variables of appropriation oversight of public finances, public account committee oversight of public finances and investigative oversight of public finances. The independent variables of appropriation oversight of public finances, public account committee oversight of public finances, and investigative oversight of public finances are statistically positively insignificant in predicting budget performance f (3, 6) =0.958, p> 0.471 which indicates that the four factors under study have an insignificant impact on budget performance. Moreover, the R2 = 0.324 depicts that the model explains 32.4% of the variance in budget performance. Furthermore, the trend on the graph shows below that budget implementation vis-à-vis its performance has shown a steady rise in the implementation index with the exception of 2018 and 2019 which indicates a serious decline in the implementation and these was attributed to the Covid-19 lock-down, which resulted in disruptions in governance.

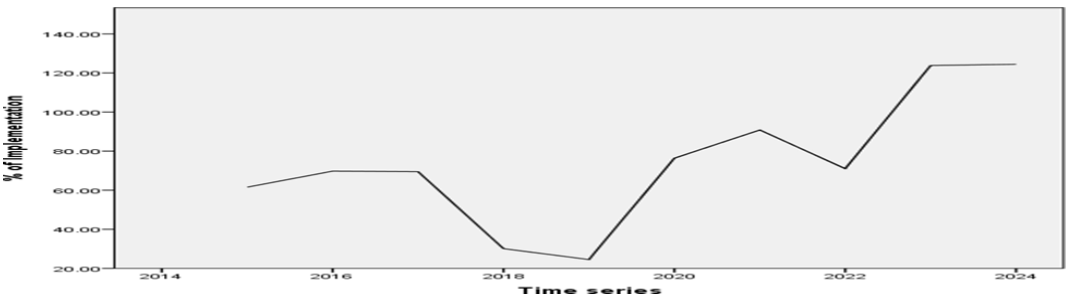

Figure 1: Graph showing Budget Implementations Sources: Researchers SPSS output, (2026)

4.11. Discussion of Findings

The study examined the impact of legislative oversight of public finances on budget performance in Adamawa State, Nigeria. The findings revealed that legislative oversight of public finances significantly impact budget performance. The study found that appropriation legislative oversight of public finances has a negative and insignificant impact on budget performance. This suggests that effective oversight of the appropriation process would no ensure that funds are allocated efficiently and effectively, leading to improved budget performance. The findings imply that the legislature plays a crucial role in ensuring that the budget is aligned with the state's priorities and that funds are utilized for intended purposes. This finding is in line with the study of Nwaegbu et al, (2022) which revealed positive significant effect of and contradict the study of Igwe-Omoke et al, (2020) which reported positive but insignificant impact of legislative oversight of public finances on budget performance respectively. This finding is supported with theory of Good Governance because legislative committees often engage with citizens, experts, and interest groups during oversight activities, fostering inclusive decision-making and ensuring that diverse perspectives are considered, which is the fundamental aspect to this theory.

The study discovered that public account committee oversight of public finances has a significant impact on budget performance. This indicates that effective oversight of public accounts ensures transparency and accountability in budget execution, leading to improved budget performance. The findings suggest that the public account committee plays a vital role in scrutinizing public expenditures and ensuring that funds are utilized efficiently. This finding is in line with the study of Nwaegbu et al, (2022) which revealed significant impact of public account committee oversight of public finances on budget performance. This finding is further supported with theory of Good Governance by overseeing the implementation of public laws, the legislature oversight of public finances ensures that the executive adheres to legal frameworks, reinforcing the rule of law, securing public accounts, a core element of good governance.

The study found that investigative oversight of public finances has a significant impact on budget performance. This implies that effective investigation of budget-related issues ensures that irregularities are identified and addressed, leading to improved budget performance. The findings suggest that investigative oversight of public finances help to prevent corruption and ensure that public funds are utilized for intended purposes. This finding is in line with the study of Igwe-Omoke et al, (2020) which reported positive impact of legislative oversight of public finances on budget performance respectively. Moreover, this finding is supported with theory because investigative oversight of public finances helps to identify inefficiencies or mismanagement in government programs, promoting more effective use of public resources, in line with good governance goals.

Overall, the study revealed that legislative oversight of public finances has a crucial and pivotal role in ensuring improve budget performance, with all the variables showing some proportion of effect on performance which is further enhance by the secondary data obtain which shows an upward trend in budget implementations with exception of the covid-19 pandemic period, when budget implementation was derailed by the pandemic. Though, the secondary data also revealed measuring budget performance becomes very turbulent and cumbersome due to enactment of supplementary budgets. In essence, legislative oversight functions are essential tools for achieving good governance by ensuring that government actions are transparent, accountable, and aligned with the public interest.

5. Conclusion and Recommendations

5.1 Conclusion

The study concludes that legislative oversight of public finances is crucial for ensuring effective budget performance in Adamawa State. The findings suggest that effective oversight of the appropriation process, public accounts, and investigative of public finances helps to prevent corruption, ensures transparency and accountability, and promotes efficient budget execution. The study emphasizes the need for the legislature to strengthen its oversight of public finances to ensure effective budget performance. The findings highlight the importance of effective oversight of public finances via the appropriation process, public accounts, and investigative of public finances ensures transparency, accountability, and efficiency in budget execution.

5.2. Recommendations

The legislature should strengthen its oversight functions to ensure effective budget performance. Capacity Building: Capacity building programs should be organized for legislators to enhance their oversight functions. The government should prioritize transparency and accountability in budget execution to ensure effective budget performance. The legislature should effectively utilize oversight tools, such as public account committee reports and investigative reports, to inform budget decisions. The legislature should collaborate with civil society organizations to promote transparency and accountability in budget execution. By implementing these recommendations, the government and legislature can promote effective budget performance, transparency, and accountability in Adamawa State.

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EFFECT OF ARTIFICIAL INTELLIGENCE ON QUALITY OF

FINANCIAL REPORTING OF SELECTED MINISTRIES IN EKITI STATE, NIGERIA

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Abstract
This study examined the effect of Artificial Intelligence (AI) on the quality of financial reporting in selected ministries in Ekiti State, Nigeria. The study adopted a descriptive survey design, and data were collected from 80 accounting and finance staff through structured questionnaires. The findings showed that the level of AI adoption in the ministries is moderate, as more attention is given to staff training and infrastructure development than to the full use of AI in daily accounting activities. The study also revealed that AI has improved the accuracy, timeliness, transparency, and reliability of financial reports by reducing errors, improving auditing processes, and making report preparation faster and clearer. However, the effective use of AI is limited by challenges such as inadequate infrastructure, insufficient funding, limited technical skills, resistance to change, and data security concerns. The study concluded that AI positively influences financial reporting quality in the selected ministries. It therefore recommended improved investment in AI infrastructure, continuous staff training, adequate funding, stronger data security policies, and gradual integration of AI into routine accounting operations to improve public sector financial reporting.

Key Words: Accounting, Artificial Intelligence, Financial Reporting, Infrastructure

1. Introduction

Artificial Intelligence (AI) is changing the way accounting systems operate in both private and public organizations, specifically in Ekiti State, Nigeria. Many accounting tasks that were previously done manually are now supported by intelligent systems. Kokina and Blanchette (2022) supported this assertion, stating that the use of tools such as robotic process automation and machine learning is now on the increase in accounting practices, with the aim of improving efficiency and reducing human errors. In support of this, Sutton, Holt, and Arnold (2023) stressed that AI systems help accountants analyse large volumes of data and detect unusual transactions more quickly than traditional methods. Further to this, Issa, Sun, and Vasarhelyi (2022) reiterated that AI is now embedded in core accounting functions such as transaction processing, reconciliation, forecasting, and auditing. Similarly, the OECD (2023) also affirmed that AI technologies are becoming part of regular financial operations in many public institutions around the world.

Furthermore, the World Bank report (2022) explains that governments are gradually adopting digital platforms to improve budgeting, expenditure tracking, and financial reporting transparency. This same view was expressed by the African Development Bank (2023) report that many African countries are gradually integrating automation and data-driven systems into their public financial systems to improve accountability and governance. A ready reference on the adoption of digital technology in accounting practices is contained in a report by the Federal Ministry of Communications and Digital Economy (2022) which pointed out that the government is now prioritizing digital reforms to modernize financial management systems and enhance public accountability in accounting practices in Nigeria.

Notwithstanding the advances in the digitalization of accounting procedures as indicated above, it must be noted, however, that financial reporting in Nigeria's public sector still faces serious challenges. Some of these challenges include, but are not limited to, recurring problems such as delayed financial statements and weak compliance with reporting standards. To corroborate this, Eze, Okoye, & Okafor (2022) observed that inconsistencies and weak internal controls continue to affect the quality of public sector financial reports. Ibrahim & Danjuma (2024) also echoed that gaps in digital systems contribute to reporting inefficiencies and reliability concerns. These challenges, they stated, reduce transparency and weaken public trust in government financial management.

Consequently, there is a growing demand for automation and stronger accountability in public financial systems. Al-Htaybat and von Alberti-Alhtaybat (2022) argued that intelligent automation can reduce manual errors and improve the integrity of financial data. In support, Kokina and Davenport (2023) added that AI systems improve the speed and accuracy of financial reporting processes. In Nigeria, there are evidences that also highlight the fact that the adoption of AI in accounting practices can help address inefficiencies and strengthen reporting outcomes, especially in public institutions.

At the state level, ministries play a central role in preparing and presenting financial reports. In Ekiti State, ministries are responsible for implementing budgets, recording revenues and expenditures, and preparing periodic financial statements for accountability and legislative review. However, state-level public financial management still faces operational challenges such as delays in financial statement preparation and weak system integration across departments (Oladipo and Igbekoyi, 2023). The Auditor-General for Ekiti State (2024) also identifies issues such as manual processing errors and compliance gaps in reporting practices. These weaknesses show the need for improved systems and stronger digital solutions.

This perhaps underscores the decision of the Nigeria's Governors' Forum (2023) on the urgent need to upgrade financial management information systems and expand electronic payment platforms to improve transparency in line with the World Bank (2022) recommendation that digital financial systems should be adopted by governments at all levels to strengthen fiscal discipline and service delivery. However, in spite of these efforts, the level of AI integration in accounting systems remains limited and has not been widely studied.

It is important to state that AI has strong potential to improve public financial management practices. Issa, Sun, & Vasarhelyi (2022) explained that "automation can handle repetitive tasks such as data entry and reconciliation with minimal human involvement". Sutton, Holt, and Arnold (2023) show that AI-driven fraud detection systems can identify unusual transactions and strengthen internal controls. In addition, World Bank report (2022) pointed out that digital systems enable real-time reporting and better financial analysis, while the African Development Bank suggests that government ministries and parastatals should embrace digital processing of accounting reports.

A major index for measuring quality financial reporting in the public sector includes accuracy, timeliness, transparency, and reliability. Eze, Okoye, & Okafor (2022) agreed that reliable reporting strengthens accountability in public institutions. Similarly, Kokina & Davenport (2023) believed that automated systems reduce data-entry errors and improve accuracy.

Although many studies highlight the benefits of AI in accounting, there is limited empirical evidence on how AI adoption affects financial reporting quality at the state ministry level. Examining this relationship in Ekiti State is not only important for understanding whether AI can truly improve accuracy, timeliness, transparency, and reliability in public-sector financial reporting but also for helping policymakers strengthen digital reforms and improve accountability in public financial management.

1.1. Statement of the Problem

Despite the digital reforms introduced to improve public financial management in Nigeria, many state ministries still face challenges in financial reporting. These challenges include delays in preparing financial statements, errors from manual processing, weak internal controls, and limited transparency. These problems reduce the quality and reliability of financial reports and weaken public accountability. As a result, it becomes difficult to properly monitor the use of public funds, which may increase the risk of financial mismanagement, fraud, and loss of public trust in government institutions.

Artificial Intelligence (AI) is believed to improve accounting and financial reporting by automating tasks, reducing errors, and supporting faster and more accurate reporting. However, the use of AI in public sector accounting is still limited, especially in state ministries. In Ekiti State, there is little clear evidence on whether AI adoption has improved the accuracy, timeliness, transparency, and reliability of financial reporting. Therefore, this study seeks to examine the effect of Artificial Intelligence on the quality of financial reporting in selected ministries in Ekiti State, Nigeria.

Based on the above problem, the following research questions were raised:

1. To what extent have the selected ministries in Ekiti State adopted Artificial Intelligence in their accounting systems?
2. How has the adoption of Artificial Intelligence influenced the accuracy of financial reporting in the selected ministries?
3. In what ways has Artificial Intelligence adoption affected the timeliness, transparency, and reliability of financial reports in these ministries?
4. What challenges do the selected ministries face in implementing Artificial Intelligence for public sector accounting and financial reporting?

1.2. Purpose of the Study

The purpose of this study is to examine how the adoption of Artificial Intelligence in public sector accounting systems affects financial reporting quality in selected ministries in Ekiti State, Nigeria. The study aims to find out whether the use of AI improves the accuracy, timeliness, transparency, and reliability of financial reports, and whether it helps to strengthen accountability and public financial management at the state level.

2. Literature Review

Artificial Intelligence (AI) is reshaping accounting practices in both public and private sectors. Holmes and Douglass (2022) explain that AI involves intelligent systems, machine learning, robotic process automation, and data analytics that perform tasks such as transaction recording, reconciliation, and financial reporting that were traditionally done manually. In public sector accounting, Gu, Schreyer, Moffitt, and Vasarhelyi (2024) note that AI helps to automate routine processes like ledger posting and report generation, which reduces errors and improves efficiency. Han, Shiwakoti, Jarvis, Mordi, and Botchie (2023) further state that AI supports budgeting and forecasting through advanced data analytics, allowing governments to make better financial decisions based on real-time information. In addition, Holmes and Douglass (2022) observe that AI improves fraud detection and compliance monitoring by identifying unusual financial transactions and supporting early intervention.

Financial reporting quality is an important aspect of public sector accountability. Han et al. (2023) explain that it is usually measured through accuracy, timeliness, reliability, and transparency. Accuracy ensures that financial reports are free from errors, timeliness ensures that information is available when needed, reliability ensures consistency with accounting standards, and transparency ensures that financial information is clear and understandable to users. Gu et al. (2024) add that high-quality financial reporting improves accountability, reduces corruption risks, and strengthens public trust in government financial management.
The adoption of AI in accounting can be explained using the Technology Acceptance Model and Institutional Theory. Davis (1989) and Venkatesh and Bala (2022) explain that the Technology Acceptance Model suggests that individuals are more likely to adopt a technology when they believe it is useful and easy to use. In public ministries, this means that staffs are more likely to use AI tools when they see them as helpful in improving accounting tasks and reporting quality. The Technology Acceptance Model (TAM) refers to the theoretical framework used to predict people’s response to a new technology at any given point in time. Fred Davis developed TAM in 1989. It is premised on the assumption that every rational being accepts to use a new technology based on their own perception of its usefulness and how easy they think the technology is to use.

TAM has however faced some criticisms, namely, that reliance on behavioural intention for adoption of new technology represents an oversimplification of the inherent challenges in the use of technology and that the perception of the relevance of a particular technology and the actual decision to use it are highly dependent on the context and specific tasks to be accomplished.

Scott (2014) explains Institutional Theory by stating that organizational rules, norms, and external pressures influence behaviour in institutions. The theory contends that the adoption of certain accounting practices and standards are influenced on one hand by the factor of efficiency and on the other hand by the factors of legitimacy, and social norms of the society. In public sector organizations, Adamu, Abubakar, and Shuaib (2024) note that government regulations, accountability demands, and digital policies encourage the adoption of new technologies such as AI which in turn improves financial reporting outcomes.

Empirical studies have shown that AI improves accounting processes and public financial management. Gu, Schreyer, Moffitt, and Vasarhelyi (2024) investigated the effect of AI-based auditing systems on accounting processes using a qualitative and analytical approach. They found that AI reduces errors and improves the speed of financial reporting. However, the study focused mainly on auditing systems and did not fully examine broader financial reporting quality such as transparency and reliability in government ministries.

Holmes and Douglass (2022) examined the impact of AI on accounting practices and professional roles using a conceptual and applied review approach. They found that AI improves efficiency by automating routine accounting tasks and also changes the skills required of accounting professionals. However, the study did not provide empirical evidence on how AI directly affects financial reporting quality in public sector institutions.

Han et al. (2023) studied the role of AI and data analytics in public budgeting and financial planning using empirical data analysis from public financial systems. They found that AI improves fraud detection, compliance monitoring, and financial decision-making through real-time data analysis. However, the study focused more on budgeting and planning rather than financial reporting quality at the operational level of ministries.

Studies in developing countries show that AI and digital accounting systems improve transparency and efficiency in public financial management. However, Han et al. (2023) and Gu et al. (2024) also note that weak infrastructure and limited technical skills often slow down effective adoption. These studies are mostly cross-country in nature and do not provide detailed evidence at the subnational level.

In Nigeria, digital financial reforms have been introduced to improve public sector accountability, but empirical studies at the state ministry level remain limited. Most existing studies focus on national-level reforms, leaving a gap in understanding how AI affects financial reporting quality in state ministries. Therefore, there is limited evidence on how AI adoption influences accuracy, timeliness, transparency, and reliability of financial reports in ministries, particularly in Ekiti State.

Overall, the literature shows that AI has strong potential to improve accounting efficiency, fraud detection, and financial management. However, there is still limited empirical evidence on its effect on financial reporting quality in state ministries. This study therefore addresses this gap by examining the effect of Artificial Intelligence on the quality of financial reporting in selected ministries in Ekiti State, Nigeria.

3. Methodology

The study adopted a descriptive research design using a cross-sectional survey approach. This design was considered appropriate because it enabled the researcher to examine the current level of artificial intelligence (AI) adoption and its effect on financial reporting quality among accounting and finance staff in selected ministries in Ekiti State at a particular point in time. The study was carried out in three selected ministries in Ekiti State, namely the Ministry of Budget and Planning, the Ministry of Finance, and the Ministry of Health. The population of the study consisted of 120 accounting and finance staff members drawn from the three ministries. A stratified sampling technique was used to ensure that staffs from the different ministries and job categories were fairly represented in the study. Out of the total population, 80 respondents were eventually selected and used for the study based on long year of service and level of certification.

Data for the study were collected through the use of a structured questionnaire. The questionnaire was designed using a 4-point Likert scale ranging from “Very High Extent (VHE)” to “Low Extent (LE).” The instrument was divided into two main sections. The first section focused on AI adoption by examining the extent to which AI technologies are used in financial operations and reporting processes. The second section examined financial reporting quality by assessing the accuracy, reliability, and timeliness of financial reports produced within the ministries.

To ensure the validity of the instrument, the questionnaire was reviewed by experts in accounting, finance, and artificial intelligence in public sector organizations. Their observations and suggestions helped to confirm that the instrument adequately measured the variables of the study. The reliability of the instrument was tested using Cronbach’s Alpha, and a reliability coefficient of 0.70 and above was considered acceptable for the study. Before the administration of the questionnaire, ethical approval and official permission were obtained from the selected ministries. The questionnaires were distributed electronically to respondents to make participation easier and to ensure the confidentiality and privacy of their responses. The data collected were analyzed using both descriptive statistical methods. Descriptive statistics such as mean and standard deviation were used to summarize and interpret respondents’ opinions. Correlation analysis was used to determine the relationship between AI adoption and financial reporting quality, while multiple regression analysis was employed to examine the effect of AI adoption on financial reporting quality.

Results

Research Question 1: To what extent have the selected ministries in Ekiti State adopted Artificial Intelligence in their accounting systems?

Table 1: Extent of Adoption of AI in Accounting Systems in some Selected

Ministries in Ekiti State

S/NO	ITEM	VHE	H E	ME	LE	MEAN	SD	REMARK
I	To what extent are AI-based accounting software systems integrated into routine financial operations of your ministry?	8	10	15	41	1.80	1.04	Disagree
ii	To what extent are AI tools used for automated data entry, transaction processing, and reconciliation n your ministry?	9	11	18	35	1.92	1.06	Disagree
iii	To what extent are AI applications utilized for budgeting, forecasting, and financial planning activities in your ministry?	6	8	16	43	1.68	0.96	Disagree
iv	To what extent are AI-driven analytics and reporting tools embedded in financial decision- making processes in your ministry?	8	11	14	40	1.82	1.05	Disagree
V	To what extent have your ministry invested in AI infrastructure and staff training to support accounting automation?	14	17	22	20	2.34	1.08	Disagree

Source: Field work 2026

The respondents mostly agree that the selected ministries in Ekiti State are using Artificial Intelligence (AI) in their accounting systems, but the use is not very high. Most scores show a moderate level of adoption, meaning AI is being used, but not in all daily accounting tasks. The highest score is for investment in AI infrastructure and staff training, which shows that ministries are focusing more on preparing for AI than fully using it yet. The small differences in responses show that most people think the same way about this.

Overall, AI is being adopted, especially in training and building systems, but its use in regular accounting work is still limited.

Research Question 2: How has the adoption of AI influenced the accuracy of financial reporting in the selected ministries?

Table 2: Influence of the Adoption of AI on Accounting Systems in some Selected Ministries in Ekiti State

S/NO	ITEM	VHE	HE	ME	LE	MEAN	SD	REMARK
vi	To what extent has AI adoption reduced clerical and computational errors in financial records?	11	14	28	20	2.22	1.01	Disagree
vii	How has AI improved the detection and correction of anomalies in accounting data?	10	18	23	22	2.22	1.02	Disagree
viii	To what extent has AI enhanced compliance with public sector accounting standards and regulations in your ministry?	10	16	27	20	2.22	1.00	Disagree
xi	How has AI strengthened data validation and verification mechanisms in financial reporting in your ministry?	14	12	19	28	2.22	1.00	Disagree
x	To what extent has AI minimized inconsistencies and discrepancies in financial statements?	12	18	19	24	2.25	1.08	Disagree

Source: Field work 2026

The respondents generally agree that using Artificial Intelligence (AI) will improve the accuracy of financial reporting in the selected ministries. They also believe that use of AI will help reduce mistakes, find and fix errors, and make sure financial records follow the rules. The respondents also agreed that adoption of AI will make checking and verifying data easier, and helps make financial statements more consistent.

Generally, the respondents see AI as a useful tool that will make financial reporting more accurate, even though it does not completely eliminate all errors.

Research Question 3: In what ways has AI adoption affected the timeliness, transparency, and reliability of financial reports in these ministries?

Table 3: Effect of AI Adoption on the Timeliness, Transparency, and

Reliability of financial reports in some Selected Ministries in Ekiti State

S/NO	ITEM	VHE	HE	ME	LE	MEAN	S D	REMARK
xi	Adoption of AI will reduce the time required to prepare and submit financial reports in your ministry?	14	12	20	27	2.82	1.13	Agree
xii	Adoption of AI will enable real-time or near real-time financial reporting your ministry?	10	9	23	21	2.87	1.05	Agree
xiii	AI will improve the traceability and auditability of financial transactions your ministry?	13	16	20	24	2.75	1.10	Agree
xiv	Use of AI will enhance stakeholders' access to clear and understandable financial information your ministry?	16	12	23	22	2.70	1.12	Agree
xv	Use of AI will strengthen the consistency and dependability of financial reports over reporting periods your ministry?	16	12	24	19	2.65	1.10	Agree

Source: Field work 2026

The respondents generally agree that adopting Artificial Intelligence (AI) will improve the timeliness, transparency, and reliability of financial reports in the selected ministries. They feel that use of AI will enhance the timely preparation and real-time reporting of financial transactions. They are also of the opinion that AI will make it easier to trace transactions, audit records, and provide clear information to stakeholders.

Summarily, all the respondents see AI as a helpful tool that can make financial reporting quicker, clearer, and more reliable.

Research Question 4: What challenges do the selected ministries face in implementing AI for public sector accounting and financial reporting?

Table 4: Challenges Faced in the Adoption of AI for Public Sector Accounting

and Financial Reporting in some Selected Ministries in Ekiti State

S/NO	ITEM	VHE	HE	ME	LE	MEAN	SD	REMARK
xvi	To what extent has technological limitations (e.g., inadequate infrastructure or system incompatibility) hinder AI implementation your ministry?	30	21	12	9	2.00	1.04	Disagree
xvii	To what extent financial constraints affect the procurement and maintenance of AI systems your ministry?	28	26	12	7	1.97	0.96	Disagree
xviii	To what extent does limited technical expertise among accounting staff restrict effective AI utilization your ministry?	23	25	18	7	2.12	0.96	Disagree
xix	To what extent does organizational resistance or cultural barriers impede AI adoption your ministry?	17	20	29	7	2.36	0.94	Disagree
xx	To what extent does regulatory policy, or data security concerns affect the implementation of AI in public sector accounting your ministry?	18	22	17	16	2.42	1.09	Disagree

Source: Field work 2026

The respondents agree that there are several challenges in adopting Artificial Intelligence (AI) for public sector accounting and financial reporting in the selected ministries. They feel that technology problems, like poor infrastructure or systems that do not work well together, make it harder to use AI. Limited funding also makes it difficult to buy and maintain AI systems.

Another challenge is lack of technical skills among accounting staff, which affects how well AI can be used. Some respondents also mentioned resistance within the organization or cultural barriers as a hurdle. Finally, regulations and concerns about data security can slow down AI implementation.

It is believed that, while AI adoption is happening, these technological, financial, skills, cultural, and policy challenges make it harder for ministries to fully use AI in their accounting systems.

4. Discussion of Findings

The study examined the adoption of Artificial Intelligence (AI) and its effect on accounting systems and financial reporting in selected ministries in Ekiti State. The findings, interpreted using mean scores and supported with simple econometric reasoning, show a mixed pattern of outcomes. The level of AI adoption is generally low, as all mean values range from 1.68 to 2.34, which are below the accepted benchmark of 2.50. This indicates that AI is not yet widely integrated into routine accounting activities such as budgeting, transaction processing, and financial reporting. In econometric terms, this suggests a weak relationship between AI adoption and the transformation of accounting systems, meaning that AI currently has limited explanatory power in driving changes in how accounting operations are performed across the ministries.

The findings further show that AI has not significantly improved the accuracy of financial reporting. All mean values in this aspect (2.22 to 2.25) fall below the decision threshold, indicating disagreement among respondents. This suggests that AI has not yet made a strong measurable contribution to reducing errors, improving compliance, or enhancing data validation processes. From a simple regression perspective, this implies a weak positive relationship between AI adoption and reporting accuracy, where the effect exists but is too small to be considered strong or substantial. In practical terms, AI has not yet translated into meaningful improvements in the precision and reliability of accounting records in the ministries.

In contrast, the results show a more positive outcome in the area of timeliness, transparency, and reliability of financial reports. The mean scores in this section range from 2.65 to 2.87, which are above the acceptance level. This indicates that respondents agree AI has improved the speed of report preparation, enabled near real-time reporting, and enhanced the traceability and clarity of financial information. From an econometric viewpoint, this reflects a moderate positive relationship between AI adoption and financial reporting quality outcomes. In simple terms, AI appears to have a stronger effect on improving how fast and how clearly financial information is produced and communicated than on improving technical accuracy.

The study further reveals that challenges such as infrastructure limitations, financial constraints, lack of technical expertise, organizational resistance, and regulatory concerns were rated below the acceptance level, suggesting that respondents do not view these factors as strong barriers in the current context. Econometrically, this implies that the relationship between these constraints and AI adoption is weak within the sampled ministries. While these challenges exist in practice, they do not strongly explain the variation in AI usage levels observed in the study. This may also suggest that other unmeasured factors could be influencing AI adoption more significantly.

Overall, the combined findings suggest that AI adoption in the selected ministries is still at an early stage of development. Its impact is more noticeable in improving the efficiency and transparency of financial reporting than in enhancing accuracy and error reduction. In econometric terms, AI has a positive but uneven effect on financial reporting outcomes, with stronger influence on timeliness and transparency, and weaker influence on accuracy. This indicates that the ministries are still undergoing a gradual digital transition, where AI supports reporting processes but has not yet fully transformed core accounting functions.

5. Conclusion and Recommendations

Conclusion

This study examined the adoption of Artificial Intelligence (AI) and its effect on accounting systems and financial reporting in selected ministries in Ekiti State. The findings show that AI adoption is still at a low stage, with limited integration into core accounting activities such as budgeting, transaction processing, and financial reporting. The study also shows that AI has not yet significantly improved the accuracy of financial reporting, as its effect on error reduction, compliance, and data validation remains weak. However, AI has made more noticeable contributions to the timeliness, transparency, and reliability of financial reports, particularly in improving the speed of reporting, traceability of transactions, and clarity of financial information. Although several challenges such as infrastructure limitations, funding constraints, technical skill gaps, and regulatory issues were identified, these factors were not found to be strong determinants of AI adoption in the ministries studied.

The academic contribution of this study lies in its empirical evidence on the differentiated impact of AI in public sector accounting. It shows that AI does not affect all dimensions of financial reporting equally, as its influence is stronger on operational efficiency (timeliness and transparency) than on technical accuracy. This adds to existing literature by highlighting the uneven nature of digital transformation in developing public sector environments, where technological adoption often improves processes before it improves precision.

In terms of policy relevance, the study provides useful insights for government and public sector decision-makers. It suggests that investment in AI should not only focus on infrastructure but also on strengthening system integration and capacity development to ensure that AI moves beyond administrative support functions into core accounting processes. Policies aimed at improving technical skills, enhancing digital infrastructure, and supporting consistent implementation frameworks would help improve the effectiveness of AI in financial reporting.

The practical implication of the study is that ministries can already benefit from AI in improving reporting speed, transparency, and information accessibility, even at the early stage of adoption. However, to achieve full benefits such as improved accuracy and error reduction, there is a need for deeper integration of AI tools into daily accounting operations. Strengthening staff capacity and ensuring stable technological systems will be critical for achieving this.

Overall, the study concludes that AI is a promising tool for improving public sector financial management, but its full potential in Ekiti State ministries is yet to be realized due to its early stage of implementation.

Recommendations

Based on the findings, the study recommends the following:

1. Ministries should invest in AI-compatible accounting infrastructure that integrates smoothly with existing financial systems to support effective implementation.
2. Continuous, practical training programs should be provided for accounting staff to improve their technical competence and effective use of AI tools.
3. Government should allocate dedicated and sufficient funding for AI adoption,

covering procurement, maintenance, upgrades, and technical support.
4. Leadership in ministries should promote positive attitudes toward AI through sensitization, awareness programs, and change management strategies to reduce resistance.
5. Clear policies and regulatory frameworks should be developed to guide AI use in accounting, particularly in areas of data security, privacy, and compliance with public sector standards.
6. AI should be introduced gradually into accounting operations, starting with basic tasks before full integration into core financial reporting processes.

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DEPOSIT MONEY BANKS IN NIGERIA

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Abstract
This study examined the effect of tax incentives on the financial performance of listed deposit money banks in Nigeria, with a focus on effective tax rate reduction and investment tax allowance utilization as the key proxies. The dependent variable, financial performance, was measured using return on equity. The study adopted a quantitative research design, employing secondary data from the annual financial statements of 13 listed banks over the period 2015–2024. Jaiz Bank Plc was filtered due unavailability of information for 2015 and 2016. Stata17 served as the tool of data analysis. Panel data regression analysis using the Panel- Corrected Standard Errors (PCSE) technique was conducted to estimate the impact of the independent variables on ROE, with diagnostic tests for multicollinearity and heteroskedasticity ensuring the robustness of the results. Regression results indicated that both effective tax rate reduction ($\beta = 0.421$, $p = 0.000$) and investment tax allowance utilization ($\beta = 0.318$, $p = 0.010$) positively and significantly influenced return on equity, confirming the a priori expectation that tax incentives enhance shareholder returns. The findings are supported by resource-based view theory, which highlighted the role of tax incentives as strategic resources that improve managerial efficiency and competitive advantage. The study concludes that effective utilization of tax incentives is critical for enhancing bank profitability. Accordingly, it recommends that bank management actively leverage available tax incentives, while regulators and policy makers provide clear guidelines and expand investment-linked tax schemes to promote financial sector growth.

Keywords: tax incentives, effective tax rate, investment tax allowance, deposit money banks, Nigeria.

1. Introduction

Tax incentives are a central fiscal tool used by governments to stimulate investment, encourage sectoral development, and influence corporate behaviour (Bird & Zolt, 2019). In Nigeria, the tax framework provides a range of incentives (including capital allowances, investment tax credits, tax holidays for priority sectors, and special allowances introduced or amended by the Finance Acts) that are intended to lower the effective tax burden for qualifying firms and spur productive investment (Federal Inland Revenue Service [FIRS], 2021; PwC, 2025). For listed corporations, transparent and measurable use of these incentives affects after-tax profits, retained earnings and the capacity for reinvestment; however, the scale and distribution of such benefits vary considerably across sectors and firms depending on disclosure practices and the specific design of incentive instruments. A practical problem that has emerged is that despite accessing various tax incentives, many listed firms particularly banks show inconsistent patterns in profitability and reinvestment capacity, raising concerns that the incentives may not be translating into improved financial performance as intended. For example, Union Bank of Nigeria Plc one of the long-standing listed banks was delisted from the Nigerian Exchange in 2023 following prolonged financial underperformance and ownership restructuring, highlighting how weak financial outcomes can threaten the continuity of listed Deposit Money Banks. Similarly, Heritage Bank Plc experienced severe financial distress leading to the revocation of its operating licence in 2024, underscoring wider sectoral vulnerabilities linked to unstable financial performance.

The banking sector is particularly sensitive to tax policy because banks' profitability, capital adequacy and liquidity positions depend on both interest-based revenues and the tax treatment of financial instruments, fees and investment outlays (Sallau, 2025). Moreover, recent policy developments (including changes in finance legislation and new tax measures affecting interest income and withholding arrangements) have altered the fiscal environment in which Deposit Money Banks (DMBs) operate, with direct implications for effective tax burdens and for the relative attractiveness of different tax planning strategies (Reuters, 2025; Pedabo, 2025). Because banks often have large balance sheets and complex portfolios, even modest changes in effective tax rates or in the availability of investment allowances can produce material effects on accounting performance metrics ROE.

Empirical evidence from Nigeria suggested an active and growing literature on tax planning, effective tax rates and firm performance, including recent studies specifically examining banks and listed financial firms (Nworie 2025; Bwala, 2024). Yet, many of these studies either use a single proxy for tax advantage (commonly the effective tax rate) or focus on non-financial sectors, leaving a gap for a focused, dual-proxy investigation that separates (a) reductions in effective tax rates that capture realized tax savings and (b) the utilization of investment-linked allowances and credits that capture policy-tied investment incentives. This two-proxy approach (ETRR and ITAU) allows researchers to distinguish between tax gains arising from generalized tax planning (lower ETR) and those arising from explicit, investment-linked fiscal instruments (allowances/credits), and to test how each channel relates to bank performance in the Nigerian context. This study therefore asks: To what extent does Effective Tax Rate Reduction (ETRR) affect the financial performance of listed DMBs in Nigeria? and How does Investment Tax Allowance Utilization (ITAU) influence bank profitability and efficiency? By focusing on listed DMBs and combining detailed accounting measures with disclosure-level indicators of allowance/credit utilization, the research aims to produce actionable evidence for bank managers (on tax strategy and disclosure) and for policymakers (on incentive design and fiscal transparency).

2. Literature review

2.1. Conceptual Review

Return on Equity (ROE) reflects the profitability earned on shareholders' equity, showing how effectively management uses owners' funds to generate profit (Pennacchi, 2021). This implies that ROE measures the efficiency with which a company converts shareholders' investments into net earnings, where a higher ROE indicates effective utilization of equity capital to maximize shareholders' wealth. Effective Tax Rate Reduction (ETRR) is the difference between the statutory corporate tax rate and a firm's actual effective tax rate, representing the extent to which tax incentives, deductions, allowances, and tax planning reduce the tax burden on the firm (Moniruzzaman et al., 2024). This means that firms can legitimately lower their tax liabilities through available fiscal incentives and tax management strategies, thereby increasing after-tax income and improving cash flows. Investment Tax Allowance Utilization (ITAU) refers to the extent to which a firm claims and benefits from government-approved investment-linked tax incentives, such as capital allowances, investment credits, or tax deductions, used to reduce taxable income or enhance after-tax returns (Oktavianti et al., 2023). This indicates that firms strategically utilize investment-related tax incentives to minimize tax expenses, encourage capital investment, and improve profitability and operational performance.

Conceptual Framework

The conceptual framework developed for the study is in figure 1 as follows:

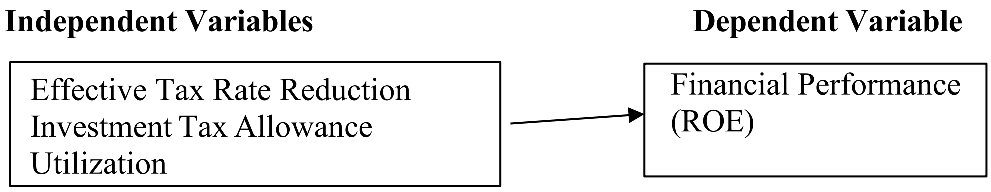

Figure 1. Conceptual Framework.

2.2. Empirical Review

Moniruzzaman et al. (2024) studied audit quality and tax avoidance in the banking sector of Bangladesh from 2018–2022, analyzing 36 listed banks for a total of 170 firm-year observations. Using secondary data from audited financial statements, panel econometric methods tested the effect of audit quality on effective tax rate. Findings indicated that higher audit quality, measured via audit fees and key audit matter disclosures, significantly increased tax avoidance (lower effective tax rate), suggesting better-audited banks could report lower taxes.

Shubita et al. (2024) examined the effects of tax avoidance and capital expenditure on financial performance of Jordanian banks. Using financial statement data (recent period), regression analysis tested relationships between tax avoidance, capital expenditure, and ROA/ROE. Findings demonstrated that tax avoidance had a positive and significant effect on both ROA and ROE, while capital expenditure had no significant impact, and firm size did not moderate the relationship.

Felix and Mamidu (2021) conducted an empirical investigation into corporate tax planning and the financial performance of Nigerian development banks using data from 2012 to 2019. The study concentrated on the population of all Nigerian development banks, from which the authors selected only those banks whose financial statements were consistently available for the eight- year period, making the sample purposive in nature. Using panel regression techniques, the variables of effective tax rate, tax savings, capital intensity, and firm size were analyzed to determine their influence on return on equity. The analysis showed that the effective tax rate had a negative but statistically insignificant effect on ROE, while tax savings exhibited a positive yet insignificant influence, implying that the tax-planning tactics employed by these banks did not result in substantial improvements in financial performance during the period.

In another relevant study, Omodero and Ogbonnaya (2018) assessed the influence of corporate tax on the profitability of deposit money banks in Nigeria over the period 2006 to 2016. The population consisted of twenty-one banks that operated after the 2005 banking consolidation reforms, and from this population, the researchers selected a sample of twelve banks through judgmental sampling to ensure data completeness and availability. Adopting a panel research design, multiple regression analysis and t-tests were conducted using SPSS to determine the effect of company income tax on profit after tax. The study found mixed results: for banks such as Access Bank, Guaranty Trust Bank, and Diamond Bank, company income tax had a positive and significant effect on profitability, whereas for most others, the effect was either negative or insignificant, suggesting wide performance variations in how banks absorb or respond to corporate tax obligations.

Resource-Based View theory was developed by Barney (1991), the theory asserts that firms gain competitive advantage by acquiring and efficiently using valuable, rare, inimitable, and non- substitutable (VRIN) resources. Tax incentives, including ETRR and ITAU, are intangible financial resources that can enhance a bank's operational efficiency and strategic capability if effectively exploited. For Nigerian DMBs, the ability to utilize these incentives better than competitors can translate into higher profitability and superior performance outcomes, measured by ROE. RBV thus provides a theoretical justification for viewing tax incentives not merely as cost reductions but as strategic resources capable of generating sustainable financial performance advantages.

3. Methodology

In choosing a particular design for a research work, it is usually based on the nature and the problem of the research and how best the research objectives can be achieved. The study adopts the ex-post facto research design which is based on a scientific examination of dependent and independent variables. The design for the study is considered appropriate, in that, it is better in determining the significant effect of board characteristics on earnings management in our study which may permit prediction. The study adopted quantitative and deductive approach as the data for the variables are in figures. The study also align itself with positivist paradigm because it depends on quantifiable observations that lead to statistical analysis through quantitative data collection and interpretation to establish what is without any form of human interaction within the study. The study population is fourteen (14) deposit money banks on the Nigerian Exchange Group as at 31st December, 2024. The number of listed deposit money banks as at 2024 in Nigeria as shown in Nigerian Exchange Group (NGX) Fact book are fourteen (14). The justification for choosing deposit money banks is premised on the fact that, it contributes on the Nation's economic growth. Thirteen (13) deposit money banks in Nigeria were used, based on filtering as information were not available for Jaiz Bank Plc from 2015 to 2016.

Variable Measurements

Table 1
Variable Measurement and Source

Variable	Type	Measurement	Source
Return on Equity (ROE)	Dependent	ROE = Net Income ÷ Shareholder' Equity x 100	Shubita et al. (2024);
Effective Tax Rate Reduction (ETRR)	Independent	ETRR = Statutory Tax Rate – Effective Tax Rate (ETR), expressed as a percentage	Garcia-Bernardo et al. (2023); Felix and Mamidu (2021)
Investment Tax Allowance Utilization (ITAU)	Independent	ITAU = Value of Investment Tax Allowance Claimed ÷ Total Taxable Income x 100	Moniruzzaman et al. (2024); Pennacchi (2021)

Source: The Researcher, 2025.

Thus, the model of this study is specified as:

$FP_{it}=\beta0+\beta1ETRR_{it}+\beta2ITAU_{it}+\epsilon_{it}$

4. Results and Discussions

Descriptive Statistics
The summary statistics provide an overview of the key variables used in the study, including Effective Tax Rate Reduction (ETRR), Investment Tax Allowance Utilization (ITAU), and Return on Equity (ROE). The results are presented below:

Table 2
Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROE	130	0.182	0.065	0.045	0.512
ETRR	130	0.135	0.042	0.050	0.245
ITAU	130	0.092	0.031	0.020	0.165

Source: Compiled by the Researcher, 2025.

The mean value of ROE (0.182) indicates that, on average, listed deposit money banks in Nigeria generated approximately 18.2% returns on shareholders' equity over the study period. The standard deviation (0.065) shows moderate variability in profitability across banks, while the minimum and maximum values (0.045 and 0.512) reflect a wide range of performance levels. The mean ETRR of 0.135 (13.5%) indicated that banks were able to reduce their statutory tax rates by an average of 13.5% through available incentives, with modest variation across banks. For ITAU, the mean utilization rate of 0.092 (9.2%) suggested that banks claimed nearly 9% of allowable investment tax incentives on average, indicating moderate engagement with government tax incentives.

Correlation Matrix

Table 3.
Correlation Matrix

Variable	ROE	ETRR	ITAU
ROA	1.000		
ETRR	0.412	1.000	
ITAU	0.356	0.228	1.000

Source: Compiled by the Researcher, 2025.

The correlation matrix showed a positive and moderate relationship between ETRR and ROE (0.412), implying that greater reductions in effective tax rates are associated with higher bank profitability. ITAU also exhibits a positive correlation with ROE (0.356), indicating that higher utilization of investment tax allowances is linked with improved financial performance. The correlation between ETRR and ITAU is 0.228, reflecting a low-to-moderate association, suggesting that the variables capture distinct aspects of tax incentives without multicollinearity concerns.

Diagnostic Test
Table 4
Variance Inflation Factor (VIF) Test

Variable	VIF	1/VIF
ETRR	1.16	0.862
ITAU	1.13	0.885
Mean VIF	1.15	

Source: Compiled by the Researcher, 2025.

All explanatory variables have VIF values well below the conventional threshold of 10, confirming no evidence of multicollinearity (Hair et al., 2019). Specifically, ETRR recorded a VIF of 1.16 and ITAU had a VIF of 1.13, both of which are far below the critical value that signals high multicollinearity. The mean VIF of 1.15 further indicates low correlation among the independent variables, implying that less than 15% of the variance in each variable is explained by the others (1/VIF = 0.862 for ETRR and 0.885 for ITAU). Statistically, VIF values between 1 and 5 represent low to moderate correlation that does not pose a threat to the validity of regression estimates (O'Brien, 2007). Therefore, the independent variables are sufficiently independent, ensuring reliable estimation of regression coefficients and that each variable contributes distinct explanatory power to the model.

Table 5
Modified Wald Test for Groupwise Heteroskedasticity

Test	Statistic	p-value
$\chi^2(23)$	51,475.32	0.0000

Source: Compiled by the Researcher, 2025.

The chi-square statistic (χ^2 = 51,475.32) with a p-value of 0.0000 indicated that the null hypothesis of homoscedasticity is rejected at the 1% level of significance. This result confirms the presence of groupwise heteroskedasticity among the residuals of the panel model. In other words, the variance of the error terms differs significantly across the sampled banks, implying that the residuals are not evenly distributed. This finding suggested that while the panel models appropriately controls for unobserved heterogeneity across banks, the assumption of equal variance of residuals is violated. Such violation can lead to inefficient coefficient estimates and biased standard errors, thereby affecting the reliability of hypothesis testing (Baltagi, 2021). This finding suggests that the assumption of equal variance is violated, which could bias standard error estimates if uncorrected. Consequently, to obtain reliable and efficient coefficient estimates, the study employed the Panel-Corrected Standard Errors (PCSE) estimation technique, which adjusts for both heteroskedasticity and potential cross-sectional dependence among firms.

Regression Results
Table 6
Panel Corrected Standard Errors (PCSE) Regression Result

Variable	Coefficient	Z-Value	P-Value
ETRR	0.421	3.92	0.000
ITAU	0.318	2.57	0.010
R-squared	0.472		
Wald Chi²	89.54		0.000

Source: Extracted from STATA 17 Output by the Researcher, 2025.

The Wald Chi-square statistic of 89.54 with a p-value of 0.000 indicated that the regression model is statistically significant at the 1% level. This confirms that the null hypothesis (that the coefficients of ETRR and ITAU are jointly equal to zero) can be rejected, providing strong evidence that these tax incentive variables jointly influence the financial performance (ROE) of listed deposit money banks. The R-squared value of 0.472 implies that approximately 47.2% of the variation in ROE is explained by variations in ETRR and ITAU, while the remaining 52.8% is attributable to other factors not captured in the model, such as macroeconomic conditions or bank-specific operational variables. Statistically, an R-squared value near 0.5 in panel data research indicates a moderate explanatory power, meaning the model captures a substantial proportion of the variation in the dependent variable while leaving room for unobserved influences (Gujarati & Porter, 2021).

The coefficient of ETRR ($\beta = 0.421$, $p = 0.000$) is positive and statistically significant at the 1% level, indicating that banks that effectively reduce their statutory tax rates experience higher ROE. Statistically, the p-value of 0.000 is far below the 0.01 threshold, confirming that the effect of ETRR on financial performance is highly unlikely to be due to random chance. The positive coefficient suggests that a one-unit increase in ETRR is associated with a 0.421-unit increase in ROE, holding other factors constant. The a priori expectation of the researcher was that ETRR would positively influence ROE, as tax reductions increase retained earnings and provide additional resources for strategic deployment, enhancing shareholder returns. This result aligns with several empirical studies, including Moniruzzaman et al. (2024), who found that effective tax rate reduction improves profitability in Bangladesh banks; Shubita et al. (2024), which reported positive impacts of tax avoidance on Jordanian banks' ROE; and Ayoola-Akinjobi (2024), who observed a positive relationship between tax incentives and profitability in Nigerian financial institutions. Conversely, other studies suggest an opposite or negligible effect: Felix & Mamidu (2021) found that effective tax rate reductions had an insignificant effect on ROE among Nigerian development banks; Omodero & Ogbonnaya (2018) reported mixed effects of corporate tax on profitability across

Nigerian deposit money banks; and the Polish study on bank-specific taxes (2023) showed that tax levies can sometimes reduce bank performance due to constrained lending and higher operational costs. Thus, the first formulated null hypothesis is rejected.

The coefficient of ITAU ($\beta = 0.318$, $p = 0.010$) is positive and statistically significant at the 5% level, indicating that banks that effectively utilize investment tax allowances experience higher ROE. Statistically, the p-value of 0.010 is below the 0.05 threshold, confirming that the effect of ITAU on financial performance is unlikely to be due to chance. The positive coefficient implies that a one-unit increase in ITAU is associated with a 0.318-unit increase in ROE, holding other factors constant. The a priori expectation of the researcher was that ITAU would positively influence ROE, since investment tax allowances reduce taxable income, freeing resources that can be deployed to enhance profitability. Supporting this expectation, Moniruzzaman et al. (2024) reported that investment-related tax incentives improve profitability in the Bangladeshi banking sector; Shubita et al. (2024) found positive effects of capital and investment tax allowances on Jordanian banks' ROE; and Ayoola-Akinjobi (2024) observed that Nigerian financial institutions benefit from investment tax allowances in increasing shareholder returns. Conversely, several studies found neutral or negative effects: Felix & Mamidu (2021) indicated that investment tax incentives had an insignificant effect on ROE of Nigerian development banks; Omodero & Ogbonnaya (2018) reported mixed results where some banks did not significantly benefit from investment tax reductions; and the Polish banking study (Karpowicz et al. 2023) revealed that tax incentives were insufficient to offset performance losses caused by regulatory constraints. Thus, the second formulated null hypothesis is rejected.

5. Conclusion and Recommendations

This study concludes that tax incentives significantly influence the financial performance of listed deposit money banks in Nigeria. Specifically, reductions in the effective tax rate (ETRR) and the utilization of investment tax allowances (ITAU) both have positive and statistically significant effects on Return on Equity (ROE). Banks that strategically leverage this tax incentives are able to increase retained earnings, improve operational efficiency, and enhance shareholder returns. The findings support theoretical expectations from Agency Theory, Trade- off Theory, and Resource-Based View, highlighting that tax incentives function as valuable financial resources that, when effectively managed, strengthen competitive advantage and profitability. While contextual factors may moderate the relationship, the evidence indicates that prudent tax planning is a critical determinant of financial performance in the Nigerian banking sector.

Based on the findings, the study recommends that management of deposit money banks should proactively identify and fully utilize available tax incentives, including effective tax rate reductions and investment tax allowances, to maximize profitability and shareholder value. Regulators such as the Central Bank of Nigeria and tax authorities should ensure clear, consistent guidelines and promote awareness of available tax incentives to enhance uptake and compliance among banks. Policy makers are encouraged to expand or optimize investment-linked tax incentive schemes to stimulate productive investments and strengthen the financial sector. Additionally, future research should examine how factors such as governance quality, bank size, and liquidity moderate the impact of tax incentives on financial performance, providing a more comprehensive understanding of the determinants of profitability in Nigerian banks.

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Abstract
Financial fraud has remained a persistent challenge within financial institutions globally, particularly in emerging economies where weak control systems, technological vulnerabilities, and inadequate regulatory enforcement continue to expose firms to fraudulent activities. Thus, this study examined the effect of forensic auditing on financial fraud prevention among listed financial firms in Nigeria. The study adopted a quantitative cross-sectional survey research design using primary data collected through structured questionnaires administered to 302 respondents drawn from listed financial firms on the Nigerian Exchange Group. Data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM). The findings revealed that forensic auditing practices significantly improve financial fraud prevention ($\beta = 0.221$, $p = 0.002$), while forensic audit expertise and professional competence also exert a positive and significant effect ($\beta = 0.184$, $p = 0.007$). Furthermore, forensic audit tools and techniques ($\beta = 0.256$, $p = 0.001$), internal control systems ($\beta = 0.278$, $p = 0.000$), and regulatory compliance ($\beta = 0.205$, $p = 0.002$) all significantly enhance financial fraud prevention among listed financial firms in Nigeria. The study concludes that effective forensic auditing mechanisms are critical in reducing fraud opportunities and strengthening transparency and accountability within financial institutions. The study recommends that the management of financial firms should strengthen forensic auditing practices, invest in professional training and digital forensic technologies, improve internal control systems, and ensure strict regulatory compliance to enhance fraud prevention effectiveness.

Keywords: Forensic Auditing, Financial Fraud Prevention, Internal Control Systems, Regulatory Compliance

1. **Introduction**

Financial fraud prevention is a global priority in the era of a more complex and digitised financial system. In both developed and emerging markets, frauds, including cyber frauds, financial statement manipulation, and electronic payment frauds, have been growing in size and complexity, causing financial losses and eroding confidence of investors. For instance, recent global evidence indicates that financial institutions remain vulnerable to fraud, with billions of dollars being lost across the various sectors, including the banking and financial services (Oluyide, 2025). The rise of this threat has made the need to move beyond the traditional audit detection of fraud and lead to forensic auditing, which combines accounting, investigative and analytical powers to detect and prevent fraud. In today's world, forensic auditing is considered as a crucial governance tool that plays a vital role in detecting complex financial crimes and assisting the legal enforcement process, particularly in areas where traditional audit methods have proven to be inadequate (Okoro, et al., 2026).

In the African context, the financial fraud challenge is further exacerbated by institutional deficiencies, regulatory gaps, and the rapid growth of digital financial services. The extent of the issue is evidenced by 1,574 arrests of suspected fraudsters via different operations (INTERPOL's Operation Serengeti, Operation Sentinel & Operation Jackal III) and $196 million financial losses resulting from cybercrime and financial misconduct recorded in recent enforcement actions in African countries (Banchereau, 2024; Interpol, 2025). The developments have led to an increased need for more comprehensive forensic auditing frameworks throughout the continent. Studies have highlighted several critical aspects of effective forensic auditing in Africa, such as the implementation of structured approaches to forensic auditing, the presence of trained personnel equipped with investigative skills, and the application of advanced audit techniques like data analytics and digital forensics (Jinadu, et al., 2026). Moreover, robust internal control systems and compliance with regulatory standards play a pivotal role in achieving successful fraud prevention results from forensic auditing. These together serve as a multifaceted strategy to fight financial fraud in African financial systems.

Nigeria's financial sector has suffered from a heavy burden of fraud, exacerbated by significant volumes of transactions and technological advancement as reported by the Nigeria Inter-Bank Settlement System (2024) that fraud losses in the banking industry rose dramatically in just one year, from ₦17.67 billion in 2023 to ₦52.26 billion in 2024. Also, in its 2024 Financial Stability Report, the Central Bank of Nigeria noted a 45% increase in financial fraud incidents, with digital channels and virtual transaction platforms accounting for almost 70% of the resulting losses (Esonwune & Ogiri, 2024; Melum-Nwogbo, 2025; Akujobi, et al., 2026). This situation has contributed to the increasing relevance of forensic auditing in the Nigerian financial sector, where it is used to enhance the financial sector's fraud detection and prevention systems. In particular, forensic auditing techniques like fraud investigation and risk assessment are used to detect irregularities, and forensic audit skills and competence improve the accuracy and credibility of investigations. In addition, forensic audit tools and techniques such as data mining and computer-assisted audit tools increase the effectiveness and efficiency of fraud detection. Internal control systems also serve a complementary function as they offer a framework for monitoring and accountability, and regulatory compliance makes sure that firms stick to market- approved and economic and auditing standards. Empirical evidence from Nigeria confirms that the integration of these forensic auditing components significantly improves fraud detection and prevention outcomes, although gaps remain in their consistent implementation across firms (Adam, et al., 2024).

Statement of the problem

Financial fraud has long been a problem in financial institutions and is a major concern in emerging economies like Nigeria. Despite progress in the financial systems and the regulatory

environment, fraud persists, erodes stakeholder confidence, has an impact on the credibility of financial institutions and financial reporting. Adam, et al., (2024) asserted that financial fraud in financial institutions in Nigeria is fuelled by inadequate monitoring system, weak investigative processes and lack of adequate utilisation of specialised auditing techniques. Although forensic auditing has been widely promoted as a solution to fraud detection and prevention, its practical implementation remains inconsistent. In particular, the effectiveness of forensic auditing in the fight against financial fraud is hindered by its failures to effectively manage fraud risk, to gather evidence and to have a sound investigative framework. Chukwu, et al., (2025) indicate that although forensic audits can be a powerful tool for fraud prevention, they can be limited by weak integration with audits and lack of ongoing monitoring processes.

Furthermore, the effectiveness of forensic auditing is heavily dependent on the availability of skilled professionals and the application of appropriate technological tools. In Nigeria, a major challenge lies in the limited forensic audit expertise and professional competence, as many financial institutions lack adequately trained forensic accountants capable of handling complex fraud cases. This deficiency is compounded by the underutilisation of modern forensic audit tools and techniques, such as data analytics, digital forensics, and computer-assisted auditing systems, which are critical for detecting sophisticated financial crimes. Kabara & Aliyu (2025) highlight that although technological tools like big data analytics can significantly enhance fraud detection, their adoption in Nigerian financial institutions remains slow due to high costs and inadequate technical capacity. In addition, weak internal control systems continue to undermine forensic auditing effectiveness, as poor segregation of duties, ineffective monitoring, and weak accountability structures create opportunities for fraud to thrive even in the presence of auditing mechanisms.

Another major concern is the issue of regulatory compliance and forensic auditing procedures that are not uniform in the Nigerian financial institutions. Although regulatory authorities have set standards to ensure transparency and accountability, there remain challenges in enforcement and compliance, and this makes forensic auditing less effective in the fight against fraud. It is indicated that while forensic auditing mechanisms may exist, they may be influenced by institutional aspects like compliance culture, whistleblowing protocols, and governance frameworks (Sabo & Almustapha, 2025). Financial fraud remains prevalent even with the implementation of forensic auditing practices, indicating a lack of understanding of the interactions among these elements (practices, expertise, tools, internal controls and regulatory compliance) and their impact on financial fraud prevention results. This gap underscores the need for a comprehensive empirical investigation into the effectiveness of forensic auditing in preventing financial fraud among listed financial firms in Nigeria. To achieve this, the following hypotheses are formulated:

$\mathrm{H0}_1$: Forensic audit practices have no significant effect of financial fraud prevention among listed financial firms in Nigeria;
$\mathrm{H0}_2$: Forensic audit expertise and professional competence do not significantly affect financial fraud prevention among listed financial firms in Nigeria;
$\mathrm{H0}_3$: Forensic audit tools and techniques have no significant influence of financial fraud prevention among listed financial firms in Nigeria;

$\mathrm{H0}_4$: Internal control systems and forensic auditing effectiveness have no significant effect of financial fraud prevention among listed financial firms in Nigeria;
$\mathrm{H0}_5$: Regulatory compliance and forensic audit implementation have no significant

impact of financial fraud prevention among listed financial firms in Nigeria;

2. Literature Review

2.1 Conceptual framework

Financial Fraud Prevention

Financial fraud prevention refers to the systematic processes, controls, and investigative mechanisms put in place to detect, deter, and mitigate fraudulent activities within organisations, particularly in high-risk sectors such as financial services. It has been defined as the application of structured control systems and monitoring procedures to reduce the occurrence and impact of fraud (Abdulrahman, 2019). Similarly, it is viewed as the use of specialised techniques, including forensic accounting and data analysis, to identify fraudulent transactions and ensure financial integrity (Ajagun, et al., 2025). Another perspective defines financial fraud prevention as a continuous risk management process involving internal controls, regulatory compliance, and investigative audits aimed at safeguarding assets and maintaining reporting credibility (Adam, et al., 2024). In practice, financial fraud manifests in several forms within Nigerian financial firms, including embezzlement, loan fraud, insider abuse, money laundering, and financial statement manipulation (Oke & Ofor, 2026). With respect to measurement, financial fraud prevention measures include the implementation of strong internal control systems, adoption of forensic auditing practices, use of advanced analytical tools such as data mining, and enforcement of regulatory compliance frameworks (Alhassan, 2020; Okoro, et al., 2026).

Forensic Auditing Practices

Forensic auditing practices refer to the systematic application of investigative, analytical, and auditing procedures aimed at detecting, preventing, and documenting financial fraud within organisations, particularly in high-risk sectors such as financial institutions. It has been defined as a structured process involving the collection, verification, analysis, and reporting of financial evidence for fraud detection and legal purposes (Oyerogba, 2021). Similarly, forensic auditing practices are viewed as the application of specialised accounting techniques such as fraud investigation, fraud examination, and litigation support to uncover financial irregularities and enhance accountability (Eniola & Popoola, 2024). Another perspective defines it as the integration of accounting, auditing, and investigative skills to identify fraudulent transactions and support fraud prevention mechanisms within organisations (Ugwu & Ofor, 2026). In practice, forensic auditing encompasses several types of activities, including fraud risk assessment, fraud investigation, data analysis, continuous auditing, and litigation support, all of which are essential in combating complex financial crimes in modern financial systems (Uniamikogbo, et al., 2019; Idagu, 2025). Measurement of forensic auditing practices is typically based on indicators such as the frequency of forensic audits, extent of fraud investigation activities, use of analytical procedures, and integration of forensic techniques into internal audit functions (Ajagun, et al., 2025).

Forensic Audit Expertise and Professional Competence

Forensic audit expertise and professional competence refer to the specialised knowledge, skills, experience, and professional judgment required to effectively detect, investigate, and prevent financial fraud within organisations, particularly in complex financial environments such as banking and financial services. It has been defined as the ability of forensic accountants to apply accounting, auditing, and investigative techniques in uncovering fraud and supporting litigation processes (Aigienohuwa, et al., 2017). Similarly, it is viewed as the possession of relevant certifications, training, and practical experience that enhance the effectiveness of forensic auditing in fraud detection and prevention (Ibrahim, 2020). Another perspective describes forensic audit competence as a combination of analytical, investigative, and legal skills required to interpret financial evidence and provide expert testimony in fraud-related cases (Ishaku, et al., 2019). Forensic audit expertise comprises several types of competencies, including investigative skills, analytical reasoning, litigation support, and digital forensic capabilities, all of which are critical in addressing increasingly sophisticated financial crimes (Ojukwu, et al., 2020; Almustapha, et al., 2025). Measurement of forensic audit expertise is typically based on indicators such as professional certifications (e.g., forensic accounting qualifications), years of experience, level of training, and technical proficiency in using forensic tools and techniques (Ibrahim, 2020; Ajagun, et al., 2025).

Forensic Audit Tools and Techniques

Forensic audit tools and techniques refer to the specialised technological, analytical, and investigative methods used to identify, analyse, and document financial irregularities for fraud detection and prevention (Okorie, et al., 2025). A forensic audit itself has been defined as a detailed examination of financial records conducted to obtain evidence suitable for legal proceedings (Tardi, 2026), while forensic approaches more broadly involve the application of scientific and analytical methods to investigate financial crimes and irregularities. Another perspective emphasises that forensic techniques rely on systematic evidence collection, preservation, and analysis to uncover fraudulent activities and support decision-making in legal contexts (Ugwu & Ofor, 2026). Forensic audit tools and techniques include digital forensics software such as data recovery and analysis systems, data mining tools, continuous auditing platforms, and computer-assisted audit techniques, which enable auditors to detect hidden patterns, recover deleted financial data, and trace fraudulent transactions (Almustapha, et al., 2025). Advanced tools such as digital forensic environments and specialised investigative platforms further enhance fraud detection by integrating evidence acquisition, analysis, and reporting processes, while structured forensic processes typically involve stages such as data acquisition, analysis, and reporting to ensure reliability and legal admissibility of evidence (Akinola, 2024).

Internal Control Systems and Forensic Auditing Effectiveness

Internal control systems and forensic auditing effectiveness represent a critical framework for strengthening fraud prevention, particularly within financial institutions where transaction risks are high. Internal control systems have been defined as the set of policies, procedures, and processes established to safeguard assets, ensure accurate financial reporting, and promote compliance with regulations (Salawu, et al., 2023). Similarly, they are described as integrated mechanisms involving control environment, risk assessment, control activities, information systems, and monitoring processes designed to prevent and detect fraud (Solomon, et al., 2023). From a forensic perspective, internal control systems are viewed as complementary structures that enhance the effectiveness of forensic auditing by providing reliable data, audit trails, and control checkpoints for fraud investigation (Vutumu, et al., 2025). Internal control systems comprise several types, including preventive controls (e.g., segregation of duties), detective controls (e.g., audits and reconciliations), and corrective controls (e.g., disciplinary and recovery mechanisms), all of which support forensic auditing processes in identifying and mitigating fraud risks (Akinola, 2024; Vutumu, et al., 2024). Measurement of internal control effectiveness is typically based on indicators such as the strength of the control environment, effectiveness of risk assessment procedures, quality of monitoring activities, and efficiency of information and communication systems (Oduro & Cromwell, 2018; Azeez, et al., 2023).

Regulatory Compliance and Forensic Audit Implementation

Regulatory compliance and forensic audit implementation represent a critical dimension of fraud prevention, particularly in regulated sectors such as financial services where adherence to rules and oversight mechanisms is essential. Regulatory compliance has been defined as the extent to which organisations adhere to laws, standards, and guidelines established by regulatory authorities to ensure transparency and accountability in financial reporting and operations (Onyemachi, et al., 2024). Similarly, it is viewed as a structured system of policies and procedures that ensures organisations operate within legal and ethical boundaries, thereby reducing exposure to fraud and financial misconduct (Uniamikogbo, & Adeusi, 2019; Okorie, et al., 2025). Regulatory compliance in financial institutions takes several forms, including adherence to banking regulations, anti-money laundering (AML) requirements, internal audit standards, and reporting frameworks, all of which support effective forensic audit implementation and fraud control (Onyemachi, et al., 2024; Adesina, et al., 2020). Measurement of regulatory compliance and forensic audit implementation is typically based on indicators such as compliance audit scores, frequency of regulatory inspections, adherence to reporting standards, and the extent to which forensic audit procedures are integrated into organisational processes (Adam, et al., 2024; Onyemachi, et al., 2024).

2.2. Theoretical Review

Fraud Triangle Theory

The Fraud Triangle Theory (FTT), first introduced by Cressey (1953), posits that fraudulent behaviour arises when three elements: pressure, opportunity, and rationalization coexist within an individual or organization. This framework assumes that individuals commit fraud when subjected to non-shareable financial pressure, perceive an opportunity to exploit internal control weaknesses, and rationalize their actions as justifiable or harmless. In the context of forensic auditing and financial fraud prevention, FTT theoretically predicts that robust internal controls and proactive forensic audits reduce the “opportunity” element, deterring fraudulent acts by increasing detection probability and reducing concealment chances (Vale & Branco 2019). Forensic auditors, by systematically evaluating anomalies and irregularities, act as institutional mechanisms that address the motivational and rationalization dynamics of FTT, thereby strengthening corporate governance and integrity systems. Nonetheless, the theory faces limitations: it oversimplifies the complexity of fraud by focusing primarily on individual-level factors and neglecting systemic issues such as collusion, corporate culture, and technological influences in digital environments (Free, 2015; Homer, 2020). Recent studies expand FTT into Fraud Diamond and Fraud Pentagon models that incorporate capability and arrogance/ego as additional constructs to capture evolving fraud mechanisms (Firmansyah, et al., 2024). Despite criticisms, FTT remains theoretically relevant to forensic auditing because it provides a behavioural foundation for identifying risk factors and designing internal control frameworks that mitigate fraud risk (Waromi, et al., 2025; Almalita & Tjahjono, 2026). Contemporary literature underscores its adaptability, particularly when integrated with data analytics and ESG- based ethical governance models, reflecting its enduring applicability in modern forensic audit practices (Popoola, et al., 2015; Vale & Branco 2019).

Fraud Diamond Theory

Fraud Diamond Theory developed by Wolfe and Hermanson (2004), which extends the traditional fraud triangle by introducing capability as an additional element that enables financial fraud to occur. The theory posits that financial fraud is most likely to emerge when four conditions coexist, namely pressure, opportunity, rationalisation, and capability (Wolfe & Hermanson, 2004). Within the Nigerian financial sector, increasing digital transactions, weak internal controls, executive influence, and governance deficiencies have created environments where fraudulent practices can thrive despite regulatory oversight (Akinyomi, 2012; Ogutu & Ngahu, 2016). The pressure dimension reflects financial and performance-related expectations imposed on management and employees, while opportunity arises from ineffective monitoring systems and control loopholes in financial institutions (Albrecht et al., 2015). Rationalisation enables perpetrators to justify unethical conduct, particularly in environments where accountability mechanisms are weak (Dorminey et al., 2012). The capability component is especially relevant to listed financial firms in Nigeria because sophisticated fraud schemes often require individuals with technical expertise, strategic authority, and the confidence to manipulate accounting systems without immediate detection (Vousinas, 2019). In this context, forensic auditing serves as a critical mechanism for reducing fraud opportunities, strengthening internal control systems, enhancing transparency, and improving the detection and prevention of fraudulent financial practices among listed financial firms in Nigeria (Singleton & Singleton, 2010; Efiong, 2012).

2.3. Empirical Review

Abdulrahman et al. (2022) investigated the impact of forensic accounting on fraud detection in the UAE banking sector. The main objective of the study was to examine whether forensic accounting techniques improve fraud detection and prevention in banks. The study adopted a quantitative survey research design and collected data from banking professionals using structured questionnaires. Multiple regression analysis was employed for data analysis. The findings revealed that forensic accounting practices, especially investigative auditing and litigation support, significantly improved fraud detection and fraud prevention in UAE banks. The study concluded that forensic accounting has become a critical fraud control mechanism in modern banking systems.

Mehta et al. (2022) analysed the impact of forensic accounting on fraud detection with artificial intelligence as a mediating factor in Indian financial institutions. The study adopted a quantitative design using survey data from auditors and banking professionals. Structural Equation Modelling was used for analysis. Findings revealed that AI-driven forensic tools significantly strengthen fraud detection and fraud prevention systems in banks. The study emphasized that technological competence and professional expertise are critical for effective forensic auditing.

Alshurafat et al. (2022) examined the strengths and weaknesses of forensic accounting and its implications for fraud prevention in Jordanian financial institutions. The study adopted a mixed- method research design involving questionnaires and interviews with auditors and financial experts. The findings revealed that forensic auditing practices and professional expertise significantly enhance fraud detection, while weak technological infrastructure limits forensic audit effectiveness. The study recommended greater adoption of digital forensic tools in developing financial systems.

Kaur et al. (2023) conducted a systematic review on forensic accounting and its contribution to fraud detection and prevention in developed financial systems. The study aimed to synthesize empirical evidence on the effectiveness of forensic accounting techniques in combating financial crimes. Using systematic literature review methodology, the authors reviewed peer-reviewed studies published between 2010 and 2022. The findings showed that forensic audit tools such as digital analytics, AI-driven systems, and continuous auditing significantly enhance fraud detection effectiveness in developed financial institutions. The study further revealed that regulatory compliance and technological competence improve forensic audit implementation.

Ogutu and Mwachiro (2023) investigated the role of forensic accounting in fraud prevention and detection in the Kenyan banking sector. The objective of the study was to assess the influence of forensic accounting techniques on fraud prevention among commercial banks. A survey research design was adopted, and data were collected from audit and compliance officers in Kenyan banks. Regression analysis was used for estimation. The findings showed that forensic audit expertise and digital forensic tools significantly reduced financial fraud incidents in banks. The study concluded that investment in forensic audit competence improves fraud prevention effectiveness.

Chen et al. (2025) carried out a systematic literature review on deep learning and financial fraud detection in developed economies. The objective was to evaluate the effectiveness of advanced forensic technologies in fraud prevention within financial institutions. The study reviewed 57 empirical studies published between 2019 and 2024 using systematic review procedures. The findings showed that machine learning models, data analytics, and AI-based forensic systems significantly improved fraud prevention capabilities in financial firms by enhancing predictive detection accuracy. The study concluded that technological forensic auditing tools are reshaping fraud prevention frameworks in developed countries.

Kabara and Aliyu (2025) investigated the impact of big data analytics in forensic auditing and fraud prevention in public financial institutions. The study employed a quantitative survey design and analysed responses from financial managers and auditors using Structural Equation Modeling (SEM). The findings showed that technological forensic auditing tools significantly improve fraud prevention and cybercrime detection. The study concluded that digital forensic systems are essential for modern fraud management in developing economies.

Batsyas and Yaduwanshi (2026) examined machine learning-based fraud detection systems for banking transactions in developed financial systems. The study aimed to develop a scalable fraud detection framework capable of improving fraud prevention in digital banking environments. The study employed CRISP-DM methodology and analysed synthetic banking transaction datasets using Random Forest, XGBoost, and Logistic Regression models. The findings indicated that AI-driven fraud detection systems significantly improve fraud prevention by identifying suspicious transactions in real time. The study emphasized that forensic audit technologies are essential for modern banking fraud prevention.

Okoro et al. (2026) assessed the effectiveness of forensic accounting in reducing financial fraud in Nigeria's banking sector. The study aimed to examine the influence of forensic accounting techniques, tools, and expertise on fraud prevention and detection. A quantitative survey design was employed using questionnaires administered to 81 respondents from Nigerian banks. Correlation and descriptive statistics were used for analysis. The findings revealed that forensic accounting practices, tools, and professional expertise significantly improve fraud prevention and fraud detection in Nigerian banks.

Sanusi (2026) examined digital forensic capabilities and fraud detection effectiveness in Nigeria's largest deposit money banks. The objective was to evaluate the contributions of network forensics, cloud forensics, mobile forensics, and IoT forensics to fraud detection effectiveness. The study adopted a cross-sectional survey design and analysed data using PLS- SEM and Artificial Neural Network techniques. Findings showed that digital forensic capabilities significantly improve fraud detection effectiveness in Nigerian banks.

Offia and Ajuonu (2026) examined the effect of forensic accounting on financial fraud control in selected firms in Nigeria. The study adopted a survey research design using questionnaires administered to accounting staff of selected firms. Descriptive statistics, correlation analysis, and t-tests were employed for analysis. Findings revealed that forensic accounting significantly influences fraud prevention and fraud detection in Nigerian firms. The study recommended strengthening forensic accounting practices and enhancing professional expertise to combat financial fraud.

The reviewed empirical studies collectively established that forensic auditing plays a significant role in fraud detection and prevention across banking and financial institutions in countries such as the UAE, India, Jordan and Kenya. The studies also revealed the growing importance of digital forensic tools, artificial intelligence, and professional expertise in strengthening fraud control systems. However, most of the studies concentrated broadly on fraud detection effectiveness, technological innovations, or general banking institutions, with limited focus on listed financial firms in Nigeria specifically. Furthermore, limited attention was given to how forensic auditing mechanisms can proactively reduce fraud occurrence rather than merely detect fraud after occurrence. Therefore, the gap in literature lies in the insufficient empirical evidence on the influence of forensic auditing on financial fraud prevention among listed financial firms in Nigeria.

3. Methodology

This study adopts a quantitative cross-sectional survey research design to effectively investigate how forensic auditing methods impact financial fraud prevention in Nigeria's listed financial firms. The study identified 1,240 respondents as the total population which spread across 42 listed financial firms on the Nigerian Exchange Group (NGX) as of December 2025 ranging from deposit money banks, insurance companies and other financial service institutions. These firms are focused because of their high exposure to fraud-related risks and their strategic importance to the Nigerian financial system. Taro Yamane (1967) sampling formula was employed to create a representative sample which results in 302 respondents. This study uses purposive sampling technique to choose firms that possess operational audit, compliance and risk management departments that are actively involved in fraud prevention activities. Within the selected firms, respondents are drawn from internal audit units, forensic audit departments, compliance units, and finance departments due to their direct involvement in fraud investigation and control processes.

The study collects primary data through a structured questionnaire which uses a five-point Likert scale that ranges from Strongly Agree to Strongly Disagree. The questionnaire was administered electronically to enhance response rate and accessibility among respondents while confidentiality of the respondent was assured which prompted voluntary participation. The instrument is structured to capture data on forensic auditing practices, forensic audit expertise and professional competence, forensic audit tools and techniques, internal control systems and forensic auditing effectiveness, regulatory compliance and forensic audit implementation, as well as financial fraud prevention. To analyse the data, the study employs Partial Least Squares Structural Equation Modelling (PLS-SEM), which is suitable for examining complex relationships among latent constructs and assessing both the measurement and structural models simultaneously. PLS- SEM is particularly appropriate because it accommodates non-normal data distributions, supports predictive analysis, and efficiently handles multiple independent variables. Prior to the structural analysis, descriptive statistics, reliability tests, convergent validity, and discriminant validity assessments are conducted to ensure the adequacy and robustness of the measurement model.

Model specification

To examine the impact of forensic auditing on the financial fraud prevention among listed financial firms in Nigeria, this study adapts the model of Emmanuel and Oreoluwa, (2022) who investigated Forensic Audit and Fraud Prevention in the Nigerian Deposit Money Banks. The original model was specified as:

$$FP_{it} = \alpha + \beta 0 X_{it} + \varepsilon_{it}$$

Where;

FP_{it} = forensic prevention X_{it} = Forensic Audit

α = Intercept of regression model

$\beta 0$ is the coefficient of the parameter estimate. ε is the error term.

However, to achieve the objectives of this study and provide a more comprehensive framework for examining financial fraud prevention among listed financial firms in Nigeria, the model is modified to incorporate all the research variables. Thus, the adapted model for this study is specified as:

$$FFP=\beta 0+\beta_1 FAP+\beta_2 FAEXP+\beta_3 FATTECH+\beta_4 ICSFAE+\beta_5 REGCOMP+\varepsilon$$

Where:
FFP = Financial Fraud Prevention
FAP = Forensic Auditing Practices
FAEXP = Forensic Audit Expertise and Professional Competence
FATTECH = Forensic Audit Tools and Techniques
ICSFAE = Internal Control Systems and Forensic Auditing Effectiveness
REGCOMP = Regulatory Compliance and Forensic Audit Implementation
ε = Error term

The model is estimated using Partial Least Squares Structural Equation Modeling (PLS-SEM), which is suitable for analysing complex latent variable relationships and predictive models.

4. Results and Discussion

Table 1: Descriptive Statistics

Variable	Mean	Std. Dev.	Minimum	Maximum
FFP (Financial Fraud Prevention)	3.84	0.71	2.10	4.95
FAP (Forensic Auditing Practices)	3.76	0.68	2.05	4.88
FAEXP (Forensic Audit Expertise)	3.69	0.73	2.00	4.90
FATTECH (Audit Tools & Techniques)	3.81	0.66	2.20	4.92
ICS (Internal Control System)	3.88	0.64	2.30	4.96
REGCOMP (Regulatory Compliance)	3.92	0.61	2.40	4.98

Source: Author's computation (2026)

The descriptive statistics presented in Table 1 provide an overview of the distribution and central tendencies of the variables used in the study. Financial Fraud Prevention (FFP), which is the dependent variable, records a mean score of 3.84 with a standard deviation of 0.71, indicating that respondents generally agree that fraud prevention mechanisms are moderately effective among listed financial firms in Nigeria. The relatively moderate dispersion suggests some variation in respondents' perceptions regarding the effectiveness of fraud prevention strategies across firms. Among the independent variables, Regulatory Compliance (REGCOMP) has the highest mean value of 3.92, implying that compliance with financial regulations and forensic audit implementation is strongly emphasized within the sampled firms.

Similarly, Internal Control System (ICS) records a high mean score of 3.88, suggesting that most firms maintain fairly robust control environments to support fraud prevention efforts. Forensic Audit Tools and Techniques (FATTECH) also show a relatively high mean of 3.81, indicating growing adoption of technological and analytical forensic tools in combating fraud. In contrast, Forensic Audit Expertise and Professional Competence (FAEXP) has the lowest mean score of 3.69, implying that although forensic expertise exists within the firms, there may still be gaps in professional competence and technical capacity. The minimum and maximum values across the variables reveal reasonable variability in responses, while the relatively low standard deviations, ranging from 0.61 to 0.73, indicate that the responses are not excessively dispersed. Overall, the descriptive statistics suggest that listed financial firms in Nigeria have moderately strong forensic auditing structures and fraud prevention mechanisms, thereby providing a suitable basis for further inferential analysis.

Table 2: Reliability and Convergent Validity

Construct	Cronbach's Alpha	Composite Reliability (CR)	AVE
FFP	0.89	0.92	0.69
FAP	0.87	0.91	0.67
FAEXP	0.85	0.90	0.65
FATTECH	0.88	0.92	0.70
ICS	0.86	0.91	0.68
REGCOMP	0.84	0.89	0.64

Source: Author's computation (2026)

The reliability and convergent validity results presented in Table 2 indicate that the measurement model is both reliable and valid for assessing the constructs used in the study. The Cronbach's Alpha values for all constructs range from 0.84 to 0.89, exceeding the minimum acceptable threshold of 0.70 recommended for internal consistency reliability. This suggests that the questionnaire items used to measure Financial Fraud Prevention (FFP), Forensic Auditing Practices (FAP), Forensic Audit Expertise and Professional Competence (FAEXP), Forensic Audit Tools and Techniques (FATTECH), Internal Control Systems (ICS), and Regulatory Compliance (REGCOMP) are consistent and reliable. Similarly, the Composite Reliability (CR) values, which range from 0.89 to 0.92, are all above the recommended benchmark of 0.70, further confirming the reliability and stability of the constructs. In addition, the Average Variance Extracted (AVE) values range between 0.64 and 0.70, exceeding the acceptable threshold of 0.50, thereby establishing convergent validity. This indicates that the indicators for each construct adequately explain the variance of their respective latent variables. Notably, FATTECH records the highest AVE value of 0.70, suggesting that the indicators measuring forensic audit tools and techniques strongly capture the construct. Overall, the results confirm that the measurement model possesses satisfactory reliability and convergent validity, making the constructs suitable for subsequent structural model analysis using PLS-SEM.

Table 3: Discriminant Validity (Fornell-Larcker Criterion)

Construct	FFP	FAP	FAEXP	FATTECH	ICS	REGCOMP
FFP	0.83					
FAP	0.61	0.82				
FAEXP	0.58	0.54	0.81			
FATTECH	0.64	0.57	0.52	0.84		
ICS	0.66	0.59	0.55	0.61	0.83	
REGCOMP	0.62	0.56	0.50	0.58	0.60	0.80

Source: Author's computation (2026)

The discriminant validity results presented in Table 3 using the Fornell–Larcker Criterion confirm that the constructs in the study are empirically distinct from one another. The diagonal values, which represent the square roots of the Average Variance Extracted (AVE) for each construct, are all greater than the corresponding inter-construct correlation coefficients in their respective rows and columns. Specifically, Financial Fraud Prevention (FFP) has a square root AVE value of 0.83, which exceeds its correlations with Forensic Auditing Practices (0.61), Forensic Audit Expertise (0.58), Forensic Audit Tools and Techniques (0.64), Internal Control

Systems (0.66), and Regulatory Compliance (0.62). Similarly, the AVE square roots for FAP (0.82), FAEXP (0.81), FATTECH (0.84), ICS (0.83), and REGCOMP (0.80) are all higher than their inter-construct correlations. These results indicate that each construct shares more variance with its own indicators than with other constructs in the model. Consequently, the findings establish adequate discriminant validity, implying that the constructs measure conceptually different phenomena without significant overlap. This confirms the appropriateness of the measurement model and supports the suitability of the constructs for structural model estimation in the PLS-SEM analysis.

Table 4: Structural Model (PLS-SEM Results): Path Coefficients

Path	Beta (β)	Std. Error	t-value	p-value	Decision
FAP → FFP	0.221	0.072	3.07	0.002	Significant
FAEXP → FFP	0.184	0.068	2.71	0.007	Significant
FATTECH → FFP	0.256	0.074	3.46	0.001	Significant
ICS → FFP	0.278	0.069	4.03	0.000	Significant
REGCOMP → FFP	0.205	0.066	3.11	0.002	Significant

Source: Author's computation (2026)

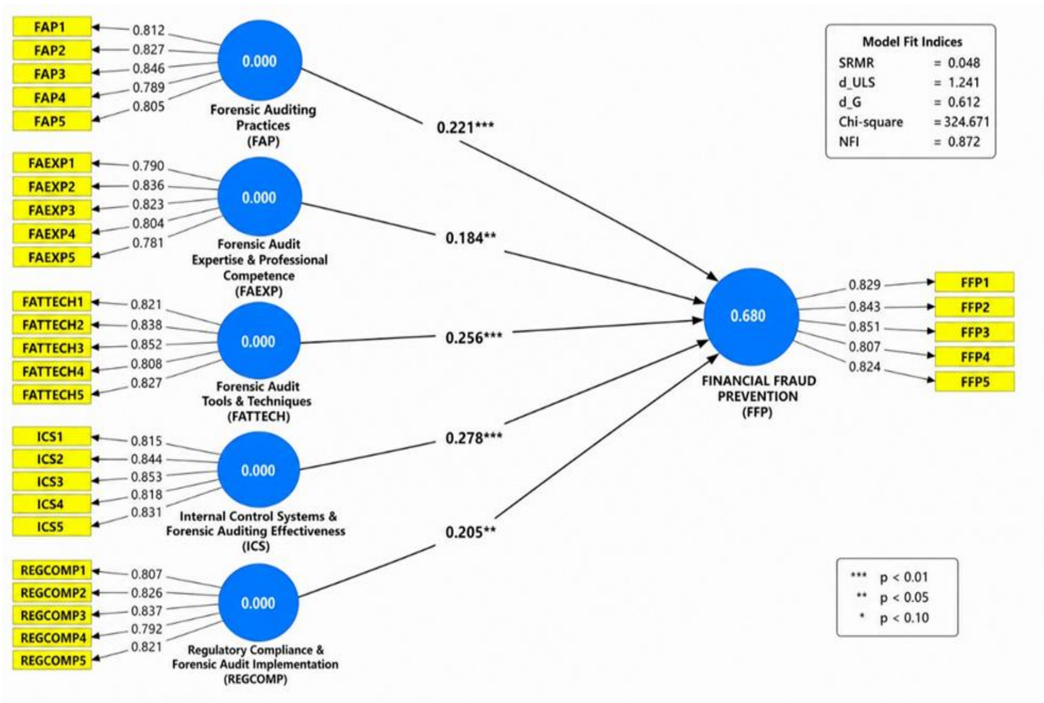

Figure 1

The structural model results presented in Table 4 reveal that all the forensic auditing variables exert positive and statistically significant effects on Financial Fraud Prevention (FFP) among listed financial firms in Nigeria. Specifically, Forensic Auditing Practices (FAP) have a positive and significant effect on financial fraud prevention (β = 0.221, p = 0.002), indicating that improved investigative procedures, fraud risk assessments, and forensic audit activities significantly enhance the ability of firms to prevent fraud. Similarly, Forensic Audit Expertise and Professional Competence (FAEXP) show a positive and significant influence on financial fraud prevention (β = 0.184, p = 0.007), suggesting that the presence of skilled and professionally competent forensic auditors improves fraud detection and mitigation capabilities within financial firms. The results further reveal that Forensic Audit

Tools and Techniques (FATTECH) significantly improve financial fraud prevention ($\beta = 0.256$, $p = 0.001$), implying that the adoption of technological and analytical forensic tools such as data analytics and digital forensic systems strengthens fraud monitoring and detection effectiveness.

Furthermore, Internal Control Systems (ICS) record the strongest positive effect on financial fraud prevention ($\beta = 0.278$, $p = 0.000$), indicating that effective control environments, monitoring procedures, and accountability systems are critical in reducing fraud opportunities within financial institutions. Regulatory Compliance and Forensic Audit Implementation (REGCOMP) also exert a positive and significant effect on financial fraud prevention ($\beta = 0.205$, $p = 0.002$), suggesting that adherence to financial regulations and proper implementation of forensic audit frameworks enhance transparency and fraud control mechanisms. Overall, the findings imply that improvements in forensic auditing practices, professional expertise, technological tools, internal control systems, and regulatory compliance collectively strengthen financial fraud prevention among listed financial firms in Nigeria. The significance of all the path coefficients further confirms the robustness of the structural model and the relevance of forensic auditing mechanisms in combating financial fraud within the Nigerian financial sector.

Table 5: Coefficient of Determination (R^2)

Endogenous Variable	R^2
FFP	0.86

Source: Author's computation (2026)

The coefficient of determination (R^2) result presented in Table 5 indicates that the independent variables jointly explain a substantial proportion of the variation in Financial Fraud Prevention (FFP) among listed financial firms in Nigeria. Specifically, the R^2 value of 0.68 implies that forensic auditing practices, forensic audit expertise and professional competence, forensic audit tools and techniques, internal control systems and forensic auditing effectiveness, and regulatory compliance and forensic audit implementation collectively account for 68% of the changes in financial fraud prevention. This suggests that the model possesses strong explanatory power, as a significant proportion of fraud prevention outcomes within the sampled firms is explained by the forensic auditing variables included in the study. The remaining 32% of the variation may be attributed to other factors not captured in the model, such as organisational culture, ethical climate, technological infrastructure, or external economic conditions. Overall, the result demonstrates that forensic auditing mechanisms are important determinants of financial fraud prevention in Nigerian financial firms and confirms the adequacy and predictive relevance of the PLS-SEM structural model.

Table 6: Effect Size (f^2)

Variable	f^2	Effect Size
FAP	0.09	Small
FAEXP	0.07	Small
FATTECH	0.11	Medium
ICS	0.15	Medium
REGCOMP	0.10	Medium

Source: Author's computation (2026)

The effect size (f^2) results presented in Table 6 show the individual contribution of each exogenous variable to the explanatory power of the structural model on Financial Fraud Prevention (FFP). The findings indicate that Forensic Auditing Practices (FAP) have an effect size of 0.09, while Forensic Audit Expertise and Professional Competence (FAEXP) record an effect size of 0.07, both of which are classified as small effects. This suggests that although these variables significantly influence financial fraud prevention, their individual contributions to the overall predictive power of the model are relatively modest. Nevertheless, their significance indicates that effective forensic audit procedures and the competence of forensic auditors remain important components of fraud prevention strategies within financial firms. In contrast, Forensic Audit Tools and Techniques (FATTECH), Internal Control Systems (ICS), and Regulatory Compliance (REGCOMP) exhibit medium effect sizes of 0.11, 0.15, and 0.10 respectively. Among these, Internal Control Systems (ICS) demonstrate the strongest contribution to fraud prevention, indicating that robust control mechanisms and monitoring systems play the most substantial role in reducing fraud opportunities and enhancing accountability in Nigerian financial institutions. Overall, the effect size results imply that while all the forensic auditing variables contribute to financial fraud prevention, technological tools, effective internal controls, and regulatory compliance exert relatively greater practical influence on fraud prevention outcomes.

Table 7: Predictive Relevance (Q^2)

Construct	Q^2
FFP	0.42

Source: Author's computation (2026)

The predictive relevance result presented in Table 7 indicates that the structural model possesses strong predictive capability for Financial Fraud Prevention (FFP). Specifically, the Q^2 value of 0.42 is greater than zero, which confirms that the model has satisfactory predictive relevance according to the benchmark for assessing Stone–Geisser's predictive validity in PLS-SEM analysis. This implies that the exogenous variables, namely forensic auditing practices, forensic audit expertise and professional competence, forensic audit tools and techniques, internal control systems and forensic auditing effectiveness, and regulatory compliance and forensic audit implementation, collectively have substantial predictive power in explaining financial fraud prevention among listed financial firms in Nigeria. The relatively high Q^2 value further suggests that the model is not only statistically adequate but also practically useful in predicting fraud prevention outcomes within the Nigerian financial sector. Consequently, the result confirms the robustness and reliability of the structural model and supports the relevance of forensic auditing mechanisms as important predictors of financial fraud prevention.

Discussion of Findings

The findings from Table 4 reveal that forensic auditing practices, forensic audit expertise and professional competence, forensic audit tools and techniques, internal control systems, and regulatory compliance all exert positive and significant effects on financial fraud prevention among listed financial firms in Nigeria. The significant effect of forensic auditing practices implies that regular fraud investigations, risk assessments, and investigative audit procedures strengthen the ability of financial institutions to detect and deter fraudulent activities. Similarly, the positive influence of forensic audit expertise suggests that the competence and professional skills of forensic auditors improve the quality of fraud detection and investigative outcomes within firms. The significant contribution of forensic audit tools and techniques further indicates that the use of technological and analytical systems such as data analytics, digital forensics, and computer-assisted audit techniques enhances the efficiency and accuracy of fraud prevention processes. Internal control systems recorded the strongest effect on financial fraud prevention, highlighting the importance of effective monitoring, segregation of duties, and accountability mechanisms in reducing opportunities for fraud within financial institutions. In practical terms, these findings suggest that Nigerian financial firms should invest more heavily in advanced forensic technologies, continuous professional training, and robust internal control frameworks to strengthen institutional resilience against financial crimes.

The findings strongly support the assumptions of Fraud Triangle Theory, which posits that fraud occurs when pressure, rationalization, and opportunity coexist. The significant influence of forensic auditing mechanisms on fraud prevention suggests that these systems primarily function by reducing opportunities for fraudulent behaviour through stronger controls, enhanced monitoring, and improved investigative capacity. Effective internal control systems and regulatory compliance frameworks reduce loopholes that fraud perpetrators may exploit, while forensic expertise and technological tools increase the probability of detection, thereby discouraging fraudulent behaviour. These findings are consistent with Mehta et al. (2022); Ogutu and Mwachiro (2023); Chen et al. (2025); Okoro, et al., (2026); who found that forensic accounting techniques, forensic technologies, forensic audit expertise and professional expertise significantly improve fraud prevention in Nigerian and Kenyan banks.

5. Conclusion and Recommendations

The study concludes that forensic audit practices, forensic audit expertise and professional competence, forensic audit tools and techniques, internal control systems and regulatory compliance play a significant and practical role in strengthening financial fraud prevention among listed financial firms in Nigeria. The findings demonstrate that effective forensic auditing practices, professional expertise, advanced forensic audit tools and techniques, robust internal control systems, and regulatory compliance mechanisms collectively enhance the ability of financial institutions to detect, deter, and prevent fraudulent activities. In particular, strong internal control systems and technology-driven forensic auditing tools emerged as major drivers of fraud prevention effectiveness, indicating that financial firms require both institutional controls and modern investigative capabilities to address increasingly sophisticated financial crimes. The study therefore affirms that improving forensic auditing structures is essential for enhancing transparency, accountability, and operational integrity within Nigeria's financial sector.

In line with the conclusion, the following recommendations are proffered:

i. Financial firms should institutionalise regular forensic investigations, fraud risk assessments, and continuous auditing processes to improve early fraud detection and prevention.

ii. Firms should invest in continuous professional training, certifications, and capacity development programs for forensic auditors to strengthen investigative and analytical capabilities.

iii. Financial institutions should deploy modern technologies such as data analytics, artificial intelligence, digital forensics, and computer-assisted audit systems to improve fraud monitoring and detection efficiency.

iv. Firms should strengthen segregation of duties, monitoring procedures, authorisation controls, and accountability mechanisms to minimise opportunities for fraud occurrence.

v. Financial firms should fully comply with regulatory and financial reporting standards while integrating forensic auditing into their governance and compliance frameworks to enhance transparency and fraud control.

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IMPACT OF CORPORATE RISK ON FINANCIAL PERFORMANCE OF LISTED FOOD AND BEVERAGE COMPANIES IN NIGERIA

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Abstract
This study investigated corporate risk and financial performance of food and beverages companies in Nigeria. It focuses on how risks such as liquidity, credit and operational risks affect return on assets. The food and beverages sector plays a significant role in national development through its contribution to GDP, job creation and provision of essential households' consumables. Given the dynamic and uncertain operating environment, effective risk management is crucial for sustaining performance in the sector. Despite its importance, there is limited empirical evidence in Nigeria that jointly considers the effects of credit, liquidity, and operational risks on ROA within this sector; hence, this study focuses specifically on listed food and beverages companies. The study used an ex-post facto research design, and the period of study is 5 years ranging from 2020-2024. All 14 listed companies in the sector were covered by this study. Data were also obtained from annual financial statements of the sampled companies and analysis were done using regression technique with the aid of Stata 13 version. The results revealed that credit risk has a negative and statistically significant effect on ROA, suggesting that higher credit exposure reduces profitability. Liquidity risk was found to have a positive but statistically insignificant effect on ROA, suggesting a weak influence on performance. In contrast, operational risk exhibited a positive and significant effect on ROA, implying that effective management of operational activities can promote financial performance. Finally, corporate risk remains a critical determinant of performance in the Nigerian food and beverages sector. The study therefore recommends that companies adopt more stringent credit evaluation procedures and continuously monitor their credit portfolios to minimize default risk. Additionally, companies should ensure adequate liquidity levels to ensure they can meet short-term obligations without disrupting operations.

Keywords: Credit risk, Liquidity risk, Operational risk, Return on assets.

1. Introduction

In the contemporary global business environment, food and beverages industry remains a vital sector of the Nigerian economy, with a major impact on foreign exchange, GDP, job opportunities and the consumption need of the household. Every economy globally depends in one way or the other on manufacturing sector, especially food and beverage segment of which Nigeria is not exceptional. This industry operates in a dynamic environment characterized by fluctuating consumer taste, volatile input cost, change in regulation and macroeconomic

instability. The nature of food and beverages industry involves tight margins, complex chain while depending on both local and foreign or imported raw material.

To ensure long term survival of this industry, effective corporate governance is essential to sustaining competitive advantage and long-term survival (Kafidipe et. al, 202). Corporate risk management is viewed as identifying, assessing, and reduction of risk that threatens the accomplishment of the objectives of the organization.

Food and beverage companies in Nigeria face numerous risks that are particular to their activities, such as credit liquidity and operational risks. Liquidity risk occurs due to company's inability to meet its obligations financially, when necessary, without incurring unacceptable losses. In an industry where cash conversion cycles can be elongated by supply delays or inventory challenges, inadequate liquidity management can quickly disrupt operations. Credit risk, on the other hand, involves losses from customers or counterparties failing to fulfill financial commitment. Given the increasing trend of trade credit in the Nigerian food and beverage sector where distributors and retailers negotiate extended payment terms exposure to bad debts becomes a major concern (Oluwadamilola & Hassan, 2023; Oluwaleye et al, 2023). Threats resulting from internal procedures, human failure, systems, or other external factors that interfere with regular corporate operations are refers to as operational risk. For food and beverage companies, this can include supply chain breakdowns, equipment failures, food safety breaches, and labour issues, all of which can have significant financial and reputation implications.

Financial metrics like ROA are frequent measures of profitability, which is a primary concern of corporate management. This is mostly used in determining management effectiveness and the success of operations demonstrating the company capability to make money from asset usage. ROA is a useful performance indicator ratio, especially in companies such as food and beverages companies where there is stiff competitions and recurring external factors such as inflation, exchange rate fluctuations and currency devaluation. Even though risk management is crucial, most companies find it difficult to successfully align their risk management procedures with performance objectives. Companies in Nigeria such as food and beverages are faced with performance inconsistency due to series of risk that threatened the efficiency of operations and financial stability. The sector is confronted with high risk of operation; liquidity challenges has also deteriorated due to inflationary crisis and foreign exchange volatility. Conversion of assets to cash when the need be has been made difficult due to liquidity challenges. Also, there has been an increase in credit due to prolong payment from distributors and this ultimately leads to possibility of bad debt occurring. Also, other components of risk such as currency depreciation and prices of commodity continue to take away the profit (Toufaini, 2023, Ramazan, & Gulden, 2019).

Despite these challenges, there are inadequate studies on other factors of risk that impact financial performance of foods and beverages companies. Some companies manage to perform well in the midst of exposure to adverse risk, while others still battle to maintain profitability. This variation raises concern about risk management strategies in existence and the way in which particular risk dimension affects financial success such as ROA. Moreover, studies conducted previously in Nigeria and across the globe were in different field and industry rather than isolating the food and beverage companies, which has a unique operational feature. Therefore, there is a gap in knowledge regarding how credit, liquidity and operational risk management affects the financial success of food and beverages companies in Nigeria. Therefore, this research examines the interaction between corporate management and financial performance of Nigerian food and beverages, companies in Nigeria focusing on liquidity, credit and operational risk with ROA as measure for financial performance. This paper is divided into three parts: introduction, literature review and results and discussion.

1.2 Objectives of the Study.

The main objective of this research work is to investigate how corporate risk affect the financial performance of listed food and beverages companies. Other objectives are to:

i. ascertains the impact of credit risk on ROA of listed food and beverages companies in Nigeria

ii. investigate the impact of liquidity risk on ROA of listed food and beverages companies in Nigeria

iii. examine the impact of operational risk on ROA of listed food and beverages companies in Nigeria.

1.3 Research Questions.

The following question were drawn:

i. How does credit risk impact ROA of listed food and beverages companies in Nigeria?

ii. How does liquidity risk impact on ROA of listed food and beverages companies in Nigeria?

iii. How does operational risk impact on ROA of listed food and beverages companies in Nigeria?

1.4 Hypotheses of the study.

HO_1: Credit risk has no significance impact on ROA of food and beverages companies in Nigeria

HO_2: Liquidity risk has no significance impact on ROA of food and beverages companies in Nigeria

HO_3: Operational risk has no significance impact on ROA of food and beverages companies in Nigeria.

2.0 Literature review.

2.1 Corporate risk

Corporate risk is critical aspect in business strategy that ensures organizations can identify and address uncertainties before they escalate into major financial or operational crises. It provides a structured approach to dealing with risks that could hinder the achievement of business goals, ensuring long-term sustainability Akuma et al., (2022). Additionally, Agbarha (2023) explain that corporate risk management involves a step-by-step process, commencing with risk assessment, where potential threats are identified, evaluated and categorized based on their level of severity. This phase is essential in prioritizing risks, as it helps organizations focus on high-impact threats that could disrupt financial stability. Conversely, Al-Nimer et al., (2023) emphasized risk mitigation strategies are just as important as risk identification. Organizations must implement preventive measures to lessen the possibility of occurrence of risk. These strategies may include adopting advanced technology, strengthening internal controls, or creating contingency plans to minimize financial losses in case of disruptions.

Moreover, Islam and Alhassan, (2021) argue that corporate risk management fosters a proactive culture within an organization. Instead of waiting for risks to materialize, businesses that adopt a risk-conscious mindset can anticipate potential threats and make informed decisions to protect their interests. This proactive approach is particularly beneficial in volatile industries, where market fluctuations and geopolitical risks are prevalent. Similarly, Adegbie and Adesanmi, (2020) highlighted that effective management of these risks enhances investor confidence. Investors are more likely to trust organizations with strong risk management frameworks, as these companies demonstrate the ability to safeguard assets and maintain financial stability even during economic downturns.

Hence, effective risk handling, therefore, plays a crucial role in attracting and retaining investors. Furthermore, Al-Swidi and Al-Hosam (2020) noted that corporate risk management is closely linked to compliance with regulatory frameworks. Companies operating in sectors like food and beverages companies must adhere to stringent regulations, and failure to do so can lead to legal consequences, fines, and reputational damage. A well- structured risk management system ensures compliance with industry laws and reduces legal liabilities. Consequently, Alzoubi, (2020) suggest technology is critical in modern risk management strategies. Many organizations are adopting artificial intelligence to enhance their ability to predict and manage risks.

2.1.1 Credit risk

According to Cynthia and Brian, (2025), credit risk means the probability of financial loss due to borrowers' failure to fulfill debt commitment. This type of risk arises when loan is taken, goods are received on credit or credit is extended to customer. If payment is not made at all or there is delay in payment terms, the business financial stability can be affected Olabisi (2023). In food and beverages industry, credit risk is of importance because companies depend heavily on supply chains major distributors and other retailer. Many of these companies purchases agricultural raw materials, packaging material on credit from suppliers. If the company witnessed low sales, disruption of supplies or rising cost of production, it may face difficulties in repayment terms. Also, these companies offer sales to supermarket, wholesalers on credit, if there is delay payment or default, the company may face cash flow problem. Poor credit policy can lead to loss of funds. Therefore, food and beverages must carefully assess their customer credit worthiness and ensure debt is managed effectively to ensure a stable business.

2.1.2 Liquidity risk

The inability of a company to fulfill financial commitment as at when due is referred to as liquidity risk. This could be as a result of insufficient fund or cash. This risk is peculiar to different industries, organizations and investors. When there is economic crisis or downturn, companies facing high liquidity risk may have problem paying creditors, employees which may eventually leads to reputational damage or financial distress. More, so liquidity risk arises when firms hold assets that cannot converted to cash easily. Oluwaleye et al., (2023) describe liquidity risk as the possibility of losses due to failure of a company to meet its maturing commitments or finance additional assets without incurring unexpected costs. This risk also hinders company's capacity to fulfill its commitments to third parties, resulting in internal financial difficulties that impact company performance (Gadzo et al., 2019).

It occurs when a company cannot quickly obtain fund needed for its operations. In food and beverages companies, liquidity risk can have serious operational consequence because these companies rely on continuous cash flow to purchase raw materials like agricultural products and other production input for. More so, it may hinder the company ability to pay for transport, employees or acquired the needed equipment for their operations. Therefore, effective cash flow management and effective financial planning are important for these companies to reduce liquidity and ensure operations are done smoothly.

2.1.3 Operational risk

Operational risk focuses losses arising due to failure in internal process, people or humanly errors system failure and its mismanagement can lead to disruption in operations inefficiencies and heightened costs. This risk arises from the daily operations of an entity and affects productive outcome as well as financial performance. A food and beverages company

faces operational risk because this company depends on complex production process, strict hygienic standards efficient supply chain. If any failure occurs in these areas, it can lead to financial losses, poor quality control or contaminated product can lead to loss of customer trust. Other external factors such as power surge, non-availability of raw material can further aggravate operational risk. Scholars such Allen et al., (2020) argued that robust operational risk frameworks contribute to smoother operations and improved performance

2.1.4 Financial performance

As stated by Oluwadamilola and Hassan, (2023) describe profitability as a degree by which company' can generate income and ensure expenses are well managed, as well as its efficiency in resources utilization. Key metrics such as liquidity, profitability and solvency ratio are to measure financial performance. Understanding and boosting financial performance especially for companies such as food and beverages companies that are capital intensive in nature is critical to ensure long term growth and sustainability. Companies like food and beverage companies, faces unique problems such as high operational cost, pressure on regulations, fluctuating prices of commodities, this makes financial performance a critical focus area. Furthermore, the company ability to meet financial obligations, investment in growth opportunities and shareholders rewards is closely related to financial performance. Thus, measuring and improving financial performance is key to attract investors, secure finance and gaining market advantage

2.2 Empirical Review

Asimiyu and Akinumi (2025) investigated risk management and profitability of listed construction companies in Nigeria, the moderating role of board size. The study focused on real estate and construction companies in Nigeria covering 10 years period from 2014 to 2023. Ex-post facto research design was adopted. Analysis was done using panel least square regression. Its' findings showed operational risk exerts insignificant negative effect (ROA) of the estate/construction companies in Nigeria. Rasheed et al., (2025) explored the effect of credit management on financial performance of listed Deposit Money Banks in Nigeria. The study covers a period of 2013 to 2022. The study used ex post facto research design covering 10 listed DMBs. Analysis of data was done using panel least square. Result of the analysis revealed that credit risk management has a positive and significant effect on return of assets of the DMBs

Arta and Blerta (2023) investigated the effect of credit risk on the profitability of Commercial Bank in Balkan countries. Ex-facto research design was used. the focus of the study is on 26 credit banks for a period of 12 years ranging from 2010 to 2022. Financial performance was proxied by ROA and data analysis was done using regression analysis. The result obtained indicated credit risk is inversely related to financial performance. Udenwa et al., (2023) investigated the influence of liquidity risk on the financial performance of Deposit Money Banks in Nigeria. Ex-facto research design was used in the study with a focus on 11 Listed DMBs covering a period of 2014-2021. Secondary data were used. Regression analysis was done and result revealed operational risk has a statistical significance impact on ROA of DMBs.

Olabisi (2023) examine operation risk management on-financial performance of DMBs in Nigeria with focus on some selected commercial banks in Nigeria for a period 2008 to 2017. Linear multiple regression analysis was done. Result obtained showed there is positive relationship between operational risk and financial performance. The study is based on a limited scope; a longer sample size may make interesting research in the future. Allen et al., (2020) examined operational risk on the financial performance of banks in Tanzania. The study used longitudinal explanatory design using quantitative approach. The study focused on 41 commercial banks in Tanzania. Multiple regression analysis was done and result obtained indicated that operational risk statistically influences financial performance.

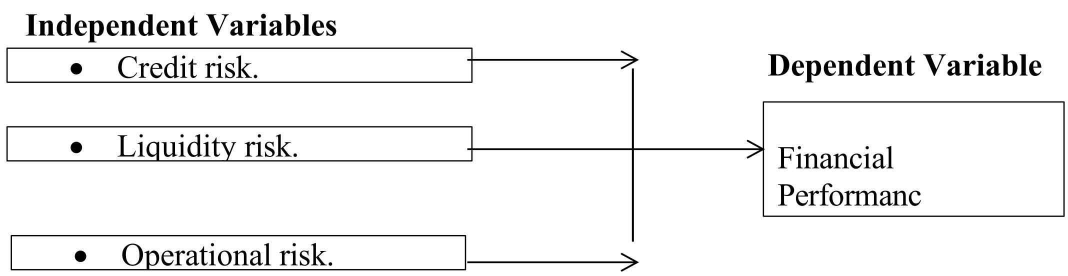
Allen et al., (2020) examined operational risk and financial performance of banks in Tanzania, the study used longitudinal explanatory research design panel data were used for the study and the population consist of 41 commercial banks covering a period of 2006 to 2019. Longitudinal approach was used in data analysis. The result from the analysis indicates operational risk has a negative and insignificant effect on return of assets of the banks

Also, Yinka et al., (2020) investigated the effect of liquidity risk and profitability of listed Deposit Money Banks in Nigeria. The study covers a period of ten (10) years from 2009 to 2018. The study used ex post facto research design and the population consisted of 15 DMBs listed on the Nigeria Exchange Group. Panel regression analysis was used in the study and the results obtained shows that liquidity risk has a significant effect on profitability.

Babatunde et al., (2020) examined the impact of credit risk performance with a particular focus on big and small banks in South Africa Commercial banks. Descriptive research design was used in the study. Data were obtained from 14 commercial banks. Regression was used in data analysis. Finding revealed that credit risk has significant great impact on performance measured by return on asset. Also, Sulieman et al., (2019) investigated risk management and financial performance of consumer goods companies in Nigeria. Population consists of 13 of companies. The study period covers 2014 to 2018 and ex post facto research design was used. Data were derived from the financial statements of the sampled companies. Analysis was done using regression methods and finding from study showed operational risk is statistically insignificant to financial performance of the sampled companies. Finding from study showed operational risk is statistically insignificant to financial performance of the sampled companies.

2.3 Conceptual Framework

This section explores various corporate risks that are expected to have an effect on company's financial performance based on the literature review that was illustrated earlier. Figure 1.1 presents the conceptual framework of this study. On the left hand-side are the listed corporate risk proxies namely, credit risk, liquidity risk and operational risk. These variables are related to the company performance, shown on the right-hand side, which is measured by return on assets.



2.4 Theoretical Framework

2.4.1 Trade-off theory

This study is underpinned by risk trade-off theory. This theory was developed by Harry Markowitz, (1952), which posited that investment decision should be evaluated on the basis of expected returns and level of risk associated with it. The theory emphasizes that rational decision-makers seek to maximize returns for a given level of risk, thereby operating along an efficient frontier. In the context of this study, the theory provides a foundation for understanding how corporate risk influences firm performance, especially return on assets. Specifically, firms are exposed to different dimensions of risk, including credit risk, liquidity risk, and operational risk, which directly affect their ability to generate returns from assets.

Credit risk reflects the likelihood of default by borrowers and can negatively impact ROA through increased bad debts and loan losses. Liquidity risk relates to a firm's ability to meet short-term obligations, where inadequate liquidity may constrain operations and reduce profitability. Operational risk, on the other hand, arises from internal process failures, system breakdowns, or human errors, which can either enhance efficiency when well managed or reduce returns when poorly handled. In line with the risk trade-off framework, firms are expected not to eliminate these risks entirely but to manage and optimize them. Taking on an appropriate level of credit, liquidity, and operational risk can enhance returns on assets; however, excessive exposure may lead to increased earnings volatility, higher financial distress costs, and reduced firm value. Therefore, the theory supports the argument that effective corporate risk management involves balancing these risks to achieve optimal ROA, which aligns with the empirical investigation of this study.

3.0 Methodology

Ex-post facto research design was adopted in the study as it permits the examination of independent variables in retrospect for the possible influence on the dependent variable. The population consisted of the fourteen (14) food and beverages companies on the Nigerian Exchange Group (NGX). Census sampling techniques was adopted in the study. This technique was adopted because it permits the gathering of data from every sample in the population. Secondary sources of data consisted of the annual reports and accounts of the selected companies were the main source of data used in the study. Descriptive and inferential statistics were used to analyze the data. To determine the type and the level of relationship among the variables, multiple regressions were used to test the hypotheses at 5% level of significance. The theoretical and empirical specification of the models are summarized in Table 1

Table 1: Variables and their Measurements

Variables	Type	Measurement	Source
Return on asset	Dependent Variable	PAT/Total asset	Rasheed, (2025)
Credit Risk	Independent Variable	Total debt to total assets	Yinka, (2020)
Liquidity Risk	Independent Variable	Current assets to current liabilities	Yinka, (2020)
Operational Risk	Independent Variable	Operating cost to operating income	Rasheed, (2025)

Sources: Author's Compilation (2025)

3.1 Model Specifications

The objective of the study is to measure the impact of corporate risk on financial performance of listed food and beverages. To achieve this, the specified model below is used. Regression model is in line with the theoretical framework which relates to the variables are specified as

CR =f(CR, LR, OR) FPt = (ROA)

Where:
CR represents corporate risk
FPt represents financial performance ROA = the return on assets

This model was developed each to test the hypothesis
$ROA = \beta_0 + \beta_1 CR_{it} + \beta_2 LR_{it} + \beta_3 OR_{it} + \mu_{it}$ (1)

β0 = denotes the intercept
β1 = coefficient of explanatory variables
CR = credit risk
LR =liquidity risk
OR operational risk
i = cross – sectional variables 1, 2, 3… 14
t = time series variable 1, 2, 3 5 μ = the error term.

4.0 Data analysis and discussion of findings

4.1.1 Descriptive statistics

Table 2. Descriptive of Variables

Variables	Mean	Std. Dev.	Min	Max.
ROA	8.177727	1.083064	5.044387	9.856901
CR	1.476533	3.058262	.913487	14.49192
LR	1.281648	1.54039	.0107345	9.759993
OR	4.835987	3.747199	-6.277153	9.290976

Source: Authors' Compilation, (2025)

It can be seen from the table that the average ROA has a mean value of 8.177727, this mean value shows that on average the companies generate 8.81% return on their assets. It also showed a standard deviation of 1.083064, an indication that ROA value do not vary widely from the mean with a minimum and maximum figure of 5.044387 and 9.856901respectively. Also, the mean value of credit risk of the companies is 1.476533 indicating a low credit risk among the companies. Also, there is wide variability as indicated by the standard deviation of 3.058262. Also, the minimum and maximum value of .9135 and 14.4919 showed that while some companies have low credit risk while others experienced significant higher credit risk.

Also, the table showed that liquidity risk has a mean value of 1.2816 which indicates that companies in the industry maintains a moderate liquidity position, there is also some level of variations in the liquidity position among the companies as indicated by a standard deviation 1.5404. the minimum and maximum value of .0107 and 9.7600 shows that some companies face moderately high liquidity risk. Finally, risk has an average risk of 4.8360 indicating that companies in the industry faces operational risk. Also, operational risk has a standard deviation value of 3.7472 indicating a high variability level of operational risk across the companies. The minimum and the maximum value of -6.277153 and 9.290976 showed a wide range of operational risk. This indicates that some companies experience operational challenges compared to others.

4.1.2 Correlation Matrix

This section focuses on the result of the correlation analysis that showed the degree of associations among the selected variables in this study. The correlation results which related return on assets to credit risk, liquidity risk and operational risk with each other is discussed.

Table 3. Correlation Matrix of the Variables

Correlates	ROA.	CR.	LR.	OR.
ROA	1.0000			
CR	-0.5743	1.0000		
LR	0.2322	-O.1959	1.0000	
OR	0.2343	0.0002	-0.0929	1.0000

Source: Authors' Compilation, (2025).

Table, 2 display the correlation showing the relationship between the variables. Correlation determines direction between the variables. The result indicates that ROA has a negative association with credit risk with a value of -.5743. This shows that a rise in credit risk will reduce ROA. Also, ROA has a positive correlation with liquidity risk with a value of 0.2322. This suggests that a rise in liquidity risk will result in increase in ROA. Finally operational risk is positively correlated with ROA with a value of 0.2343; this indicates a weak positive relationship between operating ratio and profitability.

4.2 Analysis and interpretation of regression result

This section presents the regression results of the dependent variables (ROA) and the independent variables of the study (Credit risk, liquidity risk and operational risk. The presentation was followed with the analysis of association between the dependent variable and individual independent variables; the cumulative analysis was also captured. The result of the hypotheses is displayed in the table 4 below followed by the interpretation of the hypotheses.

Table 4: Regression Results (OLS)

Variables.	**Coefficient.**	**t-value.**	**p-value.**
CR	-0.19312	-5.8	0.000
LR	0.1043571	1.58	0.118
OR	0.717044	2.70	0.009
Prob	0.000		
Number of Obs.	70		
R-square	0.4058		
Adj R-square	0.3807		

Source: Authors' Compilation, (2025)

The ordinary least squares (OLS) regression results presented in Table 3 indicate that the overall model is statistically significant at the 5% level. This is evidenced by the probability value of 0.000 for the F-statistic, which is less than the threshold of 0.05. This suggests that the explanatory variables included in the model jointly have a significant effect on the dependent variable, and the model is appropriate for inference. The goodness-of-fit statistics show that the model has moderate explanatory power. The coefficient of determination (R^2) of 0.4058 implies that approximately 40.58% of the variation in the dependent variable is explained by the independent variables (Credit risk, Liquidity risk, and operational risk). The adjusted R^2 value of 0.3807 further confirms this, indicating that after adjusting for the number of predictors, about 38.07% of the variation is still accounted for. This suggests that while the model explains a reasonable portion of the variation, other factors not included in the model may also play a role.

Research Hypothesis One (HO_1): Credit risk has no significance impact on ROA of listed food and beverages companies in Nigeria

The regression result revealed that credit risk as depicted in Table 3, has a coefficient value of - 0.19312 which is significant at 5%. This indicates that credit risk has a negative and statistical effect on return on assets of the listed food and beverages companies in Nigeria. Also, this implies that for every 1 unit increase in current risk, the return on assets of food and beverages companies will decrease by approximately 19%. This makes the study to reject the first hypothesis which stated that credit risk has no significant effect on financial performance of listed food and beverages companies in Nigeria. This is in line with the findings of Arta and Blerta (2023), Rasheed et al, (2025) and Babatunde et al., (2025).

Research Hypothesis Two (HO_2): Liquidity risk has no significance impact on ROA of listed food and beverages companies in Nigeria

In contrast, liquidity risk has a coefficient of 0.1043571 with a p-value of 0.118, which exceeds the 5% level of significance. This implies that Liquidity risk does not have a statistically significant effect on the dependent variable return on assets of food and beverages. Although the positive coefficient suggests a direct relationship, the lack of statistical significance means that this effect cannot be reliably generalized. This provides the basis for not rejecting the second hypothesis which presumed that liquidity risk has no significant effects on return on assets of food and beverages companies in Nigeria. This contradicts the study of Yinka et al., (2020)

Research Hypothesis Two (HO_3): Operational risk has no significance impact on ROA of listed food and beverages Companies in Nigeria.

Finally, operational risk shows a coefficient of 0.717044 with a p-value of 0.009, which is below the 5% threshold of significance level. This indicates that operational risk has a statistically significant positive effect on the dependent variable. In practical terms, a one-unit increase in operational risk is associated with an increase of approximately 71% in the dependent variable. This also provides a basis for rejecting the null hypothesis. This agrees with Allen et al., (2020) and Olabisi (2023) but contradict Sulieman et al., (2019). Overall, the findings highlight that credit risk and operational risk are the key determinants in the model, while liquidity risk does not significantly contribute to explaining variations in the dependent variable.

4.3 Conclusion

This study examined the effect of corporate risk particularly credit risk, liquidity risk and operational risk on financial performance measured by return on asset (ROA) of listed food and beverages companies in Nigeria. The addressed problem stem from reoccurring instability in the performance of the sector as a result of exposure to several risk dimensions and lack of the sector specific empirical evidence on how probability is influenced by these risks. The result of the analysis revealed that credit risk has a negative effect of ROA which means that higher exposure

to delay and payment defaults results to reduced profitability. Also liquidity risk was positively and insignificantly related to ROA suggesting that its effects on profitability are not strong enough to decisively influence outcome. However, operational risk displayed a positive and significant effect on ROA, suggesting that management of operational processes effectively may boast firm performance. The study concludes that while not all risk equally affect performance, optimization and proper management of major risk such as credit and operational risks are vital for enhancing profitability and guaranteeing sustainable growth in the Nigerian food and beverages industry.

4.4 Recommendations

Below are the recommendations of the study:

i. Companies should ensure a more stringent credit evaluation methods and monitor loan portfolio to lower risk of defaults.

ii. Companies should ensure adequate level of liquidity so as to meet their immediate short-term obligations without affecting operations adversely.

iii. To reduce operational failure, companies should enhance operational risk management by ensuring that improved internal control system is put in place, staff training and technology are in place to reduce operational failure.

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CHIEF EXECUTIVE OFFICER'S ATTRIBUTES AND FIRM VALUE OF LISTED DEPOSIT MONEY BANKS IN NIGERIA - MODERATING ROLE OF DIVIDEND PAYOUT RATIO

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Abstract
The inconsistent findings on how CEO financial expertise and gender influence firm value in Nigerian banks have created uncertainty regarding the effectiveness of leadership attributes in driving market performance. Therefore, this study investigates the effect of CEO financial expertise and gender on the value of listed Deposit Money Banks (DMBs) in Nigeria, with dividend payout ratio serving as a moderating variable. Adopting a causal-comparative (ex-post facto) research design, the study examined a sample of 13 banks purposively selected from a population of 14 listed DMBs as at 31st December 2024. Secondary data were obtained from audited annual reports and accounts of the selected banks covering the period 2014–2024, which spans the 2016 and 2020 economic recessions in Nigeria. Panel least squares regression analysis was employed using Stata 17 due to its effectiveness in handling variability, collinearity, and dynamic individual effects. The findings reveal that CEO gender has a positive but statistically insignificant direct effect on bank value, implying that gender diversity contributes only marginally to firm value in the Nigerian banking sector. Similarly, CEO financial expertise shows a negative and insignificant effect, indicating that technical financial competence alone does not automatically enhance firm value. However, the study finds that the influence of these CEO attributes becomes more meaningful when aligned with dividend payout decisions. The study concludes that dividend policy plays a critical moderating role in translating leadership attributes into value creation. It therefore recommends that boards of Nigerian banks strategically align CEO expertise with investment and dividend decisions to optimize firm value. Regulatory authorities, including the Central Bank of Nigeria and the Nigerian Exchange Group (NGX), should continue to promote gender inclusion in executive leadership, while banks should adopt balanced dividend policies that sustain investor confidence and long-term growth.

Keywords: CEO financial expertise, CEO gender, firm value, dividend payout ratio, deposit money banks.

1. **Introduction**

Firm value is a critical indicator of a company's financial health, reflecting its profitability, asset base, and attractiveness to investors. A higher firm value signals strong performance and enhances investor confidence, influencing key decisions such as investment and dividend policies. In the Nigerian banking sector, particularly among Deposit Money Banks (DMBs), firm value is especially important due to their central role in financial intermediation, credit provision, and economic stability. As such, maintaining and improving bank value is essential not only for shareholders but also for the broader economy.

The Chief Executive Officer (CEO), as the top decision-maker, significantly influences firm value through strategic direction, risk management, and organizational leadership. Key CEO attributes such as financial expertise and gender have been identified as factors that may shape managerial decisions, investor perceptions, and governance practices. CEOs with financial expertise are often better equipped to interpret complex financial data and engage effectively with capital markets, while gender diversity at the executive level has been associated with improved governance and balanced decision- making. However, the extent to which these attributes directly impact firm value remains uncertain, particularly in developing economies like Nigeria.

Empirical evidence on the relationship between CEO financial expertise, gender, and firm value is mixed and inconclusive. While some studies suggest that financial expertise and gender diversity enhance firm performance, others report insignificant or even negative effects. In Nigeria, structural, cultural, and institutional factors may limit the influence of these attributes, resulting in inconsistent outcomes. Additionally, leadership traits alone do not fully determine firm value, as external financial signals particularly dividend payout ratio play a crucial role in shaping market perceptions and investor confidence.

Dividend payout ratio serves as an important moderating variable, influencing how investors interpret managerial decisions and firm performance. A consistent or high dividend payout can signal financial strength and stability, potentially strengthening or weakening the relationship between CEO attributes and firm value. Despite its significance, dividend policy has often been overlooked in studies examining the impact of CEO characteristics on firm performance. This gap is particularly relevant in the Nigerian context, where investors closely monitor dividend payments as indicators of management quality and financial soundness.

The Nigerian banking sector has undergone significant reforms over the past two decades, including recapitalization, mergers, and stricter regulatory frameworks. However, challenges such as fluctuating share prices, inconsistent dividend policies, governance failures, and past financial crises continue to raise concerns about long-term value creation. Notable cases of leadership failures and corporate misconduct in the Nigerian banking sector further highlight the need for stronger corporate governance practices. For instance, the removal of Erastus Akingbola by the Central Bank of Nigeria (CBN) in 2009 over allegations of financial mismanagement and corporate abuse raised serious concerns about executive accountability and governance standards in Nigerian banks. Similarly, Cecilia Ibru was removed from office and later convicted for corporate fraud and reckless financial practices, which contributed to the collapse of Oceanic Bank (Sanusi, 2010). In another case, the distress and eventual collapse of Skye Bank in 2018 due to poor governance practices, insider abuses, and weak financial management further emphasized the importance of effective leadership and regulatory oversight (CBN, 2018). These incidents demonstrate how weak corporate governance and ineffective leadership can undermine investor confidence, reduce firm value, and threaten financial sector stability. Given the inconsistencies in existing literature and the limited focus on dividend payout as a moderating factor, there is a clear need for context-specific research to better understand how CEO financial expertise and gender interact with dividend policy to influence firm value in Nigerian banks.

The main objective of the study was to examine the effect of financial expertise and gender on value of listed deposit money Banks in Nigeria. Other specific objectives are:

i. Examine the effect of CEO financial expertise on value of listed deposit money Banks in Nigeria.

ii. Ascertain the effect of CEO gender on value of listed deposit money banks in Nigeria.

iii. Assess the effect of dividend payout ratio on value of listed deposit money banks in Nigeria.

iv. Evaluate the effect of dividend payout ratio on the relationship between financial expertise and value of listed deposit money banks in Nigeria.

v. Determine the effect of dividend payout on the relationship between gender and value of listed deposit money banks in Nigeria.

The objective of the study was achieved by formulating the following hypotheses in a null form and tested: -

HO_1: CEO financial expertise has no significant effect on value of listed deposit money Banks in Nigeria.

HO_2: CEO Gender has no significant effect on value of listed deposit money Banks in Nigeria.

HO_3: Dividend pay-out ratio has no significant effect on value of listed deposit money Banks in Nigeria.

HO_4: Dividend pay-out ratio has no significant effect on the relationship between CEO Financial Expertise and value of listed deposit money Banks in Nigeria.

HO_5: Dividend pay-out ratio has no significant effect on the relationship between CEO Gender and value of listed deposit money Banks in Nigeria.

Nigeria experienced economic recession in 2016 as a result of massive decline in oil prices and poor management of currency crisis (Anachedo et al; 2021). Another economic recession was also experienced in 2020 which was as a result of the covid-19 pandemic in which some of the strongest nations in the world were also affected (Ugwueze et al; 2020). These issues have increased the need for rigorous research on topics that have to do with ways of strengthening the value of deposit money banks such as this topic, “Financial expertise, gender and value of listed deposit money Banks in Nigeria moderated by Dividend payout ratio”. Findings from the study will pave ways to strengthen the value of deposit money banks in order to make them strong and able to cushion the effects of global financial crisis as well as Nigeria’s economic recession.

2. Literature Review

Basically, this section reviews the concepts used in the study, empirical literature in relation to the variables of the study were also reviewed and concludes with theories underpinning the variables used.

Conceptual Framework

This sub-section discussed the moderating variable that influences the strength or direction of the relationship between the independent variables (CEO Financial expertise and CEO Gender) and the dependent variable (Share price) in the Fig 1 shows below:

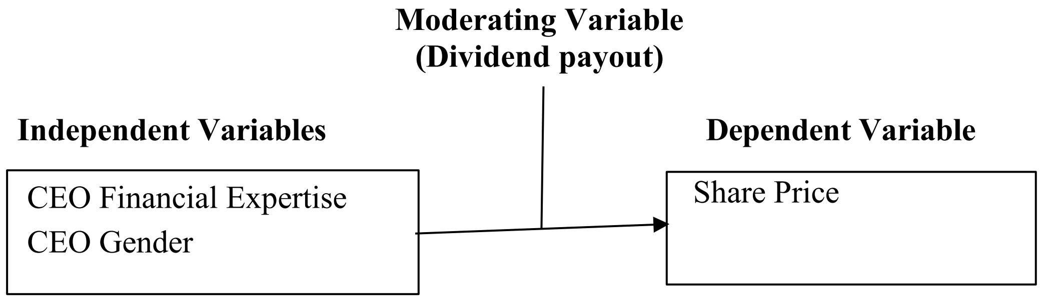

Figure 1. Conceptual Framework.

2.1. Conceptual Review

Bank value reflects the market performance and financial worth of deposit money banks as perceived by investors and stakeholders. It is commonly proxied by market-based measures such as share price, Tobin's Q, or price-to-book ratios (Berger & Patti, 2006). In essence, bank value captures the ability of financial institutions to generate sustainable returns and maintain investor confidence in a competitive and regulated environment.

The personal and professional attributes of organizational leaders that influence decision-making, firm performance, and corporate governance is referred to as CEO characteristics. These may include the following characteristics: financial expertise, gender, reputation, and ownership which shapes the market performance and strategic direction of firms.

The presence of accounting, finance, or related professional knowledge that enhances the ability to interpret financial information and oversee strategic decisions is called CEO financial expertise (Custódio & Metzger, 2014). This expertise is especially critical for risk management and compliance with complex regulatory frameworks in banks. CEO gender is defined as the biological sex of the chief executive, often studied in terms of diversity in leadership. Research suggests that at the top management level, governance practices, firm outcomes and risk-taking can be influenced by gender diversity (Adams & Ferreira, 2009).

2.2. Empirical Review

CEO financial expertise, CEO gender, and dividend payout ratio have attracted considerable scholarly attention in both developed and emerging economies. However, empirical findings remain inconsistent, particularly within the banking sectors of developing countries such as Nigeria. CEO financial expertise is commonly examined through the Upper Echelons Theory, which argues that organizational outcomes are shaped by the background, experience, and competencies of top executives. Studies such as Pamungkas (2017) found that CEOs with advanced financial or accounting education improve investor confidence and market value through better strategic and financial decisions. Similarly, Custódio and Metzger (2014) reported that financially expert CEOs are more effective in managing financial policies and enhancing firm outcomes. In contrast, Dyah Setyaningrum (2019), using evidence from ASEAN countries, found that firms led by CEOs with financial expertise do not consistently perform better than those led by CEOs without such qualifications. Likewise, Ukavwe and Jeroh (2024) reported insignificant effects of CEO financial expertise on firm value among Nigerian quoted firms. These mixed findings suggest that financial expertise alone may not guarantee value creation unless supported by other governance and financial mechanisms.

The relationship between CEO gender and firm value has also generated extensive debate in corporate governance literature. Adams and Ferreira (2009) argued that gender diversity improves governance quality and monitoring effectiveness, thereby enhancing firm outcomes. Khan and Vieito (2013) further found that firms led by female CEOs exhibit stronger performance and better risk management practices. Similarly, Suherman et al. (2023), using Indonesian firms, concluded that female CEOs contribute positively to innovation, competitiveness, and overall firm value. However, Osinfowokan (2022) reported that male CEOs in Nigerian banks are associated with higher profitability due to more aggressive financing and investment decisions. Mohammed et al. (2021) found that CEO gender significantly reduces the likelihood of financial distress in Nigerian deposit money banks, especially when supported by gender-diverse governance structures. Lawrence et al. (2021) also observed that CEO gender negatively influences financial distress likelihood among manufacturing firms. These conflicting findings indicate that the effect of gender on firm value may vary across institutional, cultural, and economic environments.

Dividend payout ratio has equally been identified as an important determinant of firm value and is widely explained using signaling and agency theories. Gordon and Lintner (1956) argued that dividend payments signal financial strength and reduce investor uncertainty, while Bhattacharya (1979) maintained that dividends serve as credible signals of profitability in the presence of information asymmetry. In Nigeria, Adedoyin and Adegbie (2021) found that dividend payout ratio positively influences firm value among listed firms, while Hirhyel et al. (2020) reported that dividend decisions significantly affect the value of listed deposit money banks. Uwuigbe (2013), however, argued that the effect of dividend policy varies depending on industry structure, ownership pattern, and growth opportunities. Despite these studies, limited empirical evidence exists on the moderating role of dividend payout ratio in the relationship between CEO financial expertise, CEO gender, and firm value. Previous studies such as Custódio and Metzger (2014), Adams and Ferreira (2009), and Khan and Vieito (2013) examined CEO attributes and firm value independently without integrating dividend payout as a moderating variable. This represents a significant gap in the literature, particularly within the Nigerian banking sector. Therefore, this study contributes to existing knowledge by integrating dividend payout ratio as a moderating variable in examining the relationship between CEO financial expertise, CEO gender, and firm value of listed deposit money banks in Nigeria between 2014 and 2024.

2.3. Theoretical Review

Agency Theory

Agency Theory, developed by Michael C. Jensen and William H. Meckling in 1976, explains the relationship between shareholders (principals) and managers (agents) within an organization. The theory posits that conflicts often arise because managers may pursue personal interests rather than maximizing shareholders' wealth. In the context of listed deposit money banks in Nigeria, CEO financial expertise and gender can influence how effectively managers align their decisions with shareholders' interests. Financially competent CEOs are expected to make better investment, financing, and risk management decisions, thereby reducing agency conflicts and improving firm value. Similarly, gender diversity in leadership may strengthen monitoring and governance practices, which can enhance transparency and accountability within banks.

Resource-Based View (RBV)

The Resource-Based View (RBV), advanced by Jay Barney (1991), argues that firms achieve sustainable competitive advantage through valuable, rare, inimitable, and non- substitutable resources. Within this framework, CEO characteristics such as financial expertise, managerial competence, experience, and gender diversity are considered strategic intangible resources capable of enhancing organizational performance and value. In the banking sector, CEOs with strong financial expertise may contribute to better strategic planning and efficient resource allocation, while gender-diverse leadership may foster innovation, broader perspectives, and improved decision-making. Therefore, RBV supports the argument that unique executive attributes can influence the value of listed deposit money banks in Nigeria.

Signaling Theory

Signaling Theory, associated with Stephen Ross (1977) and further developed by Sudipto Bhattacharya (1979), explains how managers communicate private information about a firm's financial health and future prospects to investors. According to the theory, dividend payout policy serves as an important signal to the market regarding firm strength, profitability, and stability. Investors often interpret consistent or high dividend payouts as evidence of sound management and strong future performance. In this study, dividend payout ratio moderates the relationship between CEO attributes and bank value by influencing investor perception. Financially expert CEOs and gender- diverse leadership may send stronger positive signals to the market when accompanied by stable dividend policies, thereby enhancing firm value.

Underpinning Theory

The underpinning theory of this study is Agency Theory because it provides the strongest explanation for the relationship between CEO financial expertise, CEO gender, dividend payout ratio, and firm value. The theory directly addresses the conflict between managers and shareholders and explains how effective leadership characteristics and financial policies can reduce agency problems and maximize shareholders' wealth. Since the study focuses on how CEO attributes and dividend payout decisions influence the value of listed deposit money banks, Agency Theory offers the most suitable foundation for understanding how managerial actions affect investor confidence, corporate governance, and overall firm value.

Altogether, these theories provide a strong foundation to understand how financial expertise and gender attributes shape bank value and how dividend payout moderates this relationship.

3. Methodology

The causal-comparative design was adopted for the study. Causal-comparative

design which is also called the Ex-post facto design according to Denga & Ali (1983), the study adopted a causal-comparative (ex-post facto) research design, which involves identifying an existing outcome and tracing back through historical data to determine possible causal factors. The population of the study comprised all fourteen (14) Deposit Money Banks listed on the Nigerian Exchange Group as at 31 December 2024(Appendix A). Using purposive sampling, thirteen (13) banks were selected for the study (Appendix B), while Jaiz Bank Plc was excluded due to incomplete or unavailable financial statements for the study period (2014–2024).
Secondary data were extracted from the published audited annual reports and accounts of the selected banks covering the period 2014–2024. This timeframe captures two major economic recessions in Nigeria (2016 and 2020), making it suitable for examining firm value dynamics. The model was estimated using Panel Least Squares regression technique with the aid of Stata 17. This technique was chosen because it provides greater variability, reduces collinearity, increases degrees of freedom, and allows for the examination of individual bank dynamics over time.

Model Specification

This section discusses and presents the parsimonious model of the study considering the Variables (dependent and independent) and the moderator of the study. The equation is represented as follows:

Direct Effect Model

This model tests the direct relationship between CEO characteristics of financial expertise and gender on firm value (without moderation). The model was derived from previous study by Matta and Beamish (2008).

Direct Model Specification

$$VLE_{it} = \beta_0 + \beta_1 CFE_{it} + \beta_2 CGN_{it} + \mu_{it}$$

Indirect Effect Model (Moderation Model)

The "indirect" effect comes through moderation by dividend payout ratio. This means dividend payout influences how CEO characteristics of financial expertise and gender affect firm value. The study utilized the modified Jones (1995) Model to measure the value of listed deposit money Banks.

Moderated (Indirect) Model Specification

$$VLE_{it} = \beta_0 + \beta_1 CFE_{it} + \beta_2 CGN_{it} + \beta_3 DIV_{it} + \beta_4 (CFE_{it} \text{ x } DIV_{it}) + \beta_5 (CGN_{it} \text{ x } DIV_{it}) + \mu_{it}$$

Where VLE = Bank Value,
CFE = CEO Financial Expertise,
CGN = CEO Gender Diversity,
DIV = Dividend Payout Ratio (Moderating Variable),
$\beta 1 – \beta 5$ = Coefficient of explanatory variables,
βo = Constant,
μ_{it}= Error Term

Variable	Definition	Measurement	Source

Dependent			
Value of Bank (VLB)	Bank Value is the market Performance and financial Worth of DMBs as perceived by investors and stakeholders	Market value of assets divide by replacement cost of the asset	Modified Jones (1995)
Independent			
CEO Financial Expertise (CFE)	CEO with financial background	CEO with finance and/or accounting background is assigned 1; otherwise, 0	Custodio & Metzger, (2014)
CEO Gender Diversity	This is defined as the biological sex of the chief executive, often studied in terms of diversity in leadership	CEO if female is assigned 1, otherwise, 0	Adams & Ferreira, (2009)
Moderator			
Dividend Payout Ratio (DPR)	The fraction of net income a firm pays to its stakeholders	Total amount of dividend divided by earnings per share in a year	Drom & Wright (2010)

Source: Researcher's Compilations, 2026

4. Results and Discussions

This section present, interpret, analyses and discussed the descriptive, correlation and regression result in order to make inference and proffer solution to the problem identified earlier.

Table 2

Descriptive Statistics

Variables	Min	Max	Mean	Std. Dev.	Swilk	Sktest	Obs
VLE	0.52	3.25	1.73	0.673	0.00055	0.0060	143
CFE	0	1	0.72	0.450	0.00000	0.0000	143
CGN	0	1	0.13	0.348	0.13833	0.0000	143
DIV	0.0	0.6	0.13	0.111	0.00000	0.0000	143

Source: Descriptive Statistic Results Using STATA 13

Table 2 presents the descriptive statistics of the study variables. The value of listed deposit money banks (VLE), used as a proxy for bank value, recorded a minimum of 0.52 and a maximum of 3.25, with an average of 1.73 and a standard deviation of 0.67. This suggests that while some banks are relatively low in value, others have considerably higher market valuation, indicating moderate variation across the sampled banks.

With respect to CEO financial expertise (CFE), the mean value of 0.72 implies that about 72 percent of the sampled banks were headed by CEOs with professional or academic backgrounds in finance and accounting, while 28 percent did not possess such expertise. The binary nature of the variable accounts for the standard deviation of 0.45. Similarly, CEO gender (CGN) has a mean of 0.13, indicating that only 13 percent of bank CEOs are female, while 87 percent are male. This clearly reflects the

low level of gender diversity in the leadership of Nigerian banks.
Overall, the descriptive statistics highlight that Nigerian banks are largely led by experienced, male CEOs with financial expertise, while gender diversity remains low and dividend payout ratios are modest.

Table 3
Summary of Robust OLS Regression

Variables	Coeffi	Z-Stat	Prob
Constant	2.571	68.6	0.000
CGN	0.073	1.10	0.276
CFE	-0.052	-0.78	0.436
CGNDIV	-0.722	-3.41	0.001
CFED	0.946	2.46	0.015
IV R_2		0.2581	
F-Statistics		4.70	
Prob.		0.0014	
Hettest		17.18	
Prob.		0.0000	
Testparm (Chi_2)		32.95	
Prob.		0.0000	

Source: Result output from STATA 13

The regression results in Table 3 examine the effect of CEO financial expertise and gender on bank value, with dividend payout ratio acting as a moderating variable. The model reports an R-squared value of 0.2581, indicating that about 25.81% of the variation in bank value is explained by the included variables and their interaction terms. The model is statistically significant overall ($F = 4.70$, $p = 0.0014$), confirming that the explanatory variables jointly influence bank value. Additionally, the constant term is positive and significant, suggesting that other unobserved factors also contribute meaningfully to firm value.

The regression result reveals that CEO gender (CGN) has a positive coefficient of 0.073 with a p-value of 0.276, indicating a positive but statistically insignificant relationship with bank value at the 5% significance level. This implies that an increase in gender diversity at the CEO level leads to only a marginal increase in firm value, but the effect is not strong enough to significantly influence market performance among listed deposit money banks in Nigeria. The finding corroborates the study of Ukavwe and Jeroh (2024), which reported that CEO gender has no significant effect on firm value in Nigerian quoted firms. However, the result contradicts Adams and Ferreira (2009) and Khan and Vieito (2013), who found that female leadership improves governance quality and firm performance. The insignificant result may be attributed to institutional and cultural barriers that limit the strategic influence of female executives in the Nigerian banking sector. From the perspective of the underpinning Agency Theory, the finding suggests that gender diversity alone may not sufficiently reduce agency conflicts or improve shareholder value unless supported by effective governance and strategic financial policies.

Similarly, CEO financial expertise (CFE) shows a negative coefficient of –0.052 with a p-value of 0.436, indicating a negative and statistically insignificant effect on bank value. This suggests that CEO financial expertise, in isolation, does not significantly enhance the value of listed deposit money banks in Nigeria. The negative sign implies that financially expert CEOs may adopt more conservative financial strategies that prioritize long-term stability rather than short- term market valuation. This finding supports the result of Dyah Setyaningrum (2019) and Ukavwe and Jeroh (2024), who reported insignificant relationships between financial expertise and firm value. However, it contradicts Custódio and Metzger (2014), who found that financially knowledgeable CEOs positively influence firm performance and corporate financial policies. In relation to Agency Theory, the result indicates that financial expertise alone may not be sufficient to align management interests with shareholders' wealth maximization objectives, especially in a highly regulated banking environment where decision-making is influenced by external governance structures and regulatory controls.

However, the inclusion of the moderating variable dividend payout ratio reveals more nuanced relationships. The interaction between CEO gender and dividend payout ratio is negative and statistically significant, indicating that higher dividend payouts weaken the positive effect of gender diversity on firm value. This suggests that dividend policies may constrain managerial flexibility, thereby reducing the strategic impact of female leadership on bank performance.

In contrast, the interaction between CEO financial expertise and dividend payout ratio is positive and significant. This implies that dividend payout strengthens the influence of financially skilled CEOs on firm value. When dividend policies align with shareholder expectations, financially expert CEOs are better able to signal stability and profitability to the market, thereby enhancing investor confidence and overall firm value.

Overall, the findings demonstrate that while CEO gender and financial expertise have weak direct effects on bank value, their combined interaction with dividend payout ratio produces significant outcomes. Diagnostic tests further confirm the robustness of the model, despite the presence of heteroskedasticity, which was corrected using robust standard errors. The study highlights the critical role of dividend policy as a moderating mechanism that shapes how leadership attributes translate into firm value in the banking sector.

5. Conclusion and Recommendations

The study examined the effect of CEO financial expertise and gender on bank value, with dividend payout ratio serving as a moderating variable. The findings reveal that CEO gender has a positive but statistically insignificant effect on bank value, suggesting that while gender diversity may contribute slightly, it is not yet a strong determinant of firm performance in the Nigerian banking sector. Similarly, CEO financial expertise shows a negative and insignificant relationship with firm value, indicating that technical financial competence alone does not automatically enhance market performance, possibly due to conservative decision-making approaches that prioritize long-term stability.

Overall, the study concludes that CEO characteristics have weak direct effects on firm value but become more relevant when combined with financial policy variables such as dividend payout. Based on this, it recommends that investors should not base CEO selection on gender but rather on competence, experience, and strategic vision.

Boards are advised not to rely solely on CEOs' financial expertise, while banks should invest in leadership development that promotes both financial competence and gender inclusiveness. Additionally, maintaining an optimal dividend policy is crucial, as it strengthens investor confidence and enhances the impact of leadership attributes on firm value.

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DIGITAL FINANCIAL REFORMS AND CORRUPTION CONTROL IN NIGERIA

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Abstract
This study investigated the effects of the Integrated Personnel and Payroll Information System (IPPIS), Government Integrated Financial Management Information System (GIFMIS), and Public Procurement Reform (PPR) on corruption control (CC). The study adopted a survey research design, with primary data collected through structured questionnaires administered to personnel from selected federal ministries, departments, agencies, anti-corruption institutions, and civil society organizations involved in public financial management and accountability processes. A sample size of 326 respondents was determined from a population of 1,772 using the Taro Yamane formula and selected through stratified sampling technique. Data were analyzed using PLS-SEM involving measurement and structural model assessments. The findings revealed that IPPIS exerted a weak negative and statistically insignificant effect on CC, while PPR also recorded a weak positive and insignificant relationship with CC. Conversely, GIFMIS exhibited a positive and statistically significant relationship with CC challenges, suggesting implementation weaknesses and institutional inefficiencies within the reform process. The study concluded that although digital financial reforms theoretically improve transparency and accountability mechanisms, their effectiveness in controlling corruption within Nigeria's Federal Public Sector remains is not established. The study recommended strict institutional monitoring, improved inter-agency integration, enhanced staff capacity building, and firm enforcement of public financial management regulations to strengthen CC outcomes in Nigeria.

Keywords: Digital financial reforms, corruption control, IPPIS, GIFMIS, PPR, PLS-SEM, Nigeria.

1. Introduction

The growing deployment of digital technologies in public financial administration has significantly transformed governance systems across developing economies. Governments increasingly adopt digital financial reforms not only to strengthen accountability, improve transparency, and enhance operational efficiency, but also to check corruption in the management of public resources. In Nigeria, persistent cases of financial leakages, payroll fraud, procurement irregularities, and weak accountability mechanisms especially within the Federal public sector necessitated the introduction of several digital financial reform initiatives aimed at improving controlling corruption, fiscal discipline and institutional performance.

These reforms include the Integrated Personnel and Payroll Information System (IPPIS), Government Integrated Financial Management Information System (GIFMIS), and Public Procurement Reform (PPR). However, despite these reforms, corruption within the public sector remains alarming. For instance, the Economic and Financial Crimes Commission (EFCC) reported that about N2.9 trillion was lost to contract and procurement fraud between 2018 and 2020, representing nearly 10% of total budgetary allocations during the period (EFCC, 2023). Similarly, the Independent Corrupt Practices and Other Related Offences Commission (ICPC) uncovered duplicate projects valued at N300 billion and N100 billion in the 2021 and 2022 federal budgets respectively, largely linked to weaknesses in procurement and financial management processes (ICPC,2022). In addition, a whistleblower report in 2022 exposed about 54,000 fraudulent entries within the IPPIS platform, further questioning the effectiveness of existing digital reforms in controlling corruption (Ejike, 2022).

Also, the Transparency International continues to rank Nigeria among countries facing severe corruption challenges, with the Nigeria's score declining from 27% in 2012 to 25% in 2023, indicating persistent weaknesses in corruption control (CC) (TI, 2023). Furthermore, in 2022, the EFCC recovered over N30 billion and 15 properties allegedly linked to the manipulation of the GIFMIS and IPPIS platforms by the former Accountant General of the Federation (EFCC, 2022). These incidents suggest that although digital financial reforms theoretically improve administrative processes, institutional weaknesses, poor enforcement mechanisms, and governance deficiencies continue to undermine their effectiveness in controlling corruption.

Given the strategic role of digital financial reforms in strengthening accountability and reducing opportunities for financial misconduct, there is growing need to empirically assess the extent to which these reforms contribute to CC in Nigeria's Federal public sector. While previous studies have largely focused on isolated reforms or conceptual discussions, limited empirical studies have examined the combined effects of digital financial reforms on CC using advanced multivariate analytical techniques such as Partial Least Squares Structural Equation Modelling (PLS-SEM). This study therefore investigates the effect of digital financial reforms on CC in Nigeria's Federal public sector using PLS-SEM analysis.

The broad objective of this study is to examine the effect of digital financial reforms on CC in Nigeria's Federal public sector. The specific objectives are to:
i. examine the effect of IPPIS on CC in Nigeria's Federal public sector;
ii. evaluate the effect of GIFMIS on CC in Nigeria's Federal public sector;
iii. assess the effect of PPR on CC in Nigeria's Federal public sector.

From the objectives of the study, the following null hypotheses are put forward and tested.
$H0_1$: IPPIS has no significant effect on CC in Nigeria's Federal public sector.
$H0_2$: GIFMIS has no significant effect on CC in Nigeria's Federal public sector.
$H0_3$: PPR has no significant effect on CC in Nigeria's Federal public sector.

2. Literature Review

2.1. Conceptual review

Digital financial reforms refer to the application of information and communication technologies (ICT) in the management of public financial processes to improve efficiency, transparency, accountability, and fiscal discipline within government institutions (International Monetary Fund, 2019; World Bank, 2023). These reforms involve the automation and integration of financial management operations such as payroll administration, procurement processes, budgeting, expenditure control, financial reporting, and revenue management, typically implemented through GIFMIS and similar platforms (Ojeifo & IleSanmi, 2015; Essien, 2026; World Bank, 2017). Digital financial reforms are considered important instruments for CC because they reduce human discretion in financial transactions, improve transparency in public expenditure administration, and facilitate real-time monitoring of government financial activities (Bertot et al., 2010; Heeks, 1998). For instance, IPPIS assists in eliminating ghost worker practices and payroll fraud through centralized payroll administration, while GIFMIS enhances financial reporting accuracy and expenditure monitoring (Enakirerhi & Temile, 2017; Ogbonna & Ojeaburu, 2015). Similarly, PPR improves transparency and competitiveness in government contracting processes through standardized procurement procedures and due process mechanisms (Aminu, 2019; Ezeh, 2016).

IPPIS was introduced to address persistent payroll fraud, eliminate ghost workers, and establish a centralized personnel database within the federal public service. The reform digitalized payroll administration and enhanced payroll accountability through automated salary processing and personnel verification mechanisms (Enakirerhi & Temile, 2017; Ogbonna & Friday, 2015). Although the system has contributed to significant savings and improved payroll transparency, implementation challenges such as salary delays, institutional resistance, and lack of integration with other financial systems remain major concerns (Onukogu, 2010).

Similarly, PPR was introduced through the Public Procurement Act of 2007 to strengthen transparency, competitiveness, accountability, and value-for-money in government procurement processes. The reform sought to harmonize procurement procedures, reduce contract-related corruption, and establish due process mechanisms in public expenditure administration (Aminu, 2019; BPP, 2018). The introduction of competitive bidding procedures and mandatory publication of contract awards represented major institutional efforts toward reducing procurement fraud and improving accountability within the public sector (Ezeh, 2016). However, weak enforcement mechanisms, political interference, and institutional capacity limitations continue to affect the effectiveness of the reform (Kasim, 2016; Obanda, 2010).

In addition, GIFMIS represents another major component of Nigeria's digital financial reform initiatives. The system was introduced to strengthen financial reporting, budgetary administration, expenditure monitoring, and cash management through an integrated electronic financial management platform. GIFMIS facilitates centralized monitoring of government revenues and expenditures and enhances timely access to financial information for effective decision-making (Olurankinse & Oloruntoba, 2018; Ogbonna & Ojeaburu, 2015). The reform has reportedly improved budgetary control, payroll administration, and financial reporting within the public sector (Adeyemi, 2018). Nevertheless, challenges relating to inadequate information technology infrastructure, shortage of skilled personnel, and system integration problems continue to constrain its full implementation (Abdulraheem, 2016; Ibrahim, 2018).

The concept of corruption generally refers to the abuse of public office or entrusted authority for private gain (World Bank, 1997). Corruption manifests in various forms including bribery, embezzlement, fraud, abuse of office, procurement manipulation, payroll fraud, diversion of public funds, and other unethical practices that undermine institutional efficiency and public accountability (Rose-Ackerman, 1999; Premchand, 1999).

Corruption control (CC) refers to the institutional, legal, administrative, and technological mechanisms established to prevent, detect, monitor, and reduce corrupt practices within public institutions (Klitgaard, 1998). Effective CC systems are expected to strengthen transparency, accountability, compliance, and ethical conduct in public administration (Bertot et al., 2010). In late 1990s and early 2000s, governments across the world increasingly adopted digital governance systems and public financial management reforms as strategic tools for controlling corruption and improving public sector efficiency (Heeks, 1998; Bertot et al., 2010).

The adoption of digital financial reforms is therefore widely regarded as an important institutional strategy for improving public sector accountability, reducing opportunities for corruption, and enhancing governance outcomes. However, the effectiveness of these reforms largely depends on the quality of implementation, institutional commitment, regulatory enforcement, and technological integration within the public sector environment.

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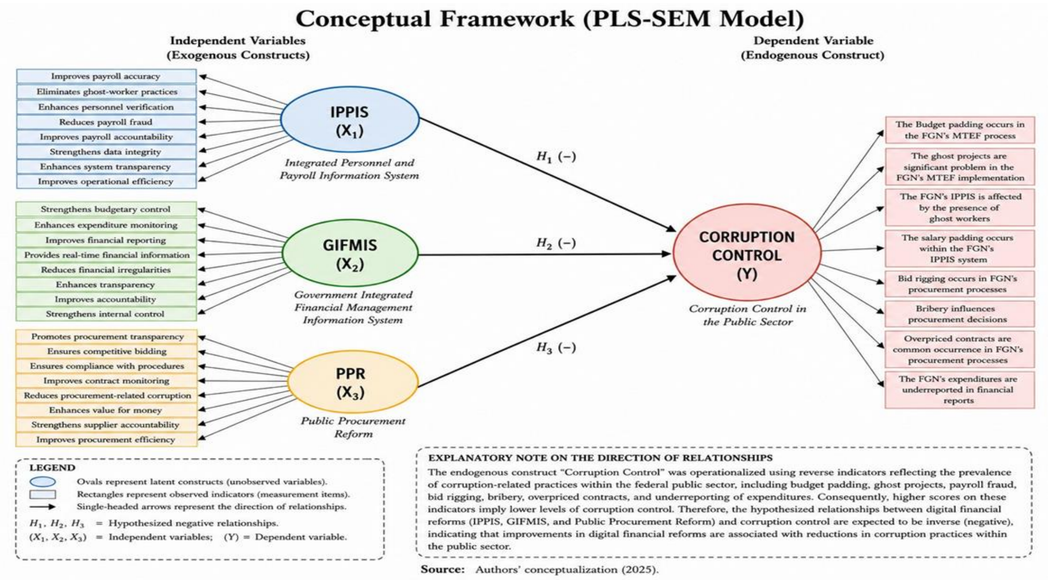

2.2. Theoretical Framework

This study is anchored on the Principal-Agent Theory. The theory provides relevant explanations regarding the relationship between digital financial reforms and corruption control within the public sector. The Principal-Agent Theory was developed by Jensen and Meckling (1976) to explain the relationship between principals, who delegate authority, and agents, who are entrusted with responsibilities on behalf of the principals. Within the public sector context, citizens and government authorities act as principals, while public officials and administrators function as agents responsible for managing public resources and implementing government policies.

The theory assumes that agents may pursue personal interests at the expense of organizational or public interests due to information asymmetry, weak monitoring mechanisms, and lack of accountability structures (Jensen & Meckling, 1976). This situation creates opportunities for corruption, abuse of office, financial mismanagement, and other unethical practices within public institutions.

Digital financial reforms such as IPPIS, GIFMIS, and PPR are therefore designed to minimize information asymmetry, strengthen monitoring mechanisms, improve transparency, and reduce discretionary powers in financial administration. For instance, IPPIS reduces opportunities for payroll fraud through centralized payroll verification systems, while GIFMIS enhances expenditure monitoring and financial reporting. Similarly, PPR improves transparency and accountability in government contracting processes through standardized procurement procedures and due process mechanisms.

The relevance of Principal-Agent Theory to this study lies in its ability to explain how digital financial reforms can reduce agency problems and strengthen accountability within the public sector by improving transparency, monitoring, and control systems.

2.3. Empirical Review

Ikpe-Agha et al. (2025) examined the impact of financial management policies, including TSA, IPPIS, and GIFMIS, on fraud detection in Nigeria's public sector. The findings indicated that TSA had the strongest positive effect on fraud detection, while IPPIS moderately reduced payroll fraud. Conversely, GIFMIS showed limited effectiveness due to weak implementation and institutional inefficiencies. Furthermore, Egbara and Ofodu (2025) assessed the effectiveness of IPPIS in curbing payroll fraud within Nigeria's public service. The study revealed that IPPIS significantly reduced fraudulent salary practices and improved payroll transparency; however, institutional resistance, weak ICT infrastructure, and poor inter-agency coordination limited its effectiveness.

Similarly, Jejeniwa and Adetoro (2026) examined Nigeria's persistent vulnerability to fraud in public financial management despite extensive digitalization initiatives such as the GIFMIS, TSA and IPPIS. The study found that while digitalization improved efficiency, governance gaps undermined fraud resilience. Again, Eze and Ugada (2025) investigated the role of IPPIS in fraud control within the federal public service in Anambra State. The study found that IPPIS substantially reduced ghost workers and multiple salary payments, thereby improving accountability and transparency in payroll administration, despite challenges relating to ICT deficiencies and data inconsistencies.

In the area of procurement administration, Aminu (2019) examined the impact of PPR on transparency and accountability in Nigeria's public sector. The study found that the implementation of the Public Procurement Act improved competitive bidding processes, strengthened procurement monitoring, and reduced procurement-related corruption in public institutions. Ezeh (2016) also observed that PPR contributed to improved compliance with procurement procedures and enhanced value-for-money in public expenditure administration. However, weak enforcement mechanisms, political interference, and non-compliance with procurement regulations remained major implementation challenges.

Moreso, Ukomadu and Ogundare (2026) examined the adoption of e-governance in salary administration within the Kogi State civil service, with emphasis on transparency and efficiency. The study found that IPPIS and TSA improved salary administration through reduction of ghost workers and timely salary payments, although poor ICT infrastructure, corruption, and resistance to change constrained effective implementation. Beyond Nigeria, Bertot et al. (2010) examined the role of information and communication technologies in promoting transparency and reducing corruption in public administration. The study concluded that digital governance systems improve access to information, strengthen accountability mechanisms, and reduce opportunities for corrupt practices through enhanced monitoring and transparency. Similarly, Heeks (1998) argued that electronic governance systems contribute significantly to public sector accountability by reducing human discretion and improving administrative efficiency.

Despite the growing body of empirical literature on financial management reforms and corruption control, most previous studies focused on individual reform initiatives rather than examining the combined effects of IPPIS, GIFMIS, and PPR on corruption control. Furthermore, many studies adopted descriptive or conventional regression approaches with limited application of advanced multivariate analytical techniques such as PLS-SEM. This creates a methodological and empirical gap

which this study seeks to address by providing a comprehensive assessment of the effect of digital financial reforms on corruption control in Nigeria's public sector using PLS-SEM analysis.

3. Methodology

The study employed a survey research approach through the administration of structured questionnaires to selected respondents within federal ministries, departments, and agencies involved in the implementation and operation of the identified digital financial reforms.

The study further utilized PLS-SEM as the technique for data analysis. PLS-SEM was adopted because it is suitable for analyzing complex relationships among latent constructs and for simultaneously assessing measurement and structural models (Hair et al., 2019).

The population of the study comprised personnel from selected federal ministries, departments, and agencies associated with the implementation and administration of digital financial reforms in Nigeria. In addition to the government agencies, the population encompasses officials from the ICPC and the EFCC that engage in corruption cases and investigations. Finally, the study incorporates CSOs that focused on transparency, accountability, and anti-corruption efforts. These groups play a crucial role in monitoring and advocating for reforms, and their perspectives can provide valuable insights into the public's perception and assessment of the digital financial reforms and their effectiveness in curbing corruption.

The study's population consists of 1,772 respondents (Table 1). To determine the appropriate sample size for the research, this study utilized the Taro Yamane formula, a widely adopted statistical technique for calculating the sample size. The study set the margin of error at 5% (0.05) and the confidence level at 95%. Employing the Taro Yamane formula, the study calculated the sample size for the study to be 326 (Table 1). Hence, the Taro Yamane formula is given as:

$$\mathrm{n} = \frac{\mathrm{N}}{1+N(\mathrm{e}^2)}$$

Where n = Sample size; N = Population of the study (1,772); e = Tolerable error (5%).

$$\mathrm{n} = \frac{1772}{1+1772(0.05^2)},\ \mathrm{n} = \frac{1772}{1+4.43},\ \mathrm{n} = \frac{1772}{5.43},\ \mathrm{n} = 326$$

Moreover, a stratified sampling technique was used to identify the respondents in each category. Thus, the respondents were selected from the sampled federal government ministries, departments, and agencies. However, to determine the actual number of respondents in the sampled federal government MDAs and CSOs, this study used proportional allocation sample formula, and the results are reported in Table 1.

Table 1: Population and Sample size

S/N	Organization	Population	Sample Size
1	Budget, Account, Expenditure control, Treasury officials of the FMF	1,053	194
2	Officials of the AuGF	350	65
3	Officials of the BPP	105	19
4	Officials of the EFCC & ICPC	110	20
5	Officials of CSOs-Transparency and Anti-Corruption NGOs	154	28
6	Total	1,772	326

Source: Author's Computation, 2025

Model Specification and Method of Data Analysis

The study specified CC as a function of digital financial reforms represented by IPPIS, GIFMIS, and PPR. The functional relationship is expressed as:

$Y = f(X_1, X_2, X_3)$.

The econometric form of the model is specified as:

$CC = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \mu$

Where:
Y= Corruption Control (CC)
X_1 =Integrated Personnel and Payroll Information System (IPPIS)
X_2 =Government Integrated Financial Management Information System (GIFMIS)
X_3 = Public Procurement Reform (PPR)
β_0 = Constant term
$\beta_1 - \beta_3$ = Regression coefficients
μ = Error term

To ensure the validity and reliability of the research instrument, the study conducted validity and reliability assessments prior to the main analysis, the study employed PLS-SEM for data analysis. The analysis was conducted in two stages comprising measurement model assessment and structural model assessment. The measurement model assessment involved the evaluation of reliability, convergent validity, and discriminant validity of the constructs, while the structural model assessment focused on path coefficients, coefficient of determination (R^2),

predictive relevance, and hypotheses testing to determine the effects of digital financial reforms on CC in Nigeria's Federal public sector.

Table 2: Definition and Measurement of the Variables of the Study

Variable	Label	Measurement	Prior Studies
Corruption Control	CC	Measured using survey-based perception ratings on a 5-point Likert scale	UNODC (2023); Dell'Anno (2020)
Integrated Payroll and Personnel Information System	IPPIS	Perceived effectiveness of IPPIS, on a 5-point Likert scale	Ike et al. (2023); Paul & Folorunsho (2020)
Public Procurement Reform	PPR	Assessed through respondents' perceptions on a 5-point Likert scale.	Fazekas et al. (2016); Hessami (2014)
Government Integrated Financial Management Information System	GIF MI S	Measured by respondents' ratings on 5-point Likert scale	Ibrahim et al. (2022); Ogunyemi (2019);

Source: Researchers' initiative, 2025

4. Results and Discussions

This section assesses both measurement and structural models that are the established reporting conventions for PLS-SEM, as recommended by Hair et al. (2019).

Assessment of Measurement model

Internal consistency reliability was evaluated using Cronbach's Alpha and Composite Reliability values. The results indicated that all constructs recorded reliability values above the minimum acceptable threshold of 0.70, suggesting adequate internal consistency among the measurement items. Convergent validity was assessed using Average Variance Extracted (AVE) and factor loadings. The AVE values for all constructs exceeded the recommended threshold of 0.50, indicating that the constructs adequately explained the variance of their respective indicators. Similarly, the factor loadings of the measurement items were within acceptable limits, confirming satisfactory convergent validity of the constructs. Discriminant validity was evaluated to determine the distinctiveness of the study constructs. The results confirmed that the constructs were empirically distinct from one another, indicating the absence of multicollinearity problems among the latent variables. This suggests that the measurement model was statistically adequate for structural model analysis.

Assessment of structural model and test of hypotheses

The structural model assessment examined the relationships between digital financial reforms and corruption control in Nigeria's Federal public sector. The analysis focused on path coefficients, coefficient of determination (R^2) and hypotheses testing as depicted from Tables 3 and 4 and figure 1.

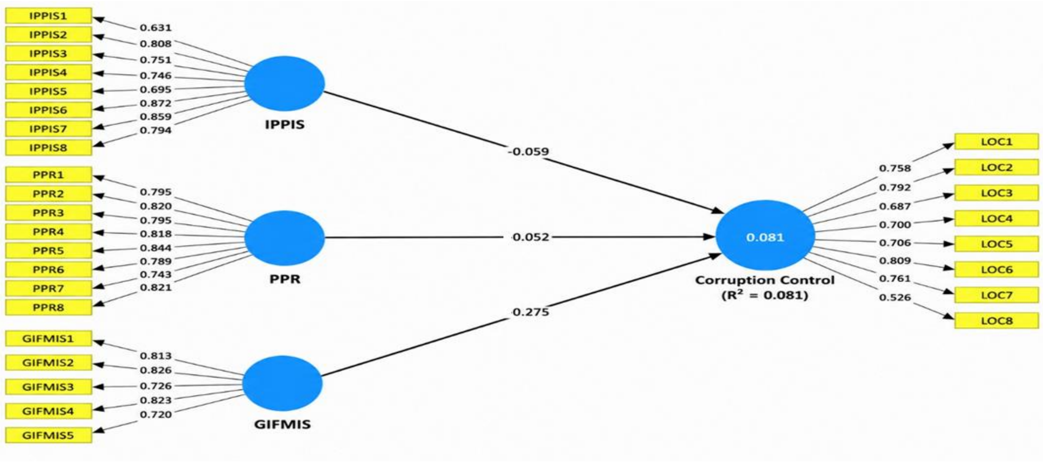

Figure 1: Structural Model

In this study, the R^2 was employed to assess the explanatory power of the model, and the result is reported in Table 3:

Table 3: Explanatory Power of the model

Variable	R-square	R-square adjusted
CC	0.081	0.072

Source: Author's Computation from Smart PLS output, 2025

Table 3 presents the R-squared value for the variable of the CC in Nigeria Federal context which is recorded at 0.081. This indicates that only 8.1% of the variance in CC can be explained by the independent variables (IPPIS, PPR and GIFMIS) included in the model. The low R-squared value suggests that the model has limited explanatory power regarding the impact of digital financial reform on CC in Nigeria's Federal Public Sector. There are several reasons that contribute to this low figure: first, Corruption is inherently a multifaceted issue influenced by various factors beyond just digital financial management reforms. It encompasses political, social, economic, and cultural dimensions that were not captured by the model's variables. The narrow focus on specific reforms overlooks broader systemic issues that also drive corrupt practices. Lastly, the factors outside the scope of the study, such as political instability, economic conditions, and public attitudes towards corruption, also play significant roles in influencing CC. These external influences have not been accounted for in the model, leading to under-exploration of the effects of digital financial reforms.

Table 4: Path coefficients and test results of the hypotheses

Null Hypothesis (HO)	**Path Coefficient (β)**	**P-Value**	**Effect on CC**	**Decision**
$H0_1$: IPPIS has no significant effect on CC in Nigeria Federal Public Sector.	-0.059	0.706	Improve CC (insig.)	Fail to Reject H1
$H0_2$: PPR has no significant effect on CC in Nigeria Federal Public Sector.	0.052	0.657	Decreases CC (insig.)	Fail to Reject H2
$H0_3$: GIFMIS has no significant effect on CC in Nigeria Federal Public Sector.	0.275	0.001	Decreases CC (sig.)	Reject H3, Accept H3

Source: Author's computation from Smart PLS output, 2025.

The hypothesis testing results reveal that the implementation of the IPPIS has a weak negative and statistically insignificant effect on CC (β = -0.059; p = 0.706). This suggests that although IPPIS marginally supports CC within Nigeria's Federal Public Sector, the effect is not substantial enough to produce measurable institutional impact. Consequently, the null hypothesis was not rejected. The finding corroborates earlier studies by Ikpe-Agha et al. (2025), Friday and Ameh (2022), and Ocholi and Ocholi (2021). However, the result contrasts with the findings of Egbara and Ofodu (2025), Solomon and Fidelis (2023), and Bappi (2023), and Adegbile et al. (2021), who documented significant digital financial reforms effect.

Similarly, PPR recorded a weak positive but statistically insignificant relationship with CC (β = 0.052; p = 0.657). The result indicates that the PPR have not generated a meaningful reduction in corrupt practices within the Federal Public Sector. Hence, the null hypothesis was also not rejected. This finding is broadly consistent with the studies of Otieno and Awuor (2023), and Olusegun and Ikenwa (2020), which found limited or insignificant effects of PPR on corruption reduction. Nonetheless, the result differs from Augustine et al. (2023) and Ortiz et al. (2023), who reported that PPR significantly strengthened CC mechanisms.

In contrast, GIFMIS exhibited a positive and statistically significant relationship with CC challenges (β = 0.275; p = 0.001). While the null hypothesis was rejected, the positive coefficient implies that GIFMIS implementation has not effectively translated into the expected reduction in corruption within Nigeria's Federal Public Sector. This outcome aligns with the findings of Izang et al. (2024), Triwibowo (2020), and Olurankinse and Oloruntoba (2018), who also reported significant relationships between GIFMIS and corruption-related outcomes. However, it contradicts the studies of Lewis and Hendrawan (2020) and Enofe et al. (2017), which found no significant association between GIFMIS adoption and corruption reduction.

Ikpe-Agha et al. (2025) examined the impact of financial management policies, including TSA, IPPIS, and GIFMIS, on fraud detection in Nigeria's public sector. The findings indicated that TSA had the strongest positive effect on fraud detection, while IPPIS moderately reduced payroll fraud. Conversely, GIFMIS showed limited effectiveness due to weak implementation and institutional inefficiencies. Furthermore, Egbara and Ofodu (2025) assessed the effectiveness of IPPIS in curbing payroll fraud within Nigeria's public service. The study revealed that IPPIS significantly reduced fraudulent salary practices and improved payroll transparency; however, institutional resistance, weak ICT infrastructure, and poor inter-agency coordination limited its effectiveness.

Similarly, Jejeniwa and Adetoro (2026) examined Nigeria's persistent vulnerability to fraud in public financial management despite extensive digitalization initiatives such as the GIFMIS, TSA and IPPIS. The study found that while digitalization improved efficiency, governance gaps undermined fraud resilience. Again, Eze and Ugada (2025) investigated the role of IPPIS in fraud control within the federal public service in Anambra State. The study found that IPPIS substantially reduced ghost workers and multiple salary payments, thereby improving accountability and transparency in payroll administration, despite challenges relating to ICT deficiencies and data inconsistencies.

In the area of procurement administration, Aminu (2019) examined the impact of PPR on transparency and accountability in Nigeria's public sector. The study found that the implementation of the Public Procurement Act improved competitive bidding processes, strengthened procurement monitoring, and reduced procurement-related corruption in public institutions. Ezeh (2016) also observed that PPR contributed to improved compliance with procurement procedures and enhanced value-for-money in public expenditure administration. However, weak enforcement mechanisms, political interference, and non-compliance with procurement regulations remained major implementation challenges.

Moreso, Ukomadu and Ogundare (2026) examined the adoption of e-governance in salary administration within the Kogi State civil service, with emphasis on transparency and efficiency. The study found that IPPIS and TSA improved salary administration through reduction of ghost workers and timely salary payments, although poor ICT infrastructure, corruption, and resistance to change constrained effective implementation. Beyond Nigeria, Bertot et al. (2010) examined the role of information and communication technologies in promoting transparency and reducing corruption in public administration. The study concluded that digital governance systems improve access to information, strengthen accountability mechanisms, and reduce opportunities for corrupt practices through enhanced monitoring and transparency. Similarly, Heeks (1998) argued that electronic governance systems contribute significantly to public sector accountability by reducing human discretion and improving administrative efficiency.

5. Conclusion and Recommendations

This study concludes that the implementation of digital financial reforms in Nigeria's Federal Public Sector has produced limited success in strengthening CC. Furthermore, the study concludes that the mere adoption of technology-driven financial reforms may not automatically translate into effective corruption reduction without adequate institutional support and enforcement mechanisms.

Based on the findings of the study, the following recommendations are made:

1. The Federal Government should strengthen institutional enforcement and compliance mechanisms guiding the implementation of IPPIS, GIFMIS, and PPR to ensure that the systems achieve their intended anti-corruption objectives.
2. Relevant oversight agencies should improve monitoring, auditing, and real-time evaluation of digital financial systems to detect and prevent loopholes that may facilitate corrupt practices within public institutions.
3. Government should enhance the integration and interoperability of digital financial management platforms to promote transparency, data accuracy, accountability, and effective tracking of public funds across ministries, departments, and agencies.
4. Continuous capacity building and technical training should be provided for public sector personnel to improve operational efficiency, ethical compliance, and effective utilization of digital financial reform systems.
5. Future reform initiatives should focus not only on technology adoption but also on institutional culture, leadership commitment, and governance quality to ensure sustainable CC outcomes.

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CORPORATE BOARD ATTRIBUTES AND ENVIRONMENTAL REPORTING QUALITY OF LISTED OIL AND GAS COMPANIES IN NIGERIA

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Abstract
This study investigates the effect of board attributes on environmental reporting quality in listed Nigerian oil and gas firms over the period of 2015–2024. The study used secondary data extracted from the audited annual reports and accounts of seven sampled companies from total population of eleven listed oil and gas firms on the Nigeria exchange group. The study employed explanatory research design and after running the OLS regression, a robustness test was conducted to test the validity of statistical inferences, a multiple regression was also employed. The study Uses Global Reporting Initiative (GRI) Standard 13 to measure environmental reporting quality. Board attribute is proxied by board independence, board size, board gender diversity and board meetings. The findings reveal that board independence, board size, and board gender diversity have statistically significant positive effects on environmental reporting quality. Conversely, board meeting frequency shows a positive but statistically insignificant relationship. These results demonstrate that board composition and diversity are more consequential for environmental transparency than the sheer number of board meetings. The study recommended that the management of the companies should strengthen board independence, promote gender diversity through a "comply-or-explain" framework, and shifting regulatory focus from meeting quantity to agenda quality.

Keywords: Environmental reporting, board attributes, GRI 13, corporate governance, Nigeria

1. Introduction

Environmental degradation in Nigeria's oil and gas sector characterised by oil spills, gas flaring, and toxic effluent discharge has escalated from a local ecological crisis into a critical corporate accountability challenge. In response, stakeholders increasingly demand transparent environmental disclosures. The Board of Directors is theoretically positioned to oversee these disclosures, yet the precise configuration of board attributes that drives effective environmental reporting in the Nigerian oil and gas industry remains poorly understood. Existing Nigerian studies have examined board attributes in a fragmented manner, selecting isolated variables such as board size or independence without simultaneously considering the quartet of board independence, board size, gender diversity, and board meetings (Okoye et al., 2023; Orumwense & Osa-Izeko, 2023; Issa et al., 2021). Moreover, measurement of environmental reporting has relied on generic indices or aggregated ESG scores, with no prior study anchoring the disclosure instrument in the GRI Standard 13, which provides sector-specific indicators for spills, flaring, decommissioning, and community impact (GRI, 2022). Finally, the majority of studies employ short panels of two to five years that end before recent Nigerian regulatory shifts such as the SEC Sustainability Reporting Guidelines (2018), NGX Sustainability Disclosure Guidelines (2021), and IFRS S1/S2 requirements (2023), thus missing the dynamic regulatory evolution (Tonye & Boubai, 2025; Jibril, 2025).

This study addresses these gaps by simultaneously examining how board independence, board size, board gender diversity, and board meetings influence environmental reporting quality in listed Nigerian oil and gas firms, using a GRI 13-aligned disclosure index and a ten-year panel (2015–2024). The research questions are: (i) What is the impact of board independence on environmental reporting? (ii) What is the impact of board size? (iii) How does board gender diversity affect reporting? (iv) What is the impact of board meetings? The remainder of the paper is structured as follows. Section 2 reviews the theoretical and empirical literature and develops the hypotheses. Section 3 describes the methodology. Section 4 presents and discusses the results. Section 5 concludes with implications, recommendations, and directions for future research.

2. Literature Review and Hypotheses Development

2.1 Hypotheses Development

Board Independence

Independent directors, free from managerial influence, are better positioned to demand verifiable environmental data and challenge greenwashing. Prior studies in Nigeria (Okoye et al., 2023; Ukolobi et al., 2023) and internationally (Alotaibi et al., 2024; Endo, 2025) find a positive association between board independence and environmental disclosure. We hypothesize:

***H_1*:** Board independence has a significant positive impact on environmental reporting quality in listed Nigerian oil and gas firms.

Board Size

Larger boards provide a wider pool of expertise and diverse perspectives necessary for complex environmental decisions. Empirical evidence from the energy sector (Nuhu & Alam, 2024; Ed-Dafali et al., 2025) supports a positive relationship, though some studies find non-linear effects (Biju, 2025). In the Nigerian oil and gas context, a larger board may serve as a "resource bank" for compliance. We hypothesize:

***H_2*:** Board size has a significant positive impact on environmental reporting quality.

Board Gender Diversity

Female directors are often associated with greater sensitivity to social and environmental responsibility. They broaden the board's cognitive resources and ensure community concerns are addressed (Gavana et al., 2025; García-Sánchez et al., 2025). In the Niger Delta, they may foster a more relational approach to transparency. We hypothesize:

***H*3: **Board gender diversity has a significant positive impact on environmental reporting quality.

Board Meetings

Meeting frequency is a proxy for board diligence; more frequent meetings provide opportunities to scrutinize environmental performance. However, evidence is mixed—some studies find a positive effect (Bedi & Singh, 2025), while others report insignificant or negative effects (Ladini et al., 2024; Sirajo et al., 2025). In Nigeria's oil and gas sector, meeting quantity may not translate to robust environmental oversight if agendas are dominated by financial matters. We hypothesise:

***H*4: **Board meeting frequency has a significant positive impact on environmental reporting quality.

2.2 Theoretical Framework

The study is anchored in three complementary theories. *Agency Theory* (Jensen & Meckling, 1976) posits that the separation of ownership and control creates information asymmetry; managers may conceal negative environmental data. The board acts as a monitoring mechanism, with independence, size, and meeting frequency serving as proxies for vigilance. *Stakeholder Theory* (Freeman, 1984) extends accountability beyond shareholders to include communities, regulators, and environmental groups, emphasizing the board's role in balancing diverse interests. *Legitimacy Theory* (Suchman, 1995) argues that firms must maintain a social license to operate; environmental reporting is a strategic tool to bridge "legitimacy gaps" caused by ecological harm, particularly relevant in the environmentally scarred Niger Delta.

3. Methodology

The population comprises the 11 oil and gas firms listed on the Nigerian Exchange Group (NGX) as of 31 December 2024. Applying a census approach and excluding four firms delisted during the study period, the final sample consists of seven firms, yielding 70 firm-year observations (2015–2024). Data were collected from audited annual reports and accounts.

Variable Measurement.

Environmental Reporting Quality (ENVD): An unweighted disclosure index based on 42 items from the GRI 13: Oil and Gas Sector Standard (2022). Each item is coded 1 if disclosed, 0 otherwise, with the score expressed as the ratio of disclosed items to total possible items as used by Terzungwe, et al. (2022), Shuaibu et al. (2023).

Board Independence (BOID): Proportion of independent non-executive directors to total board size (Adekunle et al., 2024; Jouirou & Chenguel, 2014).

Board Size (BOSI): Total number of directors on the bord (Eguavoen et al., 2023).

Board Gender Diversity (BOGD): Measured by the presence and the number of female directors in the boardroom (Adekunle et al., 2024; Ekadah & Kiweu, 2012).

Board Meetings (BOMT): Board meeting is the number or frequency of meetings by board members. It is the number of formal board meetings held in the financial year. (Barros & Sarmento, 2020)

Firm Size (FSIZE): The natural log of total assets of a sampled firm (Khan et al., 2022).

Firm Age (FAGE): The age of a firm from date of listing (Kajola et al., 2020).

Model Specification

The panel regression model adapted from Okoye et al. (2023) and Ukolobi et al. (2023) is:
$ENVDit = \alpha + \beta_1 BOIDit + \beta_2 BOSIit + \beta_3 BOGDit + \beta_4 BOMTit + \beta_5 FSIZEit + \beta_6 FAGEit + \varepsilon it$
Diagnostic tests included Variance Inflation Factor (VIF) for multicollinearity, Breusch-Pagan/Cook-Weisberg test for heteroskedasticity, and Hausman test for model selection (failed to reject random effects, but LM test favored pooled OLS). Consequently, OLS with robust standard errors was employed.

4. Results and Discussion

Table 1 shows the mean environmental reporting score is 0.545 (54.5%), indicating moderate disclosure levels. Board independence averages 48.3%, close to the regulatory minimum; board size averages 9.4 directors; female directors average 1.23 per board (range 0–3); and meetings average 5.3 per year (range 3–10). The data evidence sufficient variation for regression analysis.

Table 1: Descriptive Statistics (N = 70)

Variable	Mean	Std. Dev.	Minimum	Maximum
ENVD	0.545	0.129	0.232	0.769
BOID	0.483	0.117	0.310	0.680
BOSI	9.429	1.528	7	13
BOGD	1.228	0.935	0	3
BOMT	5.271	1.752	3	10
FSIZE	19.534	1.733	17.22	23.00
FAGE	41.357	13.739	10	54

Soure: Stata output 2026

4.2 Regression Results

The model is jointly significant (Wald $\chi^2 = 54.29$, $p = 0.000$), and the R-squared of 0.454 indicates that the variables explain 45.4% of the variance in environmental reporting. This is comparable to prior Nigerian studies (Okoye et al., 2023: R^2=0.41; Ukolobi et al., 2023: R^2=0.39) and confirms the model's adequacy.

Table 2: Robust OLS Regression Results (Dependent Variable: ENVD)

Variable	Coefficient	Robust Std. Error	t-Statistic	p-Value
BOID	0.535	0.149	3.59	0.000
BOSI	0.102	0.044	2.33	0.020
BOGD	0.396	0.134	2.94	0.003
BOMT	0.090	0.052	1.73	0.083
FSIZE	-0.003	0.0016	-1.86	0.068
FAGE	0.348	0.182	1.91	0.061
Constant	-1.593	0.503	-3.16	0.002
R^2	0.4538			
Wald χ^2	54.29	(p = 0.000)		

Soure: Stata output 2026

4.2.1 Board Independence (H1)

The coefficient of BOID is 0.535 ($p < 0.001$), supporting H1. This implies that a one-unit increase in the proportion of independent directors is associated with a 0.535-unit rise in environmental reporting score. Independent directors appear to constrain managerial opportunism and demand greater transparency, consistent with Agency Theory. The finding aligns with Okoye et al. (2023), Issa et al. (2021), and Alotaibi et al. (2024), but contrasts with Ikhu-omoregbe and Ugbogbo (2022).

4.2.2 Board Size (H2)

Board size exhibits a positive significant effect ($\beta = 0.102$, $p = 0.020$), supporting H2. Larger boards bring more expertise and variety of perspectives, which aids in navigating complex GRI 13 reporting requirements. This supports the Stakeholder Theory view of boards as resource banks. The result corroborates Nuhu and Alam (2024) and Ed-Dafali et al. (2025), but diverges from Biju (2025), where non-linear effects were noted.

4.2.3 Board Gender Diversity (H3)

Gender diversity is positively and significantly associated with environmental reporting ($\beta = 0.396$, $p = 0.003$). An increase of one female director is associated with a 0.396 improvement in the disclosure index. This finding is anchored in Legitimacy Theory: female directors enhance sensitivity to community and social contract concerns, especially in the Niger Delta context. The result supports the critical mass argument and aligns with Gavana et al. (2025), García-Sánchez et al. (2025), and Al-Shaer and Zaman (2024).

4.2.4 Board Meetings (H4)

Board meetings show a positive but insignificant coefficient ($\beta = 0.090$, $p = 0.083$); H4 is not supported. The result suggests that the sheer number of meetings does not automatically translate into improved environmental reporting. If environmental issues are not prioritised in board agendas, additional meetings will not enhance disclosure quality. This finding echoes the insignificance reported by Sirajo et al. (2025) and the mixed results in prior literature.

4.3 Discussion

Collectively, the findings suggest that board composition who sits on the board matters more than *how often* the board meets. Independence and gender diversity are particularly powerful drivers, reflecting both monitoring and stakeholder responsiveness mechanisms. Board meetings become effective only when paired with substantive environmental agenda items. The model's moderate explanatory power ($R^2 = 0.454$) indicates that other factors, such as regulatory enforcement, media attention, and ownership structure, also shape reporting, but board attributes are a significant component.

5. Conclusion and Recommendations

This study set out to clarify which board attributes drive environmental reporting quality in the Nigerian oil and gas sector. Using a GRI 13-based measurement and a 10-year panel, we find that board independence, board size, and board gender diversity significantly enhance reporting, while board meeting frequency does not. The study contributes to the literature by providing the first integrated examination of these four attributes within a single model in the Nigerian oil and gas context and by employing a sector-specific, internationally benchmarked disclosure index.

Recommendations

i. The Securities and Exchange Commission (SEC) and the Nigerian Exchange Group (NGX) should strengthen independence criteria, moving beyond numerical quotas to require environmental competence among independent directors.
ii. Listed oil and gas firms should maintain reasonably large boards with diverse expertise to navigate complex GRI 13 disclosures.
iii. The Financial Reporting Council of Nigeria (FRCN) should introduce a "comply-or-explain" requirement for female board representation in the extractive sector.
iv. Regulators should mandate "Environmental and Climate Risk" as a standing board agenda item, and shift oversight from counting meetings to evaluating the quality of environmental discussions.

Limitations and Future Research

The disclosure index captures the quantity of reporting, not its substantive depth; future studies could compare reported disclosures with actual environmental performance indicators. The sample is limited to the oil and gas sector, thus generalizability to other industries is constrained. Qualitative research is recommended to understand why meeting frequency fails to drive better reporting, possibly through interviews with board members. Additionally, investigating interaction effects between attributes (e.g., independence and gender diversity) could yield more nuanced governance prescriptions.

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EFFECT OF FIRM SPECIFIC ATTRIBUTES ON FINANCIAL REPORTING QUALITY OF LISTED OIL AND GAS COMPANIES IN NIGERIA

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Abstract
Financial Reporting Quality is a critical concern in Nigeria's economically sensitive oil and gas sector. This study investigates the effect of firm specific attributes on the financial reporting quality (FRQ) of listed oil and gas companies in Nigeria over the period 2015–2023. The study employed a quantitative research design using secondary panel data and, following diagnostic tests, utilized the Pooled Ordinary Least Squares (OLS) estimation technique. The population of the study were eight listed oil and gas companies with sample size of seven companies using purposive sampling techniques. The results reveal that Firm Size, firm financial performance all exerts a significant and positive effect on financial reporting quality. This suggests that larger and more profitable firms, as well as those that effectively utilize debt financing, exhibit superior reporting transparency and reliability. Conversely, Firm Age was found to have negative but statistically insignificant effect. The findings emphasize that financial strength and scale are primary drivers of high-quality financial reporting in this sector, validating the importance of corporate financial and structural characteristics in shaping disclosure outcomes. The study recommends that oil and gas firms should focus on operational efficiency and financial management to sustain high profitability, continue to pursue strategic growth to capture the benefits of Firm Size, utilization of Leverage strategic. These ensure that practices remain dynamic and adapt quickly to evolving regulatory requirements and industry best practices by preventing age from becoming a liability to FRQ.

Keywords: Firm Attributes, Firm Size, Firm Age, Firm Leverage and Firm Financial Performance.

1. Introduction

The quality of financial reporting had been an enduring concern by regulators, investors and academics, because reliable financial statements were foundational to efficient capital allocation and investor confidence in capital markets (Adekanmi, et al., 2021). In Nigeria the demand for high quality reporting had intensified following recurrent corporate failures and high-profile disclosure lapses and researchers had therefore paid greater attention to factors that could explain variation in reporting quality across firms (Holiness & Okolie 2024). The oil and gas sector was especially important to the Nigerian economy, oil and gas companies had been consequential for fiscal transparency, investor decisions and public policy given the sector's revenue centrality (Adebayo et al., 2022). Because firm attributes were controllable or observable characteristics of firms, scholars had proposed that these attributes might have systematic effects on the faithfulness and usefulness of published financial information (Ywhejevwe-Togbolo et al., 2024).

Firm attributes were gestated as performance characteristics that described a company's internal environment and strategic posture. Common attributes that had been examined included firm size, leverage, performance, firm age, ownership structure and revenue growth (Ywhejevwe-Togbolo et al., 2024). Firm size was hypothesized to influence reporting quality through economies of scale in reporting systems and greater scrutiny from regulators and auditors; larger firms had often produced more comprehensive disclosures and better- documented controls in the empirical Nigerian studies (Adebayo et al., 2022). Leverage had been linked to reporting behaviour through debt covenant pressures; several previous studies in Nigeria had reported that higher indebtedness motivated managers to manipulate earnings or delay adverse disclosures to satisfy lenders (Adebayo et al., 2022). Firm Performance was structured in two ways: profitable firms had incentives to disclose more information to signal strength, yet they could also manage earnings to smooth performance (Holiness & Okolie 2024). Firm age was interpreted as an indicator of institutional maturity and governance evolution; older firms had sometimes shown better reporting routines but not uniformly cross sectors (Ywhejevwe-Togbolo et al., 2024).

Temple (2019) noted that there appear to be a number of problems with the Nigerian oil and gas industry, including market abuses, internal control failures, false disclosures, financial statement misstatements, transactions not carried out at arm's length, and other lapses resulting from inadequate firms' attributes. Chukwu and Nwabochi (2019) claim that the primary reasons for poor financial reporting quality are the inefficiency and ineffectiveness of the audit committee, one of the corporate governance mechanisms. Oil and gas are among the other sectors of the Nigerian economy that have seen corporate scandals. Examples include the US$1.1 billion Malabu Oil Scam, 21 Oil Subsidy Cabals, the Capital Oil and Gas scandal, the NNPC/CBN unrelenting revenue scandal, the African Petroleum NGN12 billion scams, and the most recent one involving Jubril Adewale Tinubu, the group managing director of Oando Plc, and his longtime deputy, Omamofe Boyo of Oando Plc (Chukwu & Nwabochi, 2019). Fraudulent activities distort the state's growth and development, so the multiplier effect affects more than just investors (Odjaremu & Jeroh, 2019).

Despite growing evidence, gaps persisted that motivated further inquiry. First, many studies had used narrow proxies or single-dimension measures of reporting quality, limiting generalizability (Herath 2017). Second, sector-specific dynamics such as the capital intensity, regulatory exposure and environmental risk profile of the oil and gas sector had been under- examined relative to manufacturing or financial firms in Nigeria, leaving questions about whether generic findings held in high-risk, high-stakes industries (Awodiran & Ogundele, 2022). Third, the mixed evidence on IFRS effects had underscored the need to consider enforcement and institutional contexts when interpreting associations between standards and quality (Ahmed et al., 2013; Doukakis 2014).

Basically, the study is aimed at examining the effect of firm specific attributes on the financial reporting quality of listed oil and gas companies in Nigeria. The objective of the study therefore has developed certain question as; how firm size influences reporting quality through economies of scale in reporting systems and greater scrutiny from regulators and auditors in Nigeria; how firm age is interpreted as an indicator of institutional maturity and governance evolution in Nigeria; how older firms had sometimes shown better reporting routines but not uniformly cross sectors and to what extent leverage had been linked to reporting behaviour through debt covenant pressures, that higher indebtedness motivated delay adverse disclosures to satisfy lenders and why firm performance incentives result to disclosure of more information to signal strength on the FRQ in Nigeria.

2. Literature Review

This section reviews relevant and related concepts regarding firm-specific attributes and the financial reporting quality of oil and gas companies

2.1. Theoretical Framework

Agency theory

Agency Theory, a cornerstone of corporate governance and financial economics, addresses the conflicts of interest between principals (owners or shareholders) and agents (managers or executives) in a firm. This theory, notably advanced by economists Michael Jensen and William Meckling in their seminal 1976 paper, investigates how the separation of ownership and control in modern corporations can lead to issues such as moral hazard and adverse selection (Jensen & Meckling, 1976). The relevance of agency theory had been widely recognized in corporate governance and accounting research because it provided a framework for understanding conflicts of interest between principals and agents. In sum, agency theory remained highly relevant for studies examining financial reporting quality because it offered a conceptual foundation for understanding the conflicts between owners and managers, the incentives that drive reporting behaviour and the institutional mechanisms that could enhance accountability and transparency (Jensen & Meckling 1976; Bushman & Smith 2011). Its application in empirical research provided both theoretical and practical justification for investigating how firm attributes, governance structures and monitoring environments collectively shaped the quality of financial information in organizations.

Stakeholder theory

The relevance of stakeholder theory had been extensively recognized in corporate governance and accounting research because it broadened the focus of managerial responsibility beyond shareholders to include all parties affected by corporate actions. The theory was originally pioneered by Freeman in 1984, who argued that organizations should consider the interests of all stakeholders including employees, customers, suppliers, creditors, regulators, and the wider community rather than focusing solely on shareholder wealth maximization (Freeman 1984). In sectors such as oil and gas, where operations had widespread economic, environmental, and social impacts, stakeholder theory offered a framework to understand why companies might prioritize extensive disclosures on environmental liabilities, corporate social responsibility initiatives, and governance practices. Empirical applications of stakeholder theory had been used to explain how firm attributes influenced financial reporting quality. For example, larger firms and those with greater profitability tended to face more stakeholder scrutiny, compelling managers to provide more accurate and extensive disclosures to satisfy diverse stakeholder needs (Clarkson 1995).

Similarly, firms with higher leverage or complex operations might report more detailed financial and non-financial information to maintain credibility with creditors, regulators, and community stakeholders. Stakeholder theory thereby provided a conceptual rationale for examining the interplay between firm characteristics and reporting practices. Hence, stakeholder theory remained highly relevant for studies of financial reporting quality because it provided a comprehensive framework to account for the needs and expectations of diverse constituencies. Its application helped explain why firm size, profitability, leverage, and other attributes influenced disclosure practices, and it underscored the ethical and strategic imperatives for transparent, decision-useful reporting (Freeman 1984; Donaldson and Preston 1995; Clarkson 1995).

2.2. Empirical Review and Hypothesis Development

This section discusses the empirical works of previous studies in relation to the study under consideration. The empirical review of literature considers the relationship exist between Firm specific attributes and Financial Reporting Quality.

2.2.1. Firm Size and Financial Reporting Quality

The relationship between firm size and financial reporting quality in Nigerian oil and gas companies is multifaceted, while others identify a positive and significant association between firm sizes with financial reporting quality. Empirical literature has established a link between firm size and financial reporting quality. The size of a firm could be reflected in its total assets or total sales. Saji (2022) examined the relationship between firm size and financial reporting quality within an emerging market context under IFRS adoption. The study employed an empirical approach using firm-level data and regression analysis to assess how institutional factors interact with firm characteristics in influencing reporting quality. The results indicated that firm size has a conditional effect on financial reporting quality. While larger firms generally exhibited better reporting practices, the strength of this relationship depended largely on the quality of regulatory enforcement and institutional frameworks. In environments with weak enforcement mechanisms, firm size did not significantly guarantee higher reporting quality. The study highlights that firm size alone is insufficient in explaining financial reporting quality; rather, it must be considered alongside institutional quality and governance structures. This finding introduces an important dimension to the literature by emphasizing contextual influences.

Lathifannisa et al. (2023) explored the relationship between firm size and earnings management, which serves as an inverse proxy for financial reporting quality. Using panel data regression, the study analyzed firms across different sectors to determine how firm size influences the tendency to manipulate earnings. The findings revealed a negative and significant relationship between firm size and earnings management, implying that larger firms are less likely to engage in opportunistic financial reporting practices. Consequently, this suggests that firm size improves financial reporting quality. The authors argued that large firms face higher scrutiny from auditors, regulators, and investors, which discourages earnings manipulation. Additionally, reputational concerns and the need to maintain investor confidence further compel large firms to produce high-quality financial reports.

Muhammad and Abubakar (2025) investigated whether specific firm attributes are systematically associated with financial reporting quality (FRQ) in Nigerian-listed oil and gas companies over 13 years (2012–2024). Guided by Agency Theory and Resource Dependence Theory, the analysis employed multivariate panel techniques suitable for firm-level data observed over time, with standard controls for scale effects and unobserved heterogeneity. The results indicate that firm size is negatively and significantly related to discretionary accruals, suggesting that larger issuers have stronger information environments and internal controls.

$H0_1$: Firm size has no significant effect on the financial reporting quality of listed oil and gas companies in Nigeria.

2.2.2. Firm Age and Financial Reporting Quality

Firm age denotes the duration of a company's existence at the point of analysis. Ayuba, et al., (2024), alongside Attah et al. (2024), investigated the influence of firm characteristics of financial reporting quality among quoted oil and gas companies in Nigeria from 2011 to 2020. A sample of eight companies was selected through a purposive sampling technique following the application of a single filter. The study employed an ex post facto design. The multiple regression analysis reveals that firm age has a significant impact on financial reporting quality. The study concludes that firm attributes, particularly firm age, serve as effective predictors of financial reporting quality.

Wijaya et al. (2024) examined the determinants of earnings quality (a proxy for financial reporting quality) in the transportation and logistics sector using data from 2019–2023. The study employed panel regression to assess the influence of firm-specific characteristics, including firm age, on earnings quality. The findings revealed that firm age has a significant relationship with earnings quality, indicating that older firms tend to exhibit better financial reporting practices. The study argued that mature firms have accumulated experience in financial reporting and have more established internal control systems, which enhances reporting reliability. However, the study also emphasized that firm age works alongside other variables such as audit quality and governance, suggesting that age alone may not fully explain financial reporting quality.

Li et al. (2024) investigated the interaction between financial reporting quality and CEO age using a large dataset of U.S. firms from 2010–2022. The study found that the effect of financial reporting quality on firm outcomes (investment efficiency) is stronger in firms with older leadership, indicating that age-related experience can enhance the usefulness of financial reports. However, another related study shows that older CEOs may also be associated with increased financial reporting irregularities under certain conditions, highlighting a complex relationship between age and reporting quality. This suggests that age (at both firm and managerial levels) does not always uniformly improve financial reporting quality.

$H0_2$: Firm age has no significant effect on the financial reporting quality of listed oil and gas companies in Nigeria.

2.2.3. Firm Leverage and Financial Reporting Quality

Prior studies indicate diverse relationships between leverage and the quality of financial reporting. Shehu (2023) analysed the monitoring characteristics and financial reporting quality of publicly listed manufacturing firms in Nigeria. A sample of 32 firms was selected from a total population of 59 for the study. Multiple regression analysis was utilised to investigate the study's Model, revealing a positive and significant correlation between leverage and earnings quality, the latter serving as a proxy for financial reporting quality, as assessed through the modified Dechow and Dichev (2002) model. The result that positively influences earnings quality could be an indicator that providers of debt financing in the manufacturing sector are effective in monitoring the activities of managers. According to Harrison and Thomas (2019), short-term debt often doesn't bear interest, in contrast to long-term debt such as bank loans which are typically interest-bearing. Furthermore, the use of these types of debt differs based on their purpose. Short-term debt, which is due within a year, is typically used to finance the day-to-day operations of the company (Yenni et al., 2021). On the other hand, long-term debt, which is due after a year, is used to finance long-term investments (Cheng et al., 2020; Hasanaj & Kuqi, 2019). Thus, total debt captures both short-term and long-term debt, providing a comprehensive view of a company's indebtedness. These three debt measures are often divided by total assets to understand the proportion between the debt and the company's total assets. The purpose of financial leverage is to amplify the expected financial performance, as measured by Return on Equity (Ibrahim & Isiaka, 2020). Debt financing can provide a company with additional capital, enabling it to seize new business opportunities and undertake new investments, which could enhance financial performance (Cheng et al., 2020; Yenni et al., 2021).

$H0_3$: Firm leverage has no significant effect on the financial reporting quality of listed oil and gas companies in Nigeria.

2.2.4. Profitability and financial reporting quality

In the work of Samuel et al (2024) conducted “Firm Characteristics and Financial Reporting Quality in Nigeria”. The objective was to investigate how a broad set of firm characteristics (size, leverage, liquidity, asset growth, turnover, profitability, firm age) affect financial reporting quality for nonfinancial firms in Nigeria. The population comprised all 108 nonfinancial firms listed on the NGX as of 2022; sample size was 80 firms (based on tolerable error formula). Secondary data from annual reports were used; panel regression with discretionary accruals model measured quality. The research gap: inconsistencies in prior findings and limited sample breadth in Nigeria. They found mixed results: profitability had no significant relationship; leverage had a positive relationship with quality. Conclusion: firm attributes matter but results vary; recommendation: management should prepare true state of affairs rather than focus on profit maximization, and regulators should emphasize substance over form. However, Samson (2020) carry out a study on Firm Attributes and Profit Manipulation Aggregate among Quoted Nigerian Industrial Companies from 2003–2020. The population was quoted industrial organizations; sample size was 56 purposively selected firms. Data were secondary from financial statements; analysis used panel regression. Findings indicate that profitability negatively and significantly influenced earnings management.

$H0_4$: Firm profitability has no significant effect on the financial reporting quality of listed oil and gas companies in Nigeria.

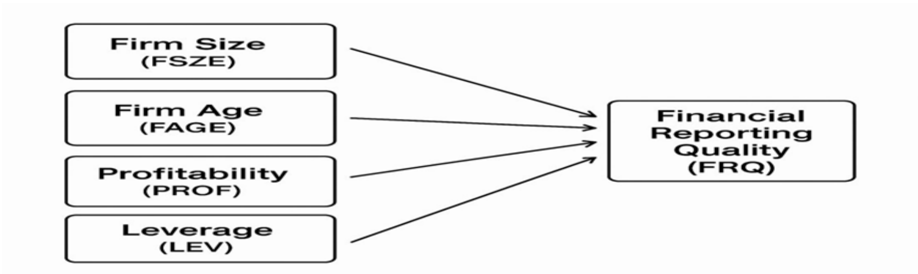

Figure1: Conceptual Framework

3. Methodology

The study adopted a quantitative research design, which was deemed appropriate for testing relationships between firm attributes and financial reporting quality using numerical data. The population comprised nine (9) number oil and gas companies listed on the Nigerian Exchange Group (NGX) from 2015 to 2023. Using censors sampling, the study selected firms with complete and consistent financial reporting data over the study period, resulting in a sample size of seven (7) firms, depending on data availability. Data collection relied on secondary sources, primarily annual financial statements, published reports, and other relevant disclosures from the NGX and firms' official websites. The study focused on firm attributes including firm size, firm age, profitability and leverage, while financial reporting quality was measured using Modified Jones model.

Model specification

For a study on the "Effect of Firms Specific Attributes on Financial Reporting Quality of Listed Oil and Gas Companies in Nigeria," the model specification can be as:

FRQit = f (FSZEit, FAGEit, ROAit, LEVit) ……………………………….(i)

$FRQ_{it} = \beta_0 + \beta_1 FSZE_{it} + \beta_2 FAGE_{it} + \beta_3 ROA_{it} + \beta_4 LEV_{it} + \mu_{it}$ …………………………(II)

Where:

FRQit = Financial Reporting Quality of firm i at time t
FSZEit = Firm Size of firm i at time t (measured by natural log of total assets)
FAGEit = Firm Age of firm i at time t (measured as number of years since incorporation)
ROAit = ROA of firm i at time t (measured using Return on Assets, ROA)
FLEVit= Leverage of firm i at time t (measured as total debt to total equity ratio)
$\beta 0$ = Intercept
$\beta 1, \beta 2, \beta 3, \beta 4$ = Coefficients of independent variables
μ_{it} = Error term capturing unobserved factors affecting financial reporting quality

3.1 Measurement of Variables

Table 1. Variable, Measurement and Source

Variable	Definition	Measurement	Source
FRQ	Financial reporting Quality	Modified Jones Model	Aniefor, et al., (2021)
FSIZE	Firm Size	Log of total assets	Oraka, et al., (2019)
FAG	Firm Age	Natural log of firm age	Anusi & Nduka (2022).
FLEV	Leverage	Debt to Equity Ratio	
ROA	Return on Asset	Net Income over Total Assets	Omoro, et al., (2022)

Source: STATA Output, (2025).

4. Results and discussion

4.1 Descriptive

This section outlines the characteristics of the variables, including the mean, maximum, minimum and standard deviation for each variable.

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
FRQ	63	0.014837	0.161083	-0.22199	0.3282
FAGE	63	37.28571	17.26775	7	68
FSZE	63	7.76874	0.916331	5.73655	9.42751
ROA	63	0.017566	0.046846	-0.06828	0.080785
LEV	63	0.593996	0.253582	0.219892	1.00958

Source: STATA Output, (2025).

Table 2 presents the descriptive statistics of the study variables, which provide an overview of their central tendencies and dispersion. The dependent variable (FRQ) had a mean value of 0.0148 and a standard deviation of 0.1611, indicating moderate variability across the sampled firms and periods. Its minimum and maximum values were –0.2219 and 0.3282 respectively, suggesting both negative and positive performance levels among firms during the study period. The average firm age (FAGE) was approximately 37 years, with values ranging between 7 and 68 years. This implies that the sampled firms were relatively mature entities with diverse operational histories. Firm size (FSZE) recorded a mean value of 7.77 and a standard deviation of 0.92, showing that firm sizes varied but remained relatively close around the average. The minimum and maximum firm size was 5.74 and 9.43 respectively, confirming that the sample consisted mainly of medium to large-scale firms.

The firms' Return on Assets (ROA) had an average of 0.018, with a standard deviation of 0.047, minimum of –0.068, and maximum of 0.081, indicating that profitability levels among firms were modest but positive on average. Leverage (LEV) averaged 0.594 with a standard deviation of 0.254, suggesting that the average firm financed about 59% of its assets through debt. Overall, the descriptive results indicate notable variation in the financial and structural characteristics of the sampled firms, which provides an appropriate basis for regression estimation.

4.2 Correlation and Multicollinearity Test

A correlation matrix was created to illustrate the correlation coefficients among the examined variables. The relationship between variables is demonstrated by each column in the table. A confidence interval can be utilised to summarize data or assess it for future research in a more advanced study. The Karl Pearson correlation was utilised to demonstrate the effect of firm specific attribute on financial reporting quality of oil and gas companies listed on the Nigerian Stock Exchange. The correlation matrix of the variables is presented in Table 3.

Table 3: Correlation test

Variable	FRQ	FAGE	FSZE	PROF	LEV
FRQ	1.0000				
FAGE	0.0600	1.0000			
FSZE	0.0696	0.7153*	1.0000		
ROA	0.3042*	0.2589*	0.0236	1.0000	
LEV	0.0563	0.1363	-0.2079	-0.2090	1.0000

Source: STATA Output, (2025).

At Table 3, the pairwise correlation analysis examined the linear association among the explanatory variables. The results showed that firm size (FSZE) and firm age (FAGE) were positively correlated ($r = 0.715$, $p < 0.05$), suggesting that older firms tend to be larger. Furthermore, ROA exhibited a positive correlation with the dependent variable (FRQ) ($r = 0.304$, $p < 0.05$), indicating that firms with higher profitability tend to perform better in the measured outcome. Other correlation coefficients were relatively low, suggesting the absence of serious collinearity issues.

4.3 Variance Inflation Factor

Assessment of Multicollinearity The lack of multicollinearity is a critical assumption in linear models. Multicollinearity arises when predictors exhibit dependence on one another. Tolerance and variance inflation factor (VIF) values serve as indicators for assessing multicollinearity. The results of the Multicollinearity test are presented in Table 4.

Table 4: Variance Inflation Factor

Variable	VIF	1/VIF
FRQ	3.25	0.307556
FSIZE	3.04	0.328622
FAGE	2.43	0.635223
LEV	1.53	0.654780
ROA	1.37	0.728677
Mean VIF	2.30	

Source: Stata Output, (2025).

The data presented in Table 4 supports the conclusion that multicollinearity is not an issue. The VIF (centered) values for all factors are below 10 and above 0.10, in accordance with established guidelines. This was confirmed by the Variance Inflation Factor (VIF) test, where all VIF values were below 5, and the mean VIF was 2.30. According to Gujarati and Porter (2009), VIF values below 10 indicate no multicollinearity problem. Thus, the explanatory variables were suitable for inclusion in the regression model.

4.5 Model Selection

Given the panel structure of the dataset (seven firms observed from 2015–2023), both Fixed Effects (FE) and Random Effects (RE) models were estimated. The Hausman test was then employed to determine the most appropriate estimator. The result of the Hausman test yielded a probability value of 0.7391, which is greater than the 0.05 significance level. This indicates that the difference in coefficients between the FE and RE models is not systematic, thus supporting the Random Effects model as the more efficient estimator under the null hypothesis. However, the Breusch–Pagan Lagrangian Multiplier test for random effects produced a p-value of 1.000, implying that the variance of the random effects is not significantly different from zero. Consequently, the Pooled Ordinary Least Squares (OLS) model was preferred as the final estimation technique for this study.

4.6 Regression Analysis

Multiple regression analysis was utilized to clarify the relationship between firm age, firm size, leverage, profitability and financial reporting quality.

Table 5: Regression results based on OLS with Robust standard error

Variable	Coef.	Std. Err.	t	P>t
FAGE	-0.00338	0.002039	-1.66	0.103
FSZE	0.066063	0.028917	2.28	0.026
ROA	1.537043	0.436056	3.52	0.001
LEV	0.176109	0.087715	2.01	0.049
_Cons	-0.50398	0.192324	-2.62	0.011
R_2	0.1560			
F(4, 58)	4.33			
Breusch Pagan	0.44			
Shapiro	0.845			
Prob > F	0.0039			

Source: STATA Output, (2025).

Table 5 summarizes the robust estimation, showing that 15% of the variation in financial reporting quality is collectively explained by firm size, leverage, profitability and firm age. The remaining 85% was attributed to variables not included in the Model. The F-statistic was 4.33, with a chi-squared probability of 0.0039. The chi-squared probability is significant at the 1% level, suggesting that the Model is well-fitted. This presents substantial evidence to determine that the chosen variables are suitable for analyzing the influence of firm-specific characteristics on the financial reporting quality of oil and gas companies in Nigeria.

Several post-estimation diagnostics were conducted to validate the robustness of the OLS results. The Breusch–Pagan / Cook–Weisberg test for heteroskedasticity returned a p-value of 0.4000, implying that the null hypothesis of constant variance could not be rejected. Hence, there was no evidence of heteroskedasticity. The Shapiro–Wilk test for normality of residuals produced a p-value of 0.845, confirming that the residuals were normally distributed. The Ramsey RESET test (p = 0.5842) indicated that the model had no omitted variable bias. Based on these results, the regression model satisfied all key assumptions, confirming its statistical reliability.

4.7 Discussion of Findings

This section offers discussion of findings from the regression estimates which is based on OLS with robust standard error to control for possible threat of heteroscedasticity and serial correlation.

Firm Age (FAGE)

The negative but insignificant coefficient ($\beta = -0.0034$, $p = 0.103$) suggests that older firms may experience diminishing dynamism or structural rigidity, which can reduce performance, although this effect is not statistically significant. The result corroborates the view of Adeniran (2018), who found that firm longevity alone does not guarantee better performance outcomes. The result supported hypothesis one that firm age has no significant impact on the financial reporting quality of oil and gas companies in Nigeria.

Firm Size (FSZE)

This variable has coefficient ($\beta = 0.0661$, $p = 0.026$) indicates that a one-unit increase in firm size is associated with a 0.066-unit increase in FRQ, holding other factors constant. This suggests that larger firms tend to achieve higher performance levels, possibly due to better access to financial resources, economies of scale, and stronger market positions. This finding aligns with the argument of Ojo and Akinlabi (2021) that firm size enhances operational efficiency and financial resilience. Hence, the study rejected hypothesis two that firm size has no significant impact on the financial reporting quality of oil and gas companies in Nigeria.

Profitability (PROF)

The positive and highly significant coefficient ($\beta = 1.5370$, $p = 0.001$) implies that more profitable firms perform better in FRQ. Profitability reflects sound financial management and operational effectiveness, which contribute positively to overall performance. This result is consistent with the findings of Okafor (2020) and Yusuf (2022), who reported that profitability enhances firms' sustainability and growth potential. Based on this result, hypothesis three is rejected and therefore, the alternate hypothesis is accepted.

Leverage (LEV)

The coefficient for leverage ($\beta = 0.1761$, $p = 0.049$) is positive and significant, indicating that firms that effectively utilize debt financing tend to perform better. This suggests that moderate leverage can improve financial flexibility and investment capacity. However, excessive leverage may still pose risk, as noted by Ibe and Chukwu (2019). Consequently, this study accepted the alternate hypothesis based on the statistical evidence that emerge.

5. Conclusion and Recommendations

Conclusion

This study conclusively established that firm attributes are significant determinants of financial reporting quality (FRQ), among listed oil and gas companies in Nigeria, using a Pooled OLS model. The findings revealed that Firm Size, Profitability, and Leverage all have a statistically significant and positive influence on FRQ. Profitability emerged as the strongest driver, indicating that financially robust firms exhibit superior reporting credibility, likely due to a lower incentive for earnings manipulation. The positive relationship with size and leverage suggests that the benefits derived from scale, resources, and external creditor monitoring effectively encourage greater transparency, aligning with the principles of agency and stakeholder theories regarding heightened scrutiny and disclosure integrity.

In contrast, Firm Age showed a negative but statistically insignificant effect on FRQ, indicating that longevity alone is not a reliable predictor of reporting outcomes in this sector. The overall significance of the model confirms that these firm-specific characteristics jointly play a crucial role in shaping the information environment. Ultimately, the study provides robust evidence that financial and structural strength are the most effective drivers of high-quality financial reporting. This implies that management and regulatory policies should prioritize strategies that enhance profitability and ensure the proper oversight of capital structure to inadvertently boost the reliability of financial information, thereby strengthening investor confidence in the Nigerian oil and gas sector.

Recommendations

Based on the findings the following recommendation were made:

1. Firms must focus on operational efficiency and financial management to sustain high profitability (ROA), as it is the strongest positive predictor of financial reporting quality (FRQ). Management should view profitability as an essential internal control mechanism, as it significantly reduces the incentive to manipulate earnings, thereby naturally improving the credibility and reliability of financial reports.
2. Management should continue to pursue strategic growth to capture the benefits of Firm Size. Larger scale provides the necessary resources to invest in sophisticated accounting information systems and robust internal controls, which are vital for meeting comprehensive disclosure and compliance requirements, ultimately enhancing FRQ. Regulators should focus extra scrutiny on smaller firms that lack these advantages.
3. Firms should utilize Leverage strategically, recognizing the positive role that creditor monitoring plays in encouraging transparency. Management must maintain an optimal debt level and ensure clear communication with lenders, allowing the external discipline imposed by debt contracts to function as an effective corporate governance tool that promotes higher reporting quality.
4. Despite the insignificance of Firm Age, older firms must actively counter the risk of structural rigidity by fostering a culture of continuous learning and investing in modern reporting technologies. This ensures that their disclosure practices remain dynamic and adapt quickly to evolving regulatory requirements and industry best practices, preventing age from becoming a liability to FRQ.

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BOARD STRUCTURE AND FINANCIAL PERFORMANCE OF LISTED CONSUMER GOODS COMPANIES IN NIGERIA

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Abstract
Board structure represents one of the core issues in corporate governance. This study investigates the influence of board structure on the financial performance of listed consumer goods companies in Nigeria. The study utilised an ex-post factor research design, examining a population of 20 consumer goods companies. The sample size consisted of 10 consumer goods companies listed on the Nigerian Exchange Group (NGX), spanning from 2013 to 2022. The data for this study were obtained from the published annual accounts and reports of the sampled firms. A random effect regression model and a panel-corrected standard error regression were utilised for data analysis. The study showed that expertise, and ownership of the board have an insignificant effect on return on equity. The study also discovered that board expertise, and board ownership were found to have a significant negative impact on the operating profit of the firms included in this study. Hence, the study strongly recommended that members of the boards of listed consumer goods companies in Nigeria prioritise matters directly linked to their companies, as these have a significant impact on financial performance.

Keywords: Financial Performance, Board Structure, Board Expertise, Board Ownership, Nigeria

1. Introduction

Today's business environment is not only competitive but also shaped by sustainability pressures, stakeholder expectations, and post-crisis regulatory reforms in many emerging markets. Recent studies link good corporate governance with better financial performance, sustainability outcomes and stakeholder confidence, especially where regulation, ownership structure and board structure are aligned (Boshnak, 2021; Wang et al., 2019; Alodat et al., 2021; Farooq et al., 2021; Puni & Anlesinya, 2020; Coleman & Wu, 2020).

Corporate governance is described as the framework of laws, policies and practices that control and manage firms, ensuring fairness and transparency in relations with shareholders and other stakeholders (Boshnak, 2021; Mrabure & Abhulimhen-Iyoha, 2020). It allocates rights and responsibilities among boards, managers, shareholders and other stakeholders, and provides mechanisms for setting objectives and monitoring performance (Boshnak, 2021; Mrabure & Abhulimhen-Iyoha, 2020). Effective governance reduces corruption and mismanagement and supports capital market and economic development in countries like Nigeria (Alodat et al., 2021; Gabriel & Ibikunle, 2019; Mrabure & Abhulimhen-Iyoha, 2020), thereby improving financial performance.

In Nigeria, corporate governance has evolved through multiple statutes and sectoral codes, including CAMA 2020 (as amended), the Investment and Securities Act, SEC rules, and industry-specific frameworks from the CBN, NAICOM, PENCOM, FRC and NCC (Alodat et al., 2021; Gabriel & Ibikunle, 2019; Mrabure & Abhulimhen-Iyoha, 2020). These frameworks address board size and composition, gender diversity, ownership structure and foreign directors (Alodat et al., 2021; Gabriel & Ibikunle, 2019; Coleman & Wu, 2020; Mrabure & Abhulimhen-Iyoha, 2020).

The organisation of boards generally follows two major perspectives. One perspective argues that boards should support managerial control by allowing executives greater influence because insiders possess deeper knowledge of the company's operations. The second perspective emphasises independent monitoring by external directors to reduce agency problems and align management actions with shareholders' interests (Petra, 2007). Most companies, however, adopt a balanced board structure combining managerial knowledge and external oversight.

Financial performance remains a key indicator of organisational health and sustainability. It reflects how effectively a company utilises its resources to achieve objectives such as profitability, increased market share, improved earnings, and positive returns to shareholders (Ibrahim, 2015). Consequently, the relationship between board structure and financial performance has attracted significant attention from scholars, regulators, and practitioners. Studies suggest that boards play a critical role in supervising management and ensuring strategic decisions that enhance shareholder wealth and organisational profitability (Topal & Dogan, 2014; Al-Manaseer et al., 2012).

The global economic crisis and the collapse of major corporations such as Enron, WorldCom, and Global Crossing raised serious concerns about corporate governance practices, particularly board structure and financial performance. Boards of directors were criticized for weak oversight, failure to protect shareholders' interests, and allowing managers to pursue personal interests, leading to fraud and corporate failures (Al-Manaseer et al., 2012). In Nigeria, several cases of accounting improprieties were linked to ineffective board oversight and poor accountability, prompting reforms such as the Nigerian Code of Corporate Governance (NCCG) introduced by the Securities and Exchange Commission in 2011. Despite these reforms, concerns about weak corporate governance and inadequate board structures persist, especially in the consumer goods sector. Existing studies on the relationship between board structure and financial performance have produced mixed findings. While some studies reported a positive relationship, others found negative effects. Most prior studies focused mainly on the banking sector and often relied solely on Return on Assets (ROA) as a measure of performance. This study therefore seeks to fill the gap by examining the influence of board structure on the financial performance of consumer goods companies in Nigeria using three accounting-based performance measures: Return on Assets (ROA), Return on Equity (ROE), and Operating Profit (OPRT). The study contributes to the growing body of research on corporate governance in emerging economies by providing a

broader analysis of how board structure affects firm performance in the Nigerian consumer goods sector.
Against this background, the study examined the relationship between board structure measured through board size, board independence, board meeting frequency, board expertise, and board ownership and financial performance indicators such as return on assets, return on equity, and operating profit among consumer goods companies listed in Nigeria.
To address the research objectives of the study, the researchers formulated the following research questions:

i. Does board expertise affect the financial performance of listed consumer goods companies in Nigeria?
ii. Does board member ownership affect the financial performance of listed consumer goods companies in Nigeria?

The main objective of this study is to examine the impact of board structure on the financial performance of listed consumer goods companies. Other specific objectives were to:

i. examine the effect of board expertise on the financial performance of listed consumer goods companies in Nigeria.
ii. determine the effect of board member ownership on the financial performance of listed consumer goods companies in Nigeria.

In line with the research objectives, the following hypotheses were formulated in null form (Ho) and tested in the study:
$\boldsymbol{H}_{01}$ Board expertise has no significant impact on the financial performance of listed consumer goods companies in Nigeria.
$\boldsymbol{H}_{02}$ Board member ownership has no significant impact on the financial performance of listed consumer goods companies in Nigeria.

2. Literature Review

2.1 Financial Performance

Recent studies still use ROA and ROE as primary accounting-based indicators, often alongside market measures like Tobin's Q. (Boshnak, 2021; Puni & Anlesinya, 2020). Financial performance is commonly framed as efficient use of financial resources reflected in these ratios, dividends, and earnings per share. Operational/operating performance is still proxied by ROA rather than detailed operating profit margins in most governance–performance models (Boshnak, 2021; Danoshana & Ravivathani, 2019).

2.1.1 Return on Assets (ROA)

ROA is commonly defined as **net income divided by total assets**, used as an accounting-based indicator of firm performance in corporate governance studies (Bui & Krajcsák, 2023; Kyere & Ausloos, 2020; Shenurti et al., 2022; Yulianti et al., 2025). ROA measures how efficiently a firm uses all its assets to generate profit and is widely treated as a primary profitability/performance metric in governance and ESG–performance work (Kyere & Ausloos, 2020; Fitrianingsih & Asfaro, 2022; Dongol & Shrestha, 2024; Paridhi & Ritika, 2025). Net profit margin (net income / sales) and related margins are also used to capture profitability and operating efficiency (Kusumadewi et al., 2023; Fitrianingsih & Asfaro, 2022).

2.1.2 Return on Equity (ROE)

ROE is typically defined as **net income divided by total equity**, capturing the return generated for shareholders on their invested capital (Bui & Krajcsák, 2023; Fitrianingsih & Asfaro, 2022; Yulianti et al., 2025). ROE is widely used as a profitability ratio and as a

financial performance indicator in corporate governance, ESG and bank performance studies (Bui & Krajcsák, 2023; Sandberg et al., 2022; Dongol & Shrestha, 2024; Sulbahri et al., 2022).

2.1.3 Operating Profit and Profit Margins

Operating profit margin (OPM) or operating margin measures **operating profit relative to sales**, indicating the profit from core operations before interest and tax (Khresat & Jassar, 2025; Yulianti et al., 2025). Operating profit margin and net profit margin are standard profitability ratios used alongside ROA and ROE to evaluate financial performance and operating efficiency. (Fitrianingsih & Asfaro, 2022; Yulianti et al., 2025; Khresat & Jassar, 2025).

2.2 Board Structure

Recent work supports board structure as a central governance mechanism, but findings are mixed across contexts (Boshnak, 2021; Puni & Anlesinya, 2020; Almoneef & Samontaray, 2019).

2.2.1 Board Expertise

Board expertise refers to the substantial skills, knowledge, and experience acquired by board members through education, training, and participation in corporate governance activities. Expertise is not limited to formal qualifications but can also result from long-term practical experience. Board financial expertise is often positively associated with performance, though COVID-19 weakened some of these benefits (Tarighi et al., 2023). Misalignment between board expertise and a firm's future risks harms performance but strategic reconfiguration of expertise improves it (Schnatterly et al., 2021).

2.2.2 Board Ownership

Across many countries, board and managerial ownership, especially in concentrated hands, often improve firm performance by strengthening monitoring and aligning incentives, but this is not universal. In some contexts, higher insider ownership or dominant blockholders can entrench managers or controlling shareholders and harm minority investors. The performance impact of board ownership therefore depends not just on how much equity directors hold, but also on ownership type, legal protections, and how board structures are designed. In several emerging markets, managerial or director ownership also tends to improve performance, again via better alignment and monitoring (Boshnak, 2023).

2.3 Review of Empirical Studies

Within the realm of corporate boards, board expertise pertains to the attainment of substantial skills and knowledge by board members through formal education, training, and extended engagement in board matters. Board expertise refers to the substantial skills, knowledge, and experience acquired by board members through education, training, and participation in corporate governance activities. Expertise is not limited to formal qualifications but can also result from long-term practical experience. Board financial expertise is often positively associated with performance (Tarighi et al., 2023). The board expertise must align with a firm's future risks to enhance performance (Schnatterly et al., 2021).

Board ownership remains central, with more nuanced patterns: board ownership frequently shows a positive association with performance in emerging markets such as Saudi Arabia, Jordan, Shariah-compliant Malaysia, Pakistan, Turkey (Boshnak, 2021; Ciftci et al., 2019). However, institutional ownership can be negatively related to ROA and ROE in some contexts, and insider-owners who are also directors may reduce performance. Some evidence shows ownership structure and composition do not always affect performance, indicating that monitoring from concentrated owners is not universally beneficial. These results refine earlier definitions of ownership concentration and identity by showing that who holds concentrated stakes and how they interact with boards and managers critically shapes performance effects.

2.4 Theoretical Framework

2.4.1 Agency Theory

The agency theory is a well-recognised conceptual framework in the field of corporate governance that delineates the dynamics of the relationship between management and shareholders. Agency theory emerged from the economic analysis put up by Alchian and Demsetz (1972) in a seminar paper, and further elaborated on by Jensen and Meckling in 1976. Agency theory refers to the contractual relationship between the agent (manager) and the principal (shareholder), in which shareholders delegate responsibilities to the management for managing their economic business organisation. Agency theory explains the relationship between shareholders (principals) and managers (agents), where shareholders delegate decision-making responsibilities to managers to operate the firm on their behalf. The theory argues that managers may pursue personal interests rather than shareholders' wealth maximisation, thereby creating agency problems and agency costs. These costs arise from monitoring managers, bonding arrangements, and losses resulting from decisions that do not fully align with shareholders' interests. Corporate governance mechanisms, particularly the board of directors, are therefore necessary to monitor management, reduce conflicts of interest, and improve firm performance. Agency theory further suggests that larger and more independent boards enhance monitoring effectiveness, improve decision-making, and reduce managerial dominance, while board ownership aligns managers' interests with those of shareholders. The theory also highlights the role of accounting systems and performance-based compensation in reducing agency conflicts. Complementing this perspective, resource dependence theory posits that board members provide valuable resources, expertise, information, and external linkages that reduce uncertainty and improve organisational performance. Together, these theories provide the foundation for examining how board structure influences corporate performance.

3. Methodology

This study adopted an ex-post facto research design because the variables under investigation already existed and could not be manipulated by the researcher. The population of the study comprised twenty (20) consumer goods companies listed on the Nigerian Exchange Group (NGX) as of December 31, 2021. However, the sample size consisted of ten (10) actively listed consumer goods firms selected based on the availability of complete data from 2013–2022 and uniform accounting year-end of December 31st to ensure consistency and comparability of financial reports. The study relied on secondary data obtained from the published annual reports and accounts of the sampled companies. The variables examined included board expertise (BEXP), board ownership (BOWN), firm size (FSZE), and firm leverage (FLEV), while financial performance was measured using Return on Assets (ROA), Return on Equity (ROE), and Operating Profit (OPRFT). To analyse the data, the study employed descriptive statistics, Pearson correlation analysis, and multivariate regression techniques using STATA version 14. Descriptive statistics were used to summarise the characteristics of the variables, while Pearson correlation examined the strength and direction of relationships among variables. Multivariate regression analysis was adopted to determine the effect of board structure variables on firm performance. Before estimating the regression models, several diagnostic tests were conducted to ensure the validity of the regression assumptions. These included tests for normality, multicollinearity, heteroscedasticity, and autocorrelation. Multicollinearity was assessed using Variance Inflation Factor (VIF) and tolerance values, while heteroscedasticity was examined through graphical methods and the Breusch-Pagan/Cook-Weisberg test. Autocorrelation was tested using approaches such as the Durbin-Watson statistic and the Wooldridge test for serial correlation in panel data models.

4. Results

In this section, the data analysis results and the conclusions pertaining to the formulated hypotheses derived from the defined model of the study were provided.

4.1 Descriptive Statistics

Presented in this subsection are the descriptive statistics results for the dataset used in this work. The outcome of the statistical analysis is displayed in Table 1.

Table 1: *Descriptive Statistics of the Study Variables*

Variable	Obs	Mean	Std. dev	Min	Max	Skewness	Kurtosis
ROA	100	0.050	0.022	-0.235	4.027	-0.188	0.226
ROE	100	0.087	0.097	0.001	0.411	1.505	4.390
OPRFT	100	0.106	0.100	-0.072	0.401	0.897	3.545
BEXP	100	0.305	0.120	0.125	0.667	1.136	4.313
BOWN	100	0.168	0.186	0.000	0.656	1.075	3.103
FSZE	100	18.660	2.411	15.870	22.813	0.405	1.495
FLEV	100	0.606	0.263	0.055	1.453	0.281	3.396

"Note: ROA=Return on Assets; ROE=Return on Equity; OPRFT=Operating Profit; BEXP=Board expertise; BOWN; Board Ownership; FSZE=Firm Size; FLEV=Firm Leverage.

Source: Researcher's Analysis (2023)

The descriptive statistics in Table 1 show that all study variables have 100 observations, indicating a balanced dataset for the period under review. The average values of firm performance indicators ROA (0.050), ROE (0.087), and operating profit (0.106) suggest generally modest profitability among the sampled firms, although the relatively high standard deviations, particularly for ROE (0.097) and OPRFT (0.100), indicate variation in performance across firms. ROA has a negative minimum value (-0.235), implying that some firms experienced losses during the period. Board expertise (mean = 0.305) and board ownership (mean = 0.168) indicate moderate levels of governance characteristics among firms, while firm size (mean = 18.660) suggests relatively large firms on average. Firm leverage (mean = 0.606) shows that the firms are moderately highly leveraged. The skewness and kurtosis values indicate that most variables are positively skewed, especially ROE, OPRFT, BEXP, and BOWN, suggesting a concentration of lower values with a few higher outliers. Kurtosis values above or below the normal benchmark (around 3) also indicate that several variables deviate from normal distribution, implying that the dataset is not perfectly normally distributed but remains suitable for regression analysis.

4.2 Correlation Analysis

This part presents and tests the correlation among the variables of the study. Given that three models were formulated, the correlation result is provided in conjunction with each of the study models. Table 2 to Table 4 display the correlation findings for the models of Return on Assets (ROA), Return on Equity (ROE), and Operating Profit (OPRFT).

Table 2: *Correlation Matrix for ROA Model*

Variables	ROA	BEXP	BOWN	FSZE	FLEV
ROA	1				

BEXP	0.116	1			
BOWN	-0.044	0.110	1		
FSZE	0.020	0.194*	0.099	1	
FLEV	-0.087	-0.116	-0.113	0.397***	1

Note: ***, **, * indicate statistically significance at 1%, 5% and 10%, respectively. ROA=Return on Assets, BEXP=Board expertise, BOWN=Board Ownership, FSZE=Firm Size, FLEV=Firm Leverage”

Source: Researcher’s Analysis (2023)

Table 2 presents the correlation matrix for the ROA model. The result shows that board expertise (BEXP) has a weak positive relationship with ROA (0.116), while board ownership (BOWN) and firm leverage (FLEV) have weak negative relationships with ROA at -0.044 and -0.087 respectively. Firm size (FSZE) has a very weak positive relationship with ROA (0.020). Additionally, FSZE is positively and significantly related to BEXP (0.194*) and FLEV (0.397***). The low correlation coefficients among the explanatory variables indicate the absence of serious multicollinearity problems in the model.

Table 3: *Correlation Matrix for ROE Model*

Variables	ROE	BEXP	BOWN	FSZE	FLEV
ROE	1				
BEXP	-0.058	1			
BOWN	-0.271**	0.110	1		
FSZE	0.507***	0.194*	0.099	1	
FLEV	-0.054*	-0.116	-0.113	0.397***	1

Note: ***, **, * indicate statistically significance at 1%, 5% and 10%, respectively. “ROE=Return on Equity, BEXP=Board expertise, BOWN=Board Ownership, FSZE=Firm Size, FLEV=Firm” Leverage

Source: Researcher’s Analysis (2023)

Table 3 shows the correlation matrix for the ROE model. ROE has a weak negative relationship with BEXP (-0.058) and FLEV (-0.054), while BOWN has a moderate negative and significant relationship with ROE (-0.271**). FSZE exhibits a strong positive and significant relationship with ROE (0.507***), indicating that larger firms tend to generate higher returns on equity. Among the independent variables, the correlations are generally low, suggesting the absence of serious multicollinearity problems in the model.

Table 4: *Correlation Matrix for OPRFT Model*

Variables	OPRFT	BEXP	BOWN	FSZE	FLEV
OPRFT	1				
BEXP	0.002	1			
BOWN	-0.275**	0.110	1		
FSZE	-0.465***	0.194*	0.099	1	
FLEV	-0.244**	-0.116	-0.113	0.397***	1

Note: ***, **, * indicate statistically significance at 1%, 5% and 10%, respectively. “OPRFT=Operating profit, BSZE=Board Size, BIND=Board independence, BMET=Board meeting, BEXP=Board expertise, BOWN= Board Ownership, FSZE=Firm Size, FLEV=Firm” Leverage

Source: Researcher’s Analysis (2023)

Table 4 shows the correlation among the variables in the OPRFT model. Operating profit (OPRFT) has a weak positive relationship with board expertise (BEXP) (r = 0.002), but negative and significant relationships with board ownership (BOWN) (r = -0.275), firm size (FSZE) (r = -0.465), and firm leverage (FLEV) (r = -0.244). Firm size is positively and significantly related to leverage (r = 0.397). The low to moderate correlation coefficients indicates absence of serious multicollinearity among the explanatory variables in the model.

4.3 Detection of Multicollinearity

The Variance Inflation Factor (VIF) and Tolerance were adopted to check for multicollinearity problem in the dataset used for this study. Table 5 presents the results

Table 5: *Multicollinearity Test based on VIF and Tolerance values*

Variables	VIF	Tolerance (1/VIF)
BEXP	1.52	0.658
BOWN	1.32	0.760
FLEV	1.31	0.764
Mean VIF	**1.45**	

Source: Researcher's Analysis (2023)

Table 5 shows clearly that multicollinearity is not present in this study since the variance inflation factor (VIF) values fall between 1.31 and 1.52, rationally lower than the threshold of 10 (Hair et al., 2014; Pallantt, 2005). On the other hand, the tolerance values range between 0.658 and 0.764, considerably greater than the threshold of 0.1. Consequently, multicollinearity does not exist in this study.

4.4. Heteroskedasticity Test

Multivariate analysis assumed that the residuals in a regression model are homoscedasticity, meaning that the variance of error terms remains constant or is evenly distributed across a set of independent variables (Hair et al., 2014). Heteroscedasticity arises when the variance of the error terms exhibits a modulating or increasing trend. This can be attributed to the non-normalization of a specific variable, transformation error, or higher measurement error of some independent variables (Tabachnick & Fidell, 2007).

To identify heteroscedasticity, one can implement a graphical method. This involves plotting the residuals of the model against the predicted values of dependent variables and each predictor variable. The purpose is to determine if the error components of the model exhibit consistent variation. In contrast, heteroscedasticity can be identified by the Breusch Pagan/Cook Weisberg test, which provides the chi-square value and its proportion at a significance level of 5%. Therefore, in this investigation, the Breusch-Pagan/Cook Weisberg test was used to discern the existence of heteroscedasticity. The outcome of this test is shown in Table 6.

Table 6: *Breusch Pagan/Cook Weisberg Test*

Models	Chi2 (1)	Proba > Chi2	Null (Ho)
ROA	3.54	0.0592	Accepted
ROE	9.80	0.0021	Rejected
OPRFT	4.93	0.0415	Rejected

Note: Ho (null): Homoscedasticity

Source: Researcher's Analysis (2023)

The results of Table 6 show that the model for return on asset (ROA) does not provide evidence to reject the null hypothesis of homoscedasticity. This implies that there is no existence of heteroscedasticity, since the p value is 0.0592 (5.92%), which exceeds the threshold of 0.05 (5%). Conversely, the p-values for return on equity (ROE) and operating profit (OPRFT) are statistically significant at the 0.05 level. Consequently, the models invalidated the null hypothesis of homoscedasticity due to the presence of heteroscedasticity. Furthermore, the result indicates that the variances of their error terms are extensively dispersed, which requires correction. Thus, to address the issue of heteroscedasticity in return on equity (ROE) and operating profit (OPRFT) models, the PCSEs are proposed by Bailey and Katz (2011), Beck and Kattz (1995), and Reed and Ye (2011).

4.5 Hypotheses Testing

The hypotheses of this study were tested using Random Effect Regression for the ROA model and PCSEs regression for the operational profit (OPRFT) and return on assets (ROA) models. The application of random effect (RE) regression was determined using the Breusch-Pagan likelihood limit test for RE models compared to pooled ordinary least squares (OLS) model, and the Hausman specification test for RE compared to fixed effect (FE) model. The results of these tests support the usage of the random effect model. The use of PCSEs regression in the context of heteroscedasticity is linked to the ROE and OPRFT estimation models. The following subtitles provide explanations for the results of each regression type for the three models (ROA, ROE and OPRFT) reported in this paper.

4.5.1 The Effect of Board Structure on Firm Performance: ROA Model

This study employed the random effect model to investigate the influence of board size on the financial performance, specifically measured by ROA, of consumer goods companies listed in Nigeria. The random effect regression model's outcome is displayed in Table 7.

Table 7: *Result of Random Effect Regression Model for ROA*

Variable	Coef.	t	p>t
Constant	1.3501	4.13	0.000***
Independent:			
BEXP	0.4733	1.76	0.082*
BOWN	-0.4804	-3.33	0.000***
Control:			
FSIZE	0.0481	3.92	0.000***
FLEV	0.3074	2.65	0.008***
Observations		100	
No. of groups		10	
Wald chi2(7)		53.37	
Prob> chi2		0.000***	
R^2		0.4751	

Note: ***, **, * indicate statistically significance at 1%, 5% and 10%, respectively. BEXP=Board expertise, BOWN= Board Ownership, FSZE=Firm Size, FLEV=Firm Leverage"

Source: Researcher's Analysis (2023)

The Random Effect regression result shows that board expertise (BEXP) has a positive and marginally significant effect on ROA ($\beta = 0.4733$, $p < 0.10$), implying that increased board expertise improves firm profitability. Board ownership (BOWN) has a negative and statistically significant effect on ROA ($\beta = -0.4804$, $p < 0.01$), indicating that higher board ownership reduces profitability. Firm size (FSIZE) and firm leverage (FLEV) both exert positive and significant effects on ROA at 1% significance level. The model is statistically significant overall (Wald chi2 = 53.37, $p < 0.01$) and explains about 47.5% of variations in ROA.

4.5.2 The effect of Board Structure on Firm Performance: Return on Equity Model

A PCSEs regression is used to analyse the influence of board structure (board size, board independence, board meeting, board expertise, and board ownership) on the financial performance (ROE) of consumer goods companies listed in Nigeria. In order to address the issue of heteroscedasticity in the ROE model, the PCSEs regression method, as proposed by Bailey and Katz (2011) and Reed and Ye (2011), was employed. Presented in Table 8 are the results of PCSEs regressions for the ROE model.

Table 8: *Result of PCSEs Regression for ROE Model*

Variable	Coef.	t	p>t
Constant	0.6295	7.49	0.000***
Independent:			
BEXP	-0.0279	-0.41	0.682
BOWN	-0.0659	-1.34	0.181
Control:			
FSIZE	-0.0188	-3.84	0.000***
FLEV	-0.0193	-0.88	0.377
Observations		100	
No. of Groups		10	
Av. Obs per group		10	
Wald chi2(7)		60.43	
Prob> chi2		0.000***	
R^2		0.4253	

Note: ***, **, * indicate statistically significance at 1%, 5% and 10%, respectively. BEXP=Board expertise, BOWN= Board Ownership, FSZE=Firm Size, FLEV=Firm Leverage"

Source: Researcher's Analysis (2023)

The PCSE regression result for the ROE model shows that the overall model is statistically significant (Wald chi2 = 60.43, $p < 0.01$) with an explanatory power of 42.53% (R^2 = 0.4253). Board expertise (BEXP) and board ownership (BOWN) have negative but insignificant effects on return on equity, as their p-values exceed 0.05. Among the control variables, firm size (FSIZE) has a significant negative effect on ROE ($p < 0.01$), indicating that larger firms tend to record lower returns on equity. However, firm leverage (FLEV) has a negative but insignificant relationship with ROE.

5. Conclusion and Recommendations

5.1 Summary

The main conclusions derived from the results of the three regression models in this work are as follows:

The findings revealed that board expertise and board ownership have negative but statistically insignificant effects on return on equity (ROE), indicating that they do not significantly influence the financial performance of the sampled firms. The study further found that firm size has a significant negative effect on ROE, suggesting that larger firms tend to experience lower profitability in terms of shareholders' returns. In addition, firm leverage was found to have a negative but insignificant relationship with ROE. Overall, the regression model was statistically significant and explained about 42.53% of the variations in ROE.

5.2 Conclusion

The objective of this study was to investigate the influence of board structure (including board expertise, and board ownership) on the financial performance (ROA, ROE, and OPRFT) of consumer goods companies listed in Nigeria from 2013 to 2022. Based on the obtained results, the study draws the conclusion that: There is a positive but statistically negligible effect of board size on Financial Performance, as assessed by Return on Asset

(ROA). It exerts a substantial adverse influence on the financial performance (return on equity) of consumer products companies listed in Nigeria, although with a negligible beneficial effect on financial performance (operating profit). However, this discovery defies agency theory, which assumes that the size of the board of directors enhances the financial success of companies.

5.3 Recommendations

The present study has formulated the subsequent recommendations.

The management of consumer products businesses listed in Nigeria should prioritise board ownership and guarantee that the topics addressed at the meetings are exclusively aimed at achieving the set goals of the organisations.

It is recommended that consumer goods businesses raise the shareholding percentages of its directors in order to synchronise their interests with those of the company. This alignment would enable them to prioritise the overall interest of the company over their own, thereby improving financial performance.

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ACCOUNTING INFORMATION SYSTEM QUALITY AND FINANCIAL MANAGEMENT PRACTICES IN FEDERAL TERTIARY INSTITUTIONS IN ADAMAWA STATE

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Abstract

This study examines how the quality of Accounting Information Systems (AIS) affects financial management in federal tertiary institutions in Adamawa State, Nigeria. It draws on the DeLone and McLean Information Systems Success Model (2016), breaking AIS quality into four dimensions: system quality, information quality, process quality, and service quality. The research used a quantitative cross-sectional survey design. Primary data were generated from 145 purposively selected staff members at federal universities, polytechnics, and colleges of education, all of whom completed a structured questionnaire. The data were analysed using the Ordinary Least Squares (OLS) regression. All four AIS quality dimensions had a statistically significant influence on financial management. System quality had more significant effect followed by service, information, and process quality. The study recommends that federal tertiary institutions invest significant funds in reliable, user-friendly AIS infrastructure. Staff need proper training to get financial data entry right and process automation is necessary in making financial reporting more consistent. Furthermore, technical support needs to be responsive enough to actually solve problems when they come up. The findings add to a growing body of literature on information systems and public-sector financial *management, offering lessons particularly relevant to higher education institutions in developing economies.*

Keywords: Financial management, system quality, information quality, process quality, services quality, federal tertiary institutions.

1. Introduction

Financial management remains a critical determinant of organisational sustainability and success across sectors and regions worldwide. Nigeria presents a compelling case in the discourse on financial management within tertiary institutions. In Nigeria, federal tertiary institutions have long contended with financial mismanagement (Nwaiwu & Oluka, 2021). More recently, however, these institutions have adopted policies such as the Integrated Payroll and Personnel Information System (IPPIS) and the Government Integrated Financial Management Information System (GIFMIS) in order to curb resource mismanagement and increase transparency (Olabode & Adetoro, 2023). The results, however, have been uneven. While improvements in payroll management and budget tracking have been recorded, notable gaps persist in user satisfaction, system quality, and information quality (Abutu et al., 2019; Omohwovo et al., 2021). These gaps raise concerns about the effectiveness of AIS frameworks in strengthening financial management, particularly in tertiary institutions in Adamawa State, Nigeria.

Achieving sound financial management in tertiary institutions is a necessary matter beyond operational sustainability. This is because financial management shapes academic excellence and contributes to national development. A huge amount of public funds goes through the federal universities and polytechnics in Nigeria. It is expected that tertiary institutions must manage public funds responsibly in order to fulfil their core mandates (Mabera, 2020). To do that, they must practice prudent budgeting, maintain transparent expenditure tracking, and provide timely financial reporting. Yet irregular funding, bureaucratic bottlenecks, and weak internal controls routinely undermine these goals (Ajah & Chigozie-Okwum, 2019). A good AIS structure is necessary for tackling these problems. This is because it helps automate financial processes, reduce human error, and strengthen data integrity. The capacity of AIS to genuinely improve financial management depends on system quality, the relevance and reliability of the information it produces, the efficiency of the financial processes it supports, and the responsiveness of its service infrastructure (Onaolapo & Olanrewaju, 2024).

Accounting information systems are integrated frameworks designed to collect, process, and report financial data in support of managerial and operational decision-making. Within tertiary institutions, it provides a structured platform for managing funds and monitoring expenditures. It is also directly responsible for producing financial statements that meet regulatory requirements. The quality of institutional decision-making is contingent of the accuracy and timeliness of the information that the AIS generate.

The role of AIS in modern financial management is well established: they automate routine tasks, enable real-time reporting, and strengthen internal control mechanisms (Gunawan & Nengzih, 2023). Ogohi and Victor (2019) and Khan (2021) both found that AIS adoption yields measurable gains in financial performance and operational efficiency, provided the system is well-designed, user-friendly, and supported by adequate management backing. In federal tertiary institutions across Adamawa State, strategic AIS deployment could realistically address persistent financial management failures that undermine institutional performance.

The financial mismanagement has led to delays in financial reporting, weak budgetary control, and recurring resource leakages, reflecting this reality. Despite the rollout of IPPIS and GIFMIS, financial mismanagement, payroll irregularities, and inefficient fund utilisation persist (Olabode & Adetoro, 2023). These persistent problems raise legitimate concerns about the functionality and effectiveness of existing AIS in delivering the financial management improvements they were designed to produce. Technology-driven solutions have been introduced, yet federal tertiary institutions in the state continue to struggle with financial control, transparency, and accountability.

Existing literature provides useful insights into how AIS shapes organisational performance, though significant gaps remain, specifically concerning federal tertiary institutions in Nigeria. Studies on AIS in Nigerian tertiary institutions have concentrated heavily on southern regions, leaving institutions in the northeast, including those in Adamawa State, largely underexplored (Abutu et al., 2019; Omohwovo et al., 2021). Few studies have assessed the combined and individual effects of system, information, process, and service quality on financial management in the education sector. While the broader relationship between AIS and organisational performance is well documented (Ogohi & Victor, 2019; Khan, 2021), direct empirical links between specific AIS components and financial management outcomes in tertiary institutions remain limited. This study addresses these gaps by providing empirical evidence that is region-specific, variable-focused, and theoretically grounded.

Accordingly, this study examines the effect of AIS quality dimensions, namely system quality, information quality, process quality, and service quality, on financial management in federal tertiary institutions in Adamawa State, Nigeria. The scope covers federal universities and polytechnics within the state, given their role in administering public funds and their adoption of government-mandated systems such as IPPIS and GIFMIS. The study focuses on financial management dimensions such as budgeting, expenditure tracking, internal controls, and financial reporting as shaped by the identified AIS components.

The data were collected in November, 2025, which defines the study's temporal scope. The target respondents include finance officers, internal auditors, bursary staff, and AIS users who engage directly with financial processes. The geographical scope is restricted to Adamawa State, whose distinct socio-economic and infrastructural conditions may produce AIS implementation outcomes that differ meaningfully from those observed elsewhere in Nigeria.

2. Literature Review and Hypotheses Development

Financial Management

Financial management sits at the heart of organisational governance, covering the strategies and processes involved in planning, controlling, and monitoring financial resources to achieve institutional goals. Mang'ana et al. (2024) describe it as the set of practices and decisions that guide optimal fund utilisation, ensuring both sustainability and value creation. Within federal tertiary institutions, financial management extends well beyond routine bookkeeping. It encompasses strategic budgeting, resource allocation, expenditure monitoring, internal control, and the preparation of statutory financial reports. These institutions must maintain fiscal discipline while simultaneously delivering on their academic and developmental mandates. Mabera (2020) makes the point plainly: effective financial management in tertiary institutions is indispensable for preventing wastage, fraud, and fund misappropriation, all of which erode institutional credibility and performance when left unchecked.

System Quality

System quality is one of the most consequential factors in determining whether an accounting information system succeeds or falls short. It captures the technical attributes that make an information system reliable, sound, and genuinely usable. DeLone and McLean (2016) describe it as the degree to which a system is technically robust, flexible, and easy to navigate, enabling productive interaction between users and the system itself. Gunawan and Nengzih (2023) examined how system quality, information quality, and security shaped user satisfaction with SAP S4/Hana at PT Hakaaston in Indonesia. Their findings showed that system quality produced measurable gains in user satisfaction, enabling smoother financial operations and more reliable reporting.

Fitriati et al. (2020) looked at AIS success and its effect on accounting information quality within village credit institutions in Indonesia. Using SEM-PLS on responses from accounting personnel, they found that system quality significantly influenced the accuracy and timeliness of financial information, which in turn strengthened financial management practices. Putra et al. (2020) examined system quality and user satisfaction within village credit institutions in Denpasar City, Indonesia. SEM analysis confirmed that system quality had a significant positive effect on user satisfaction, translating into better financial reporting and control outcomes. Muda et al. (2020) investigated AIS adoption in Indonesian local government banks, focusing on user satisfaction and financial reporting reliability. Regression analysis showed that system quality was central to system acceptance, which supported accurate and timely financial reports essential for sound financial management. On this basis, the study hypothesised that:

H1: System quality has a significant positive effect on the financial management of federal tertiary institutions in Adamawa State.

Information Quality

Information quality is another defining dimension of AIS success. It describes the characteristics of system outputs, particularly their usefulness for decision-making purposes. DeLone and McLean (2016) define it as the degree to which a system produces information that is accurate, complete, timely, and relevant to user needs. Normelindasari and Solichin (2019) investigated information quality within student web applications at Budi Luhur University, Indonesia, exploring its contribution to user satisfaction. Regression analysis confirmed that information quality substantially improved satisfaction with system services. Pratiwi and Mujadilah (2021) looked at how information quality affected user satisfaction in mobile banking applications in Indonesia. Applying regression analysis, they found that information quality positively influenced both user satisfaction and secure financial transactions. The study, however, did not address the broader AIS environment or the financial management practices of educational institutions. Iskandar (2015) examined AIS success factors in Indonesian manufacturing firms, using SEM to demonstrate that information quality significantly influenced system success and indirectly supported financial management by strengthening data integrity. The private sector orientation of that study, though, limits how directly its findings apply to public tertiary institutions. This leads to the second hypothesis:

H2: Information quality has a significant positive effect on the financial management of federal tertiary institutions in Adamawa State.

Process Quality

Process quality is a defining component of accounting information systems, reflecting how well system processes are designed and executed in pursuit of organisational goals. Gunawan and Nengzih (2023) define it as the degree to which system workflows and procedures are streamlined, logical, and capable of meeting both operational and strategic organisational needs. Daryanto (2022) investigated how process quality, alongside system quality and information quality, influenced user satisfaction in the personnel information systems of the Indonesian Army Crypto and Cyber Centre. Using SEM on data from military personnel handling sensitive records, the study found that strong process quality substantially improved user satisfaction, which in turn supported accurate personnel records and the administrative controls necessary for budget planning. Lestari et al. (2023) examined how process quality shaped user satisfaction with finance management system applications in Indonesian local government offices. Regression analysis of survey data from finance officers showed that strong process quality drove satisfaction and supported timely budget execution and financial reporting.

Manuari and Putra (2023) addressed process quality indirectly within their study on information quality and service quality in AIS for Indonesian public sector entities. Using SEM, they found that clear, logical system processes reduced errors and strengthened user confidence, enabling smoother financial operations. Process quality was not, however, treated as a standalone construct, and financial management was inferred rather than directly measured. Meiryani (2023) explored how process quality, system quality, and information quality influenced accounting information quality in higher education institutions in Bandung, Indonesia. SEM results showed that process quality was central to ensuring financial data was processed accurately and on schedule, which improved reporting practices. Pratiwi et al. (2020) examined transaction processing system optimisation in Indonesian minimarkets. Though outside a tertiary institution context, the study showed that strong process quality improved transaction accuracy and inventory control, indirectly reinforcing financial integrity.

H3: Process quality has a significant positive effect on the financial management of federal tertiary institutions in Adamawa State.

Service Quality

Service quality addresses the support dimension of accounting information systems, focusing specifically on the assistance provided to system users. Putra et al. (2020) define it in the AIS context as the capacity of support personnel to deliver timely assistance, resolve user problems, and maintain consistent system availability. Manuari and Putra (2023) examined service quality and information quality in relation to user satisfaction in AIS for Indonesian public sector entities. SEM analysis showed that service quality strengthened user satisfaction and confidence in financial data, indirectly producing better financial management outcomes. Pratiwi and Mujadilah (2021) studied service quality within mobile banking applications in Indonesia. Regression analysis confirmed that service quality significantly affected both user satisfaction and secure transaction processing. The mobile application focus, however, means the study did not engage with the broader AIS service support environment characteristic of tertiary institutions.

Triantono et al. (2021) investigated service quality in public sector information systems at the National Narcotics Agency in Indonesia. SEM analysis revealed that service quality shaped user satisfaction and confidence in system outputs. While this confirms the relevance of service quality in public sector systems, the study did not directly examine financial management processes. Oweis (2022) looked at how AIS-related service quality influenced customer satisfaction in Saudi commercial banks. Regression analysis showed that strong service quality improved satisfaction, which supported more accurate financial reporting. The banking context and customer orientation, however, differ considerably from the internal financial management processes of tertiary institutions. There is a study of service quality within management information systems and its effect on e-marketing efficiency in Jordanian telecommunications organisations. SEM analysis found that service quality strengthened system usage and supported strategic outcomes. Drawing on this body of evidence, the study states the following hypothesis:

H4: Service quality has a significant positive effect on the financial management of federal tertiary institutions in Adamawa State.

The DeLone and McLean Information Systems Success Model, first proposed in 1992 and subsequently refined in 2003 and 2016, remains one of the most widely accepted frameworks for evaluating information system performance and effectiveness. It identifies six dimensions that define IS success: system quality, information quality, service quality, use, user satisfaction, and net benefits. System quality, information quality, and service quality represent the core system attributes that drive outcomes. These dimensions shape the degree to which users engage with the system and how satisfied they are with it. Collectively, they contribute to net benefits, which in this study translate into improved financial management outcomes including transparency, timely reporting, accurate budgeting, and effective expenditure control.

3. Data and Methods

This study adopts a survey research design to examine the effect of accounting information systems (AIS) on the financial management of federal tertiary institutions in Adamawa State, Nigeria. The target population for this study is Bursary, Audit, ICT, Establishment, Procurement staff of Modibbo Adama University Yola, Federal College of Education Yola and Federal Polytechnic Mubi in Adamawa State who provide the researcher with the necessary information required for the research questions. Base on the information obtain from the staff under this research. The researcher was able to obtain that one hundred and fifty-eight (158) Users of GIFMIS and REMITA constitute the number of staff Users in the Federal Tertiary Institution in Adamawa state. The entire population of 158 staff serve as sample size using census sampling technique as the number is small enough to be considered entirely.

Table 1: Population and Sample

S/N	Institutions	Staff
1	Modibbo Adama University, Yola	64
2	Federal College of Education, Yola	43
3	Federal Polytechnic Mubi	51
4	**Total**	**158**

Source: The Authors (2026)

The primary source of data for this study is original data collected directly from respondents who are knowledgeable about the use of accounting information systems (AIS) and financial management practices within federal tertiary institutions in Adamawa State. These respondents include finance officers, bursary department staff, internal auditors, and other personnel who interact regularly with AIS in the course of managing institutional finances.

The primary instrument for data collection in this study is a structured questionnaire, designed to obtain quantifiable data on the effect of accounting information systems (AIS) components on financial management in federal tertiary institutions in Adamawa State. The development of the questionnaire was guided by the conceptual and Empirical review of the study, as well as by established instruments used in prior AIS and financial management research. Items were adapted from validated scales in relevant literature to ensure that they accurately reflect the constructs of system quality, information quality, process quality, service quality, and financial management. For example, the measures of AIS quality components were informed by instruments used in studies such as DeLone and McLean (2016), Gunawan and Nengzih (2023), Fitriati et al. (2020), and Muda et al. (2020), which have been applied successfully in similar organisational contexts.

The questionnaire consists of several sections. The first section collects demographic information such as respondent's role, years of experience, and institution type. Subsequent sections contain items relating to each of the independent variables, system quality, information quality, process quality, and service quality, as well as the dependent variable, financial management. Each section includes multiple statements designed to capture the respondent's perceptions and experiences on a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). The instruments were subjected to face and content validity checks by experts in accounting, information systems, and educational management to ensure clarity, relevance, and appropriateness. The study conducted a pilot study on a sample of 35 respondents in order to determine the reliability of the instruments. The pilot test returned a Cronbach Alpha above 0.70, indicating that the instruments are reliable.

The primary technique of analysis for this study is multiple regression, which was used to examine the effect of accounting information system (AIS) components on financial management in federal tertiary institutions in Adamawa State. Regressions is used to test the hypotheses at 5%/0.05 level of significance. The regression analysis was executed using the Statistical Package for Social Sciences (SPSS) version 22. To achieve the objectives of this study, the following statistical model for this study was utilized.

$$Fin\_M_i = \alpha_0 + \beta_1 Sys\_Q_i + \beta_2 Inf\_Q_i + \beta_3 Pro\_Q_i + \beta_4 Ser\_Q_i + \varepsilon_i$$

Where:
Fin_M = Financial Management
Sys_Q = System Quality
Inf_Q_i = Information Quality
Pro_Q = Process Quality
Ser_Q = Service Quality
ε = Error term
α = Constant
Table 2 below presents the measurement of variables

Table 2: Measurement of Variables

Variable	Description of Measurement Focus	Source
Financial Management	Assesses how the AIS supports accurate reporting, budgeting efficiency, internal control, timely decisions, and financial accountability.	Gunawan and Nengzih (2023)
System Quality	Measures perceptions of system usability, user-friendliness, reliability, responsiveness, and integration across departments.	Fitriati et al. (2020),
Information Quality	Evaluates the accuracy, timeliness, completeness,	Muda et al. (2020)

Variable	Description of Measurement Focus	Source
	relevance, and consistency of AIS-generated information.	
Process Quality	Captures efficiency of transaction processing, clarity of system procedures, reduction in manual processes, error minimization, and compliance support.	Manuari and Putra (2023)
Service Quality	Assesses availability and competence of technical support, effectiveness in resolving system issues, adequacy of user training, and reliability of support services.	Gunawan and Nengzih (2023)

Source: Authors' Analysis from various literature (2026)

4. Discussion of Results

This section presents the study results, including the demographic profile of respondents, descriptive analysis, correlation analysis, diagnostic tests and regression result. The section also presents the test of hypotheses and the discussion of major findings. Analysis of the demographic profile of respondents were not presented for brevity.

Table 3: Analysis of Questionnaires Distributed to Respondent

S/N	Questionnaires Analysis	Number	Percentage (%)
1	Questionnaires Distributed	158	100
2	Returned Questionnaires	149	94.3
3	Unused Questionnaires	4	2.5
4	Used Questionnaires	145	91.7
5	Respondent Response Rate	0.94	94.0
6	Percentage of Used Questionnaires	0.917	91.7

Source: Authors' Analysis 2026

A total of 158 questionnaires were distributed to respondents for the study. Out of these, 149 were successfully returned, representing a high response rate of 94%. However, 4 of the returned questionnaires were found to be unusable, leaving 145 valid questionnaires for analysis. This accounts for 91.7% of the total distributed questionnaires. The high response rate and large proportion of usable questionnaires provide a reliable basis for the analysis and strengthen the validity of the research findings.

To assess the internal consistency of the measurement instrument used in this study, a reliability test was conducted using Cronbach's Alpha (α). A Cronbach's alpha value of 0.70 and above is generally considered acceptable for demonstrating good internal consistency. The results of the reliability test are presented in Table 4.

Table 4. Cronbach Alpha Reliability Test

Variable	Average Item Covariance	Scale Reliability Coefficient
Fin.M	0.727	0.854
Sys_Q	0.672	0.870
INF_Q	1.310	0.986

PRO_Q	1.224	0.930
SER_Q	0.984	0.867

Source: Author's Analysis (2026)

From Table 4, all the five constructs surpassed the recommended minimum threshold of 0.70, with values ranging from 0.854 to 0.986, thereby confirming the reliability of the instrument. These results validate the use of the questionnaire items for further statistical analysis, including regression modelling, and confirm that the study's measurement scales are both robust and dependable.

Descriptive Statistics

The descriptive statistics summarized the central tendency and variability of the responses related to each variable using mean and standard deviation. This is useful in understanding the basic characteristics of the data. Table 5 below provides the summary statistics of the variables.

Table 5: Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
FIN_M	145	3.582	0.839	2	5
SYS_Q	145	3.595	1.135	2	5
INF_Q	145	3.519	1.133	2	5
PRO_Q	145	3.696	1.160	2	5
SER_Q	145	3.538	1.115	2	5

Source: Author's Analysis (2026)

From Table 5, financial management (FIN_M), has a mean of 3.582 and a standard deviation of 0.839. This suggests that, on average, respondents agreed that the use of AIS contributes positively to budgeting, internal control, reporting accuracy, and financial decision-making within their institutions. System quality (SYS_Q) had a mean score of 3.595 and a standard deviation of 1.135. This implies a generally favourable assessment of the technical features of the AIS, including system reliability, interface design, response time, and usability.

Information quality (INF_Q) has a mean of 3.519 and a standard deviation of 1.133. This means that respondents agreed moderately that the AIS generates timely, accurate, complete, and relevant financial data. Process quality (PRO_Q) reveals a mean score of 3.696 and a standard deviation of 1.160, indicating a strong perception that AIS facilitates efficient financial processes. Service quality (SER_Q) has an average response of 3.538 and a standard deviation of 1.115, reflecting that respondents agree that user support services are satisfactory. The relatively high dispersion of responses points to uneven experiences among institutions.

Correlation Analysis

The correlation analysis was conducted to examine the strength and direction of the relationship between the dependent variable (financial management) and the independent variable (accounting information system quality).

Table 6: Correlation Analysis

Variable	FIN_M	SYS_Q	INF_Q	PRO_Q	SER_Q

FIN_M	1.0000				
SYS_Q	0.4101	1.0000			
INF_Q	0.3436	-0.0039	1.0000		
PRO_Q	0.3596	0.0220	-0.0295	1.0000	
SER_Q	0.3712	-0.0482	0.0297	0.1419	1.0000

Source: Author's Analysis (2025)

The results from Table 6 reveal that all the four independent variables are positively correlated with financial management. System quality (SYS_Q) showed the strongest positive correlation with FIN_M at r = 0.4101, indicating a moderate relationship. Service quality (SER_Q) also demonstrated a positive correlation with FIN_M at r = 0.3712. This implies that institutions where users receive effective support, such as technical assistance, training, and maintenance, tend to perform better in terms of financial management. Likewise, process quality (PRO_Q) and information quality (INF_Q) had correlations of 0.3596 and 0.3436 respectively. These figures show that streamlined workflows and the availability of accurate, timely, and relevant information contribute to financial control and accountability within institutions. Interestingly, the intercorrelations among the independent variables themselves were very low. For example, SYS_Q and INF_Q had a negligible correlation of -0.0039, while SYS_Q and PRO_Q showed 0.0220. These low values suggest minimal multicollinearity, meaning the independent variables are sufficiently distinct and are likely measuring different dimensions of AIS performance.

Multiple Regression

The Ordinary Least Squares (OLS) regression was conducted to determine the effect of the four dimensions of accounting information systems quality on financial management (FIN_M) in federal tertiary institutions in Adamawa State. Table 7 below provides the OLS regression results.

Table 7: OLS Regression

Variable	Coef.	Std. Err.	T	P>t
SYS_Q	0.311	0.041	7.57	0.000
INF_Q	0.255	0.041	6.20	0.000
PRO_Q	0.226	0.041	5.57	0.000
SER_Q	0.253	0.042	6.00	0.000
CONS	-0.165	0.2901	-0.57	0.570
R-Squared		0.5285		
Adj R-Squared		0.5161		
F.		42.87		
Prob		0.0000		

Source: Author's Analysis (2026)

The coefficient of determination (R-squared) indicates that about 52.85% of the variation in financial management practices is explained by the independent variables. The F. value of 42.87 (p-value of 0.0000), indicates that the model is well fitted. Regarding the independent variables, a significant positive effect on financial management is observed. This means that the study accepts all the four alternate hypotheses. The results suggest that AIS quality (system, information, process, and service) have significant positive effect on financial management.

System Quality (SYS_Q) returns a positive and significant effect on financial management ($\beta = 0.311$, $p = 0.000$). The finding of a positive and significant effect on financial management aligns with several prior studies. For instance, Gunawan and Nengzih (2023) found that improved system quality enhances user satisfaction and facilitates smoother financial operations, while Fitriati et al. (2020) demonstrated that system quality significantly improves the accuracy and timeliness of accounting information, thereby strengthening financial management practices. Similarly, Muda et al. (2020) reported that robust system quality enhances system acceptance and supports reliable financial reporting in public sector banks. The present study extends these findings to the context of Nigerian federal tertiary institutions, confirming that reliable, flexible, and user-friendly systems are critical for effective budgeting, reporting, and financial control. However, unlike some earlier studies that emphasize indirect effects through user satisfaction, this study establishes a direct linkage between system quality and financial management outcomes, thereby contributing additional empirical clarity.

Information quality (INF_Q) shows a coefficient of 0.255, a t-value of 6.20 and a p-value of 0.000. This indicates that a one-unit increase in system quality, all things being equal, will lead to a 0.311 increase in financial management scores. The finding informs the critical role that a reliable and user-friendly AIS play in effective budgeting, control, and financial reporting. This result is consistent with extant literature. Studies such as Normelindasari and Solichin (2019) and Pratiwi and Mujadilah (2021) reported that high-quality information enhances user satisfaction and supports better decision-making processes. Iskandar (2015) further showed that information quality contributes to AIS success and financial management by ensuring data integrity. The current study corroborates these findings by demonstrating that accurate, timely, and relevant financial information significantly improves financial management practices in tertiary institutions. Nonetheless, a point of divergence lies in the study's sectoral focus; while most prior research was conducted in private or digital banking contexts, this study provides evidence from public educational institutions, thereby enhancing the generalisability of the AIS-information quality relationship.

Process quality (PRO_Q) returns a significant positive effect, with a coefficient of 0.226, a t-value of 5.57 (p-value 0.000). The result demonstrates that positive role of efficient, logical, and automated processes in financial operations. Streamlined processes likely reduce errors, promote compliance, and enable more transparent handling of transactions. The positive influence of process quality on financial management is equally supported by previous empirical works. Daryanto (2022) and Lestari et al. (2023) found that well-structured system processes improve user satisfaction and facilitate efficient financial operations such as budgeting and reporting. Meiryani (2023) also emphasized that process quality ensures accurate and timely processing of financial data, which is essential for effective reporting practices.

Service quality (SER_Q) has a coefficient of 0.253, a t-value of 6.00 and a p-value of 0.000. These results indicate that support services such as ICT assistance and training positively impact financial management outcomes. This result highlights the importance of continuous technical support and user empowerment in maximising the benefits of AIS. The result is consistent with prior studies such as Manuari and Putra (2023) and Triantono et al. (2021), who reported that service quality improves user confidence and satisfaction with system outputs. Similarly, Oweis (2022) found that effective service support enhances the reliability of financial reporting. Thus, the present study confirms that timely technical support, responsiveness, and system reliability contribute directly to improved financial management practices in federal tertiary institutions. In contrast to some previous studies that focus on customer-facing environments such as banking and telecommunications, this study emphasizes internal service support within institutional AIS environments, thereby providing context-specific insights relevant to the public education sector.

5. Conclusions and Recommendations

The study concludes that Accounting Information System (AIS) quality plays a significant and positive role in enhancing financial management practices in federal tertiary institutions in Adamawa State. The findings demonstrate that when AIS platforms are technically robust, produce accurate and timely information, operate through well-structured processes, and are supported by efficient service mechanisms, institutions experience improved financial reporting, budgeting accuracy, transparency, and expenditure control. These results reinforce the relevance of the DeLone and McLean Information Systems Success Model, confirming that high-quality system attributes translate into tangible organisational benefits. Overall, the study highlights that strengthening AIS quality is not merely a technical requirement but a strategic imperative for improving financial accountability and operational efficiency in public tertiary institutions. Based on the findings in this study and the conclusions thereof, the study recommends that:

i. Management of federal tertiary institutions, in collaboration with government agencies such as the Federal Ministry of Education, should invest in upgrading AIS infrastructure to ensure high system quality, including reliability, flexibility, and user-friendliness.
ii. Institutions should establish strong data management and validation frameworks to improve information quality, ensuring that financial data generated is accurate, timely, and relevant for effective decision-making.
iii. Regular training programs should be organised for finance and administrative staff, while dedicated IT support units should be strengthened to enhance process and service quality, ensuring efficient system usage and prompt resolution of technical issues.

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