



FORENSIC AUDITING AND HOLISTIC INTERNAL CONTROL MECHANISM: A TACTICAL STRATEGY FOR ENHANCING ORGANIZATIONS PERFORMANCE

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Abstract: Financial and economic fraud has become more widespread in recent years, with perpetrators continuously evolving their techniques to exploit new vulnerabilities and the rising incidence of financial irregularities and corporate fraud has intensified the need for robust forensic auditing to enhance transparency, strengthen internal controls, and safeguard firm profitability. This study aspires to objectively explore the relationship between forensic auditing practices (fraud detection rate), holistic internal control mechanism and organisation performance (firm profitability for years 2015 - 2024). Employing ex-post facto research design, extracted data were analysed for descriptive statistics; the robust regression technique hypothesis testing and the findings showed that individually, fraud detection rate, and firm size exert significant positive influence on efforts directed at enhancing tactical strategy for organizations performance while increasingly combining too many internal control mechanisms without quality assurance in focus dampens tactical strategy for organizations performance. Fraud detection rate, holistic internal control mechanism and firm size jointly exert significant influence on efforts directed at enhancing tactical strategy for organizations performance: NPM (F-stat = 17.85; p-value = 0.0000) and ROA (F-stat = 6.75; p-value = 0.0004). It was therefore concludes that fraud detection rate, holistic internal control mechanism and firm size exert significant influence on efforts directed at enhancing tactical strategy for organizations performance. The study therefore recommends that organisations and her management should foster a culture of integrity as policy that can drive a layered, holistic control framework embedded in data-driven technology with continuous training for employee and all stakeholders

Keywords: Forensic Auditing, Holistic Internal Control Mechanism, Tactical Strategy, Organisation Performance, Net Profit Margin, Return on Assets, Nigeria.

JEL Classification: M41, M42

Introduction

Financial and economic fraud has become more widespread in recent years, with perpetrators continuously evolving their techniques to exploit new vulnerabilities. According to Efenyumi and Obaro (2025) these adaptive

strategies, influenced by changes in societal trends and environmental factors, present serious obstacles for organizations aiming to secure their assets. As a result, the need for advanced security frameworks and effective fraud detection systems has grown considerably. One such

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approach is forensic auditing which is a specialized investigative process used in both the public as well as the private sectors to detect and address fraudulent financial practices. Forensic auditing plays a vital role in combating fraud and corruption by providing courts and legal institutions with accurate data and reliable evidence to support legal proceedings. This function assists in determining whether fraud has occurred, based on legal standards. Often referred to as forensic accounting, this practice is carried out by Certified Public Accountants (CPAs) trained in investigative techniques to uncover or prevent financial misconduct (Efenyumi & Obaro, 2025).

By integrating accounting, auditing, and investigative expertise, forensic audits are instrumental in identifying fraud and financial crimes within organizations (Egwanwor & Edori, 2025). Unlike traditional audits, which focus mainly on financial accuracy and regulatory compliance, forensic audits delve deeper, aiming to expose and document fraudulent actions. These audits often involve collecting and presenting evidence suitable for legal use, and forensic auditors may serve as expert witnesses in court. According to Tardi (2025), forensic auditing is particularly crucial in cases of fraud, embezzlement, or misrepresentation, as it helps to break down complex financial data into understandable forms, thereby facilitating the pursuit of justice. Moreover, forensic audits go beyond conventional methods by analyzing the substance behind transactions to detect possible asset misappropriation. For example, an employee might create a fake account to siphon funds, a tactic that could evade detection in a standard audit if the transaction appears legitimate. In such scenarios, a company might receive an unqualified audit opinion despite concealed fraudulent activity. Forensic auditing is designed to uncover these deceptions through meticulous investigation (Mircheska et al., 2020).

In Nigeria, the use of forensic auditing has been on the rise, especially in response to major corporate scandals that have shaken investor trust and exposed the shortcomings of traditional audits. Research has demonstrated that forensic auditing can significantly improve organizational outcomes by enhancing fraud detection capabilities,

improving audit quality, and reinforcing internal controls (Okafor & Nwankwo, 2023). For instance, studies focusing on Nigerian banks reveal a strong correlation between forensic auditing practices and higher net profit margins, highlighting its positive influence on economic performance (Darwazeh et al., 2024). As corporate misconduct and regulatory demands continue to grow, organizations increasingly acknowledge the necessity of implementing effective forensic auditing processes to protect their financial integrity and detect anomalies (Albrecht et al., 2020).

In today's corporate environment, the rising incidence of financial irregularities and corporate fraud has intensified the need for robust forensic auditing to enhance transparency, strengthen internal controls, and safeguard firm profitability. Firms in the financial service sector, particularly commercial banks listed on the Nigerian Exchange Group, have frequently come under scrutiny due to lapses in financial reporting and governance practices, raising concerns about the effectiveness of internal forensic audit mechanisms. While forensic auditing is widely recognized as a strategic approach to fraud detection and risk mitigation, empirical evidence assessing its direct impact on firm profitability within Nigeria's financial service sector remains sparse. Specifically, there is limited research on how core components of forensic auditing, such as fraud detection rate, audit quality, audit frequency, and internal control effectiveness, collectively influence the economic performance of commercial banks. Existing literature suggests that forensic auditing can improve organizational outcomes (Okafor & Nwankwo, 2023; Darwazeh et al., 2024), yet few studies provide a comprehensive framework that connects these variables in the context of Nigerian listed companies facing financial governance challenges. Despite several regulatory interventions and compliance requirements imposed on banks, there is a notable gap in scholarly investigations evaluating how forensic auditing correlates with profitability indicators like return on assets or net profit margin.

This study therefore aims to fill this gap by focusing on listed within the Nigerian Exchange Group to explore the



relationship between forensic auditing practices and firm profitability. By analyzing the effects of fraud detection rate, audit quality, audit frequency, and internal control effectiveness on profitability, the research seeks to offer actionable insights for enhancing forensic auditing frameworks and guiding audit-related policy reforms within Nigeria.

Consequently our study precisely examines:

1. Whether fraud detection rate has significant influence on the net profit margin of listed firms on the Nigerian Exchange Group (NGX).
2. The impact of holistic internal control mechanism net profit margin of listed firms on the Nigerian Exchange Group (NGX).
3. To assess the relationship between fraud detection rate and the returns on assets of listed firms on the Nigerian Exchange Group (NGX).
4. To determine the extent to which holistic internal control mechanism influences the returns on assets of listed firms on the Nigerian Exchange Group (NGX).

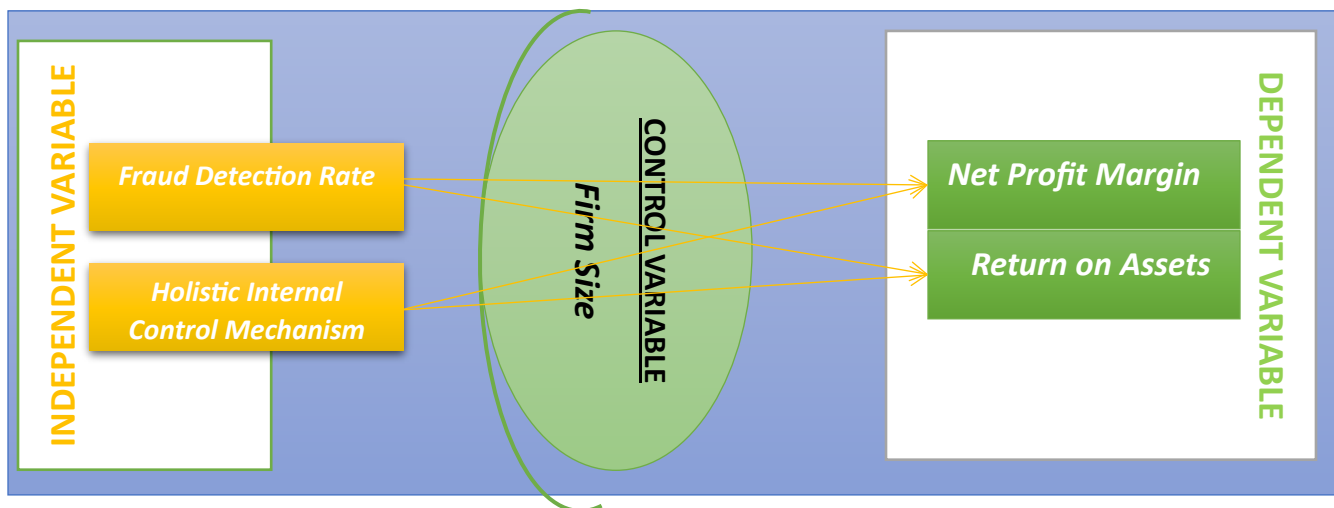
Thus, this study speculates that:

H₀₁: Fraud detection rate and holistic internal control mechanisms do not have significant influence on the net profit margin of listed firms on the Nigerian Exchange Group (NGX).

H₀₂: Fraud detection rate and holistic internal control mechanisms do not have significant influence on the returns on assets of listed firms on the Nigerian Exchange Group (NGX).

Conceptual Review

The conceptual framework of this study is designed to illustrate the relationship between the independent and dependent variables. The independent variables are forensic auditing proxied by fraud detection rate (FDR) and holistic internal control mechanism proxied by composite internal control indicators. The dependent variable is firms' performance, which is assessed using its primary measures; net profit margin (NPM) and Return on Assets (ROA).



Source: Authors conceptualization



Forensic Auditing

"Forensic" implies "fit for use in a court of law," and forensic accountants often adhere to these criteria. The three main facets of forensic accounting are investigation, dispute resolution, and litigation assistance. Ajagun et al. (2025) "Forensic" relates to the application of systematic methods and procedures to investigate crime. The objective of forensic auditing extends beyond compliance; it serves as an investigative tool to support litigation, fraud risk management, and corporate governance reforms (Koenig Solutions, 2024). A forensic audit's purpose is the detection or deterrence of a wide variety of fraudulent activities. The use of auditors to conduct forensic audits has grown significantly, especially where fraud involves financial issues.

The core functions of forensic auditing include fraud detection, financial crime investigation, and litigation support. Fraud detection involves examining financial records to uncover financial misstatements, asset misappropriation, and corruption schemes (Nandini & Ajay, 2021).

Forensic audit is considered to be an independent professional judgment, which can present findings as to records, inventories, or the presentation thereof that is of such quality and that would be sustainable in some adversarial legal proceeding, or within some judicial or administrative review. Apart from this, lack of financial surveillance; forensic audit, investigation, and deterrence skills; computer assisted review and document review; and level of competence of both management and finance and accounts staff on fraud and fraudulent activities are several of the threats to the going concern of firms which financial statements may not portray, this is where forensic accountants are needed in the view of accountants. It is hoped that fraud detection tools if applied in firms would detect and prevent fraudulent activities and related irregularities (Lawal et al., 2023). By leveraging automated fraud detection models, forensic auditors can proactively monitor financial activities and detect fraud before it escalates into larger financial crimes.

Another fundamental forensic auditing technique is transaction monitoring and anomaly detection. Continuous

real-time monitoring of financial transactions enables organizations to identify suspicious activities, such as irregular fund transfers, unauthorized withdrawals, and duplicate payments, which may indicate fraudulent behavior (Okafor et al., 2025).

Fraud Detection as measure of Forensic Auditing

Fraud is an intentionally deceptive action designed to provide the perpetrator with an unlawful gain or to deny a right to a victim. Types of fraud include tax fraud, credit card fraud, wire fraud, securities fraud, and bankruptcy fraud. Fraudulent activity can be carried out by one individual, multiple individuals or a business firm as a whole. Fraud is intentional deception to secure unfair or unlawful gain, or to deprive a victim of a legal right (Li et al., 2023). Robust financial fraud detection is crucial for protecting assets and maintaining financial system integrity. Traditional models lack flexibility, while machine learning models are often complex and difficult to interpret. (Li et al., 2025) Financial fraud represents a highly significant problem, resulting in grave consequences across business sectors and impacting people's daily lives. Its occurrence leads to reduced confidence in the economy, resulting in destabilization and direct economic repercussions for stakeholders. (Aros et al., 2024).

The primary duty of an auditor is to examine whether the financial statements reveal a true and fair view of the state of affairs of the firm and the auditors' secondary task is preventing and detecting errors and frauds. Auditors are not essentially the most suitable group of experts to perform the assignment of fraud detection. The firm, by establishing appropriate fraud prevention yardsticks within the firm, can detect and prevent non-management fraud. (Ede et al, 2025). According to Okafor et al (2025) financial institutions are the backbone of the global economy, facilitating capital flow, investment, and economic growth. However, they are also highly susceptible to fraudulent activities, which can result in significant financial losses and erode public trust. The ACFE estimates that organizations lose approximately 5% of their annual revenues to fraud, amounting to trillions of



dollars globally. High-profile corporate scandals, such as the collapses of Enron and WorldCom, have underscored the devastating impact of financial fraud on stakeholders, investors, and the broader economy. The core functions of forensic auditing include fraud detection, financial crime investigation, and litigation support. Fraud detection involves examining financial records to uncover financial misstatements, asset misappropriation, and corruption schemes (Nandini & Ajay, 2021). Financial institutions use automated fraud detection systems to assess transactional risks, cross-reference financial data with known fraud schemes, and alert regulatory bodies about potential violations (Adu & Abdulkafeel, 2025).

The effectiveness of financial fraud detection and prevention depends on the effective selection of appropriate ML techniques to identify new threats and minimize false fraud alarm warnings, responding to the negative impact of financial fraud on organizations (Aros et al., 2024). Mulkataru (2026) stated that detection, is characterized by actions and activities intended to identify and locate fraud prior to, during, and subsequent to the completion of the fraudulent activity. Detection encompasses three closely related activities in the fraud arena: fraud testing, fraud attempts, and fraud successes. The separation is derived from the facts that not all fraud attempts are successful and that not all perceived fraud attempts are intended to be successful. These “tests” are attempts to reverse engineer the current fraud policies and detection activities in order to locate vulnerability. Thus, detection in the fraud arena must include revealing the existence of fraud testing and fraud attempts, as well as successful frauds (Adewumi & Akinrinade, 2021).

Holistic Internal Control Mechanism

The internal control system serves as a form of assurance for confirming accurate reporting and the attainment of a firm’s objectives, particularly in light of the increasing demand for information from internal and external stakeholders. (Hamed, 2023). Nowadays, internal control is of utmost importance because it is a necessity for every economic organization to assist in the fulfilment of administrative and financial objectives, as well as to ensure

an orderly and efficient conduct of its economic activities. Broadly speaking, it encompasses the set of methods, procedures, structure, policies and organizational plan, as well as the skills and virtues of the workers in the company. This will help to protect its assets, help to verify the veracity and accuracy of accounting and administrative information on which decisions can be based.

Globally it has been shown how deficiencies in internal control in private and public companies can cause errors in administrative and accounting information, which makes it difficult to achieve their goals and objectives of organizations (Onyema et al., 2024). According to Adu and Abdulkafeel (2025) internal control of an organization’s structure is the work and authority flows, people and management of information systems which are designed to help the organization accomplish its goals and objectives. Economic especially financial performance is said to directly impact the internal control of an institution. To focus on control environment, internal audit, risk assessment and control activities form the main components of an internal control system.

Hamed (2023) asserted that an internal is a process, effected by an entity’s board of directors, management and other personnel, designed to provide reasonable assurance regarding the achievement of effectiveness and efficiency of operations, reliability of financial reporting, compliance with applicable laws and regulations, and safeguarding of assets. The objective of this process is to provide a guarantee that a firm can attain its goals; therefore, the existence of an efficient and well-controlled system in the firm will have a clear influence on the company’s performance.

Literatures have a plethora of specific metrics for measuring internal control effective. However, this study conceived measuring internal control effectiveness from a holistic approach using composite variables (a combination of various variables) which includes:

1. Audit committee size
2. Audit committee gender
3. Audit committee diligence
4. Audit committee independence
5. Audit committee accounting expertise



6. Audit firm type (Big 4 = 1, otherwise = 0)
In this study, we shall measure internal control mechanism with a composite variable comprising all the metrics for internal control effectiveness using the Principal Component Analysis (PCA) to generate a single variable that we used to proxy internal control mechanism.

Firm Performance

Profit is defined as observed revenue minus observed cost, whereas profit inefficiency is defined as the gap between maximal profit and observed profit. Alternatively, one can define multiplicatively the concept of profitability as revenue divided by cost (Barbero & Zofio, 2023). According to Efenyumi and Nworie (2025), every corporate organization's primary goal is to maximize profits, and manufacturing organizations are no exception. It is impossible to maximize shareholder wealth without making a profit. Making a profit guarantees the business's survival. Any business's ability to remain in operation and make a profit depends on its profitability. As a result, it serves as the company's engine. A company's ability to make profits determines how long it will remain in business, and this is viewed to be the primary element affecting the company's reputation. While profitability is a relative idea, profit is an absolute phrase. Profitability is simply the ability to make profits. So, a firm is profitable if it is able to achieve excess revenue over cost, or better put, more revenue than cost of operation. Profitability refers to the capacity of a business to gain a turnover on investment over time. Businesses rely on profitability to survive, which is why it's important to make it one of the primary goals of a business (Barbero & Zofio, 2023). Profitability is an important measure of the economic activity and performance of a business. It also refers to the ability of a business to earn a profit in the regular course of its operation. A business has high profitability when its operations are efficient and when it can cover its short-term obligations. Dahmash et al., (2021) stated that profitability is a firm's ability to use its investment to generate earnings exceeding the cost of these investments. Profitability stands as a paramount factor for any company, representing a key measure of its worth and aligning with the objective

of enhancing shareholder wealth. It essentially signifies an enterprise's capacity to derive profits from its various business activities, highlighting how effectively management can harness market resources to generate earnings (Lero et al., 2024). Profitability ratios, such as those evaluating profitability concerning sales and investment, are widely employed to gauge a company's overall efficiency and effectiveness in its operations. Profitability is intrinsically linked with the aim of maximizing wealth for shareholders, often prompting investments in current assets only when they promise a satisfactory return. Thus, maintaining profitability necessitates adept management of receivables (Efenyumi & Nworie, 2025).

Net Profit Margin as a measure of Firm Performance

Net Profit Margin (NPM) is also called the revenue to sales ratio. Net profit margin is equal to net income divided by net sales. This ratio shows what percentage of net income is earned from each sale. The greater this ratio, the better the company's ability to earn high profits (Gayatri & Harinuridin, 2024). Profit Margin (NPM) interprets the level of efficiency of a company's operational activities. This level of efficiency is shown by how large a percentage of net income can be achieved from all sales activities in a certain period. Claudi and Indrati (2024) asserted that the Net Profit Margin (NPM) ratio is used to measure the company's ability to obtain net profit from main operational activities. This ratio is considered adequate because it assesses the company's primary operations as a whole so that many investors believe the balance before deciding to invest in a company. It can be said that the increase in Net Profit Margin (NPM) will affect the level of company performance so that it will improve and can increase stock prices, and with that will lead to investor confidence to invest in the company (Putri & Purwanto, 2024).

Net Profit Margin (NPM) is a key profitability ratio that measures the percentage of net income generated from total revenue. It reflects a firm's ability to control costs and operate efficiently, thereby serving as an essential indicator of overall firm performance. In evaluating the financial



health and strategic viability of a company, especially in capital-intensive sectors like oil and gas, NPM provides insight into how well management translates revenue into actual profit. It is calculated as:

$$\text{Net Profit Margin} = (\text{Net Profit})/\text{Revenue} \times 100$$

This ratio measures a company's ability to convert revenue into actual profit after accounting for all expenses, including operating costs, interest, taxes, and depreciation. A higher net profit margin indicates greater efficiency and profitability, while a lower margin may suggest higher costs or pricing pressures.

Returns on Assets as a measure of Firm Performance

According to Amilah and Habibi (2023) the relationship between Return on Assets (ROA) and firms' profitability is also well-established in financial analysis. A positive return on assets (ROA) often correlates with strong overall performance metrics such return on equity (ROE) A high ROA typically reflects strong cost management, operational effectiveness, creditworthiness and investment potentials, contributing positively to firm performance in converting investments in assets into net income (Akinbowale et al., 2020). Conversely, a declining or negative ROA may indicate inefficiencies, excessive costs, or external shocks. Measuring the operational efficiency along with management effectiveness in an organisation; generating profit from its total assets is calculated as:

$$\text{Return on Assets} = (\text{Net profit})/\text{Total assets} \times 100$$

Thus, the success in implementing organizations operational strategies is a function of its internal condition endued from its effectiveness in generating profit from its assets measured as ROA.

Theoretical Review

This study is anchored on the Stakeholder's Theory and the Fraud Diamond Theory.

Stakeholder Theory

Stakeholder Theory posits that organizations should create value for all stakeholders; employees, customers, suppliers, and the community, rather than focusing solely on shareholder profit maximization (Freeman, 1984 cited

by Efenyumi et al., 2022). In the banking sector, this approach has gained prominence as banks recognize the importance of balancing financial performance with social responsibility. This paper examines the relationship between stakeholder management and profitability in commercial banks, with a focus on Nigeria.

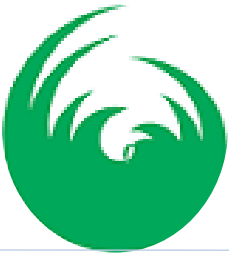
In the banking industry, stakeholder theory emphasizes the need for banks to consider the interests of various groups. For instance, banks that engage in Corporate Social Responsibility (CSR) activities can enhance their reputation, leading to increased customer loyalty and, ultimately, improved profitability (Hossain & Ahamed, 2021). Additionally, effective stakeholder management can lead to better risk management and compliance, which are crucial for economic performance. Tubotamuno-Ojas and Ellah (2023) stated that board composition and audit committee size positively influenced Return on Equity (ROE), suggesting that strong governance structures, which consider stakeholder interests, can enhance profitability.

It is evidence that integrating stakeholder theory into banking operations can lead to improved profitability. By addressing the needs and expectations of various stakeholders, banks can build stronger relationships, mitigate risks, and enhance their reputation, all of which contribute to financial success.

Fraud Diamond Theory

The Fraud Diamond Theory proposed by Wolf and Hermanson formed base on which this study is hinged. The theory argues that fraud often cannot occur unless the individual also has the necessary skills, traits and the opportunity to execute it. In order to mitigate potential risks, organizations must implement and rigorously monitor checks and balances. Preventing fraud and boosting performance requires the involvement of skilled professionals, such as forensic auditors, who are capable of detecting and investigating suspicious activity.

The Fraud Diamond Theory provides the conceptual basis for this research because it highlights how individual traits and capabilities influence the likelihood of fraudulent behavior. Forensic auditors, therefore, need to assess not



only the internal control environment but also the personal attributes of employees that may pose fraud risks. By doing so, they can design effective control strategies and ensure thorough oversight to safeguard organizational resources (Gbegi & Adebisi, 2013).

Eventually, deploying seasoned investigators knowledgeable and skilled in detecting risks and recommending sound control practices would not only reduce fraud but also improve performance in organisations.

Empirical Reviews

Existing Studies on the Relationship between Forensic Auditing and Financial Performance:

In an attempt to determine if forensic auditing contributes to better firm performance, Ozigbo and Orife (2023) reported that a significantly negative correlation exists between forensic auditing and corporate fraud incidents and that adopting forensic auditing practices enhances mitigating financial fraud risks, safeguard resources, and maintain trust and credibility with stakeholders strengthening business sustainability and long-term success. This position was corroborated by the works of Oyedokun and Durowaiye (2022) which indicated that forensic auditing significantly contributes to fraud prevention in the banking sector; improve their risk management frameworks by ensuring financial integrity and operational transparency. Similarly, Oluyide (2025) used a deductive approach to analyze the impact of forensic accounting techniques in mitigating electronic fraud in Nigeria's deposit money banks. The findings buttress the role of forensic auditing in enhancing financial transparency and accountability while reducing fraudulent activities, thereby protecting assets and maintaining stakeholder confidence through enforcement of regulatory practices in promoting forensic auditing as a standard industry practice to uphold financial stability and integrity.

In another development, the research of Okemwa et al., (2023) established that forensic fraud investigation affects financial performance positively and significantly by positively influencing corporate profitability and financial reporting reliability, and preventing fraud in

financial statements. Okafor et al., (2025) assessed the impact of forensic auditing in strengthening corporate transparency and fraud prevention in financial institutions reported that integrating forensic auditing better positioned firms to detect irregularities early, mitigate risks, and improve overall operational efficiency and profitability and enhance financial system integrity.

Furthermore, Putri and Purwanto (2024) explored how forensic accounting practices influence company performance by examining return on assets (ROA), return on equity (ROE), and net profit margin (NPM) in the automobile industry it was revealed that a strong positive correlation exists between forensic accounting practices and financial performance, highlighting its role in improving profitability while Awotomilusi and Johnson (2025) that examined the effect of forensic auditing on the financial performance of selected food and beverage firms in Nigeria established that forensic auditing techniques, competence, and forensic data analytics are powerful predictors of economic performance (net profit margin). Recent work of Udeh et al., (2024) which examined the role of big data in detecting and preventing financial fraud in digital transactions by employing advanced machine learning algorithms and predictive modeling techniques and reported that big data analytics can analyze complex data configurations, identify deviations from normal behavior, and enable early detection of fraudulent transactions that enhances risk assessment models as well as promoting real-time fraud detection mechanisms that monitor transactions in real-time and flag suspicious activities for further investigation. It further observed that forensic audit influences the profit after tax of Nigerian banks and also revealed that forensic audit has a significant effect on retained earnings and dividends per share of Nigerian banks.

An analysis of existing literature on forensic auditing and financial performance highlights several gaps and inconsistencies, indicating areas where further research is needed. While numerous studies confirm the positive role of forensic auditing in detecting and preventing financial fraud, there is a shortage of longitudinal studies that assess the long-term effects of forensic auditing on financial



performance, leaving questions about its sustained impact and effectiveness over time. The indispensability for this investigation is highlighted by this gap. Also several studies assess firm financial performance using Return on Assets (ROA), Return on Equity (ROE) and Earnings per share (EPS), this study assesses firm financial performance using Net Profit Margin and Return on Assets (ROA). The practical relevance of this study is that it will help businesses and policymakers understand whether forensic auditing leads to lasting improvements in financial performance. Also, a longitudinal approach allows for a more robust analysis of causal relationships.

Data and Research Methods

This study adopts a quantitative research design that primarily relies on secondary data to explore the impact of forensic auditing and holistic internal control mechanism

on the performance of firms listed on the Nigerian Exchange Group (NGX). The population for this study consists of all companies listed on the Nigerian Exchange Group (NXG) for the period from 2015 to 2024. Due to the clear-cut boundaries between operating and financing activities, financial companies (mainly banks); having same reporting structures have been systematically selected and sampled for this study. The eligibility conditions include:

1. Sensitivity and accuracy: Only companies with updated information on annual report up to 2024 with the Nigerian Exchange Group (NXG) are selected.
 2. Time period: Only the companies listed on the Nigerian Exchange Group (NXG) prior to 2015 and have not been delisted until the end of 2024.
- Consequently, Out of 13 listed banks, only 10 banks were selected as eligible sample for this study.

Table 1: Description and Measurement of Variables

Variables	Metrics	Acronym	Measurement
Dependent Variable	Net Profit Margin	NPM	Net Profit for each year divided by the revenue multiplied by 100 %.
	Return on Assets	ROA	Net profit for each year divided by the total assets multiplied by 100%
Independent Variables	Fraud Detection Rate	FRDR	Number of fraud cases detected per audit divided by the total number of audits conducted within the period.
	Holistic Internal Control Mechanism	HICM	Composite variable comprising all the metrics for internal control effectiveness using the Principal Component Analysis (PCA) to generate a single ICE variable.
Control Variable	Firm Size	FRSZ	Natural logarithm of firm’s total assets.

Source: Authors’ Compilation (2026)

Model Specification

Two regression models have been developed to test the relationship between forensic auditing, holistic internal control mechanism and the firm’s economic performance. The regression model will be specified implicitly as follows:



Firms Performance (FP) = f(Forensic audit + Holistic internal control + Control Variables) + ϵ

$NPM_{it} = \beta_0 + \beta_1FRDR_{it} + \beta_2HICM_{it} + \beta_3FRMS_{it} + \epsilon_t$ Model 1

$ROA_{it} = \beta_0 + \beta_1FRDR_{it} + \beta_2HICM_{it} + \beta_3FRMS_{it} + \epsilon_t$ Model 2

Where:

NPM = Net profit margin.

ROA = Return on assets.

FRDR = Fraud detection rate

HICM = Holistic internal control mechanism

FRMS = Firm Size

β_0 = Intercept term

$\beta_1- \beta_3$ = Coefficients of independent variables

ϵ = Error term

Results and Discussion

Table 2: Descriptive Statistics

	NPM	ROA	FRDR	HICM	FRSZ
Firm-Year-Obs	100	100	100	100	100
Mean	19.24399	0.018279	2153.484	0.136401	21.95084
Std. Dev.	13.49904	0.013796	5088.266	0.991019	1.039748
Jarque-Bera	10.72341	37.80705	387.1340	21.21687	1.547938
Probability	0.004693	0.000000	0.000000	0.000025	0.461179

Source: Authors' Computation (2026)

The table 2 above presents the summary of descriptive statistics result for selected measures of central tendencies (mean), measures of variability (standard deviation) and measures of distribution (Jarque-Bera) along with total no of observations (firm-year-obs). The result conveyed that the total numbers of observations for ten (10) firms for ten years were 100.

Particularly, the mean value of the dependent variables NPM and ROA were 19.24399 and 0.018279 with their respective standard deviation values of 13.49904 and 0.013796. These low Std.Dev. values are indication that data for NPM and ROA relatively exhibited similar trends on the average of 19.24399 and 0.018279 among the sampled firms though with insignificant magnitude of perceived deviations across sectors throughout the sampled period as proved by the Jarque-Bera and its

probability of 10.72341 (0.004693) and 37.80705 (0.000000).

The clarifying variables (FRDR and HICM) had mean values of 2153.484 and 0.136401 with their respective standard deviations of 5088.266 and 0.991019 an indication that fraud detection rate varied widely across sampled companies and sectorial categories, while holistic internal control mechanism of sampled corporations appears to be relatively similar across sectorial categories in Nigeria. This highly skewed distribution is confirmed by the result of the Jarque-Bera (387.1340 and 21.21687) with a P-value of 0.000000 and 0.000025 respectively.

The control variable (FRSZ) exhibited similar trends with low variability (1.039748) around its mean (21.95084) showing an insignificant deviation from normal distribution as confirmed by the result of the Jarque-Bera (1.547938) with a P-value of 0.461179.



Table 3: Correlation Matrix

	NPM	ROA	FRDR	HICM	FRSZ
NPM	1.000000	0.917902	0.370634	-0.27604	0.479757
ROA	0.917902	1.000000	0.409051	-0.228201	0.331566
FRDR	0.370634	0.409051	1.000000	-0.087555	0.330359
HICM	-0.27604	-0.228201	-0.087555	1.000000	0.066491
FRSZ	0.479757	0.331566	0.330359	0.066491	1.000000

Source: Authors’ Computation (2026)

The correlation matrix expounds the direction of relationship between variables in our study. Table 3 above, revealed that the correlation coefficient between predicted variables, NPM and ROA, one of the predictor variables, FRDR, and FRSZ (control) were positive except the other predictor variable, HICM which was negative; inferring that a unit rise in Net Profit Margin (NPM) and Returns on Assets (ROA) was as a result of the resultant increase in the frequency of detected fraud and increase in the size of the firm (FRSZ); while a combination of fewer quality

control measures would improve the economic performance of firms.

The highest coefficient between the predictor variables stood at 0.479757 between NPM and FRSZ below the threshold of 0.8 (see Efenyumi, Okoye & Nwoye, 2022) depicting that our our specified model is fit and free from collinearity hitches. This position, we further established from Variance Inflation Factor (VIF) and the the Breush-pagan/Cook Weisberg (B-P/CW) tests below:

Table 4: VIF & B-P/CW Results

Variable	VIF	1/VIF
FRDR	1.14	0.878815
FRSZ	1.13	0.881688
HICM	1.02	0.982115
Mean VIF	1.10	
	chi2(1)	Prob > chi2
NPM	15.96	0.0001
ROA	27.16	0.0000



Source: Authors' Computation (2026)

Table 4 revealed that there are no signs of multicollinearity. From the output in the table, the mean VIF of 1.10 with VIF scores ranging from 1.02 to 1.14 clearly demonstrated that all variables together with the mean VIF were not above the maximum thresholds (10), dismissing uncertainties on the possible existence of multicollinearity.

Nevertheless, the outcome of fitted values: Chi2(1) of 15.96 (p-value = 0.0001 < 0.05) as well as Chi2(1) of 27.16 (p-value = 0.0000 < 0.05) for NPM and ROA have suggested that the assumption of constant variance (null hypothesis) should be rejected thus confirming the

presence of heteroskedasticity in the formulated model. With the outcome of the above result, we shall not rely on the OLS regression technique but adopt the Robust Regression techniques in testing the study's Hypotheses.

Test of Hypotheses

Hypothesis I

H₀₁: Fraud detection rate and holistic internal control mechanisms do not have significant influence on the net profit margin of listed firms on the Nigerian Exchange Group (NGX).

Table 5: Robust Regression result for testing of hypothesis I

Dependent Variable	Organisation Performance (NPM)			
	Coef.	Std. Err.	t	P > t
FRDR	0.0006476	0.0002355	2.75	0.007
HICM	-3.504402	1.143711	-3.06	0.003
FRSZ	5.510672	1.15052	4.79	0.000
_CONS	-103.1479	25.09771	-4.11	0.000
F(3, 96)	17.85			
Prob > F	0.0000			
OBS	100			

Source: Authors' Computation (2026)

The outcome of the robust regression as reported in Table 5 revealed that FRDR including the control variable (FRSZ) had positive regression coefficients of 0.0006476, and 5.510672 respectively while HICM had a negative regression coefficient of 3.504402. Essentially, Fraud detection rate and firm size exert significant positive influence on efforts directed at enhancing tactical strategy for organizations performance while increasingly combining too many internal control mechanisms without quality assurance in focus dampens tactical strategy for organizations performance.

Although, the t-stat suggests that when taken individually, fraud detection rate (FRDR) may not significantly influence Net profit Margin (NPM), contrarily, the F-stat

of 17.85 (p-value = 0.0000), recorded that fraud detection rate, holistic internal control mechanisms and firm size jointly exert significant influence on efforts geared towards enhancing tactical strategy for organizations performance. This result thus confirms that organisations performance measures, NPM, is a strategic function of systematic application of forensic auditing (fraud detection rate) and holistic internal control mechanisms among listed firm in Nigeria.

Hypothesis II

H₀₂: Fraud detection rate and holistic internal control mechanisms do not have significant influence on the



returns on assets of listed firms on the Nigerian Exchange Group (NGX).

Table 6: Robust Regression result for testing of hypothesis II

Dependent Variable	Organisation Performance (ROA)			
Independent Variables	Coef.	Std. Err.	t	P > t
FRDR	1.24e-07	2.17e-07	0.57	0.57
HICM	-0.0024673	0.0010533	-2.34	0.21
FRSZ	0.0036845	0.0010596	3.48	0.001
_CONS	-0.065476	0.0231144	-2.83	0.006
F(3, 96)	6.75			
Prob > F	0.0004			
OBS	100			

Source: Authors’ Computation (2026)

The outcome of the robust regression as reported in Table 6 revealed that FRDR including the control variable (FRSZ) had positive regression coefficients of 0.000000124, and 0.0036845 respectively while HICM had a negative regression coefficient of 0.0024673. Basically, FRDR and FRSZ exert significant positive influence on efforts directed at enhancing tactical strategy for organizations performance while increasingly combining too many internal control mechanisms without quality assurance in focus dampens tactical strategy for organizations performance.

Although, the t-stat suggests that when taken individually, fraud detection rate (FRDR) may not significantly influence Returns on Assets (ROA), contrarily, the F-stat of 6.75 (p-value = 0.0004), recorded that fraud detection rate, holistic internal control mechanisms and firm size jointly exert significant influence on efforts geared towards enhancing tactical strategy for organizations performance. This result thus confirms that organisations performance measures, ROA, is a strategic implications of applying forensic auditing (fraud detection rate) and holistic internal control mechanisms among listed firm in Nigeria.

Conclusion and Recommendations

The results obtained from the analyses and their discussions in the study apparently answered the quest for the effects of fraud detection rate, and holistic internal control mechanisms on tactical strategy for enhancing organisations performance. The research offered actionable insights for enhancing forensic auditing frameworks and guiding audit-related policy reforms within Nigeria. The result revealed that fraud detection rate, and firm size exert significant influence on efforts directed at enhancing tactical strategy for organizations performance while increasingly combining too many internal control mechanisms without quality assurance in focus (holistic internal control mechanism) exert insignificant influence tactical strategy for organizations performance.

Obviously, this study tacitly concluded that fraud detection rate, holistic internal control mechanism and firm size exert significant influence on efforts directed at enhancing tactical strategy for organizations performance and that organisation that uphold high fraud detection



techniques systematically and frequently coupled with a holistic and integrated internal control mechanisms will not only minimise the incidence of losses (especially financial losses), operate efficiently (through assets safeguarding and risk management), but also enhance organisations reputation and earn stakeholders trust (accumulated goodwill) that engenders marketability for profitability.

The study hereby recommends that organisations and her management should foster a culture of integrity as policy that can drive a layered, holistic control framework embedded in data-driven technology with continuous training for employee and all stakeholders.

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