*International Journal of Intellectual Discourse (IJID)*
**ISSN: 2636-4832 Volume 9, Issue 1. March, 2026**

# Mediation and Moderation of Forensic Techniques by Audit Assurance Services to Enhance Fraud Inspection

*****Alhassan Haladu and Jane Frances Akubueze

*Department of Accounting, Faculty of Social & Management Sciences, Northwest University, Kano, Kano State, Nigeria.*

*Corresponding Author: kirikichichi@gmail.com

**Abstract**

*Despite existing controls, financial fraud persists in Nigeria, necessitating more robust investigative measures. This study evaluates how audit assurance services mediate and moderate the relationship between modern forensic accounting tools and effective fraud management. Using a survey design, the researchers collected data from 125 professionals across 25 Nigerian auditing firms, analyzing the results via SPSS 27and Smart-PLS 4. The findings reveal a significant statistical connection. With $R^2$ values of 0.6650 (mediating) and 0.6840 (moderating), the results demonstrated that the synergy between forensic techniques and audit assurance substantially influences fraud detection and prevention. While this interaction impacts the economy both positively and negatively, it ultimately proves that integrated scrutiny is superior to traditional methods alone. Hence, organizations should hire specialized forensic accountants and auditors to strengthen fraud deterrence. The entire Nigerian economic system must be encourage to apply advanced forensic tools to identify vulnerabilities within financial statements. By replacing traditional auditing methods with forensic rigor, Nigeria can better uncover obscured fraud and improve overall financial integrity.*

**Keywords:** Forensic Accounting, Fraud Inspection, Assurance Services.

## 1. Introduction

Forensic accounting serves as a specialized intersection of accounting, auditing, and investigative rigor designed to combat financial crimes. In Nigeria, where complex regulations and high corruption levels pose significant challenges, the role of forensic accountants is vital for protecting organizational integrity. These professionals must possess a unique blend of technical expertise and soft skills to dissect bank records and uncover schemes like money laundering or embezzlement. Audit assurance services, particularly external audits, function as critical moderators and mediators in fraud detection. While traditional audits provide reasonable assurance regarding financial accuracy, they are not primarily designed to catch all fraud. However, they serve as a "gateway" by identifying red flags that trigger more intensive forensic investigations (Haladu, 2025). In Nigeria, the impact of fraud is devastating, leading to massive financial losses, diverted development resources, and diminished foreign investment. Despite the necessity of internal controls, sophisticated fraudsters often exploit technological gaps and regulatory ambiguities. Furthermore, the effectiveness of the audit-forensic link is often hindered by issues regarding auditor independence and a lack of specialized investigative skills among traditional auditors.

Recent literature consistently confirms a significant relationship between forensic accounting and fraud management. However, existing studies often suffer from methodological flaws, such as poorly defined sample populations, over-reliance on conceptual frameworks rather than empirical reality, and the use of outdated methodologies (e.g., basic ratio analysis) instead of modern techniques (Abbas & Ali, 2025; Dkhar et al., 2025). Notably, there is a lack of comparative research exploring how modern forensic tools (specifically Big Data analytics, Artificial Intelligence (AI), and Blockchain technology) interact with the mediating and moderating influences of internal audits, external audits, and regulatory compliance. This research fills these gaps by examining the synergy between cutting-edge forensic tools and audit assurance within the Nigerian context. It is uniquely grounded in the "Every Contact Leaves a Trace" theory and "Client Importance" theory, philosophies previously underutilized in this field. The primary objective is to evaluate the extent to which assurance functions (internal, external, and compliance) facilitate or enhance the effectiveness of forensic accounting in managing fraud. Consequently, this study is structured around four central hypotheses aimed at assessing these interactive roles.

$H_{01}$ There is no significant relationship between modern forensic accounting technique and financial statement fraud management.

$H_{02}$ There is no significant relationship between audit assurance services and financial statement fraud management.

$H_{03}$ There is no significant influence of the mediated impact of audit assurance services on the association between modern forensic accounting technique and financial statement fraud management.

$H_{04}$ There is no significant influence of the moderated impact of audit assurance services on the association between modern forensic accounting technique and financial statement fraud management.

This paper examines the critical role of audit assurance services as both a mediator and moderator between modern forensic accounting and fraud management. Following a structured five-part format, it reviews relevant literature and frameworks, details the research methodology, and concludes with an analysis of data and practical implications.

## 2. Literature Review

### 2.1 Theoretical Frameworks

To understand how auditor expertise moderates the link between forensic accounting skills and fraud prevention, a strong theoretical foundation is essential. This review traces the evolution of fraud literature from individual behavioral theories to modern, multi-dimensional frameworks, synthesizing diverse perspectives to establish the intellectual basis for this study. The relationship described can be visualized as an interaction where the effectiveness of forensic skills depends on the level of the auditor's specialized knowledge.

**2.1.1 Every Contact Leaves a Trace: -** Locard’s Exchange Principle, the concept that "every contact leaves a trace" is a fundamental framework in this study. Originally used in physical forensics, it is applied here to financial environments where every transaction acts as a contact point. This principle asserts that even well-concealed fraud inevitably leaves evidence, which can be uncovered through forensic investigation or audit assurance services (Bode, 2019). In a financial context, this principle suggests that the "contact" between a fraudster and the accounting system always produces a digital or paper trail. While Forensic Accounting focuses on the "trace" to reconstruct illegal activities, Audit Assurance uses the "trace" to verify the accuracy and integrity of financial reporting.

**2.1.2 Client Importance Theory: -** Client Importance Theory, which is deeply rooted in economic bonding theory, examines how a client's financial weight influences an auditor's objectivity. According to Rosemary and Emmanuel (2012), when a single client represents a substantial portion of an audit firm's revenue, the resulting economic pressure may lead the firm to prioritize the relationship over audit quality. As Haladu (2025) posits, this financial dependency often discourages auditors from aggressively challenging management, thereby weakening fraud detection and reporting integrity. Consequently, this theory provides a critical foundation for this research, highlighting the need for both forensic accountants and external auditors to scrutinize management activities despite these underlying economic ties. The theory suggests a "tug-of-war" between financial incentives and professional ethics. High revenue concentration creates a "bond" that can cloud judgment. Reduced skepticism leads to overlooked "traces" of fraud. Using forensic techniques and assurance services as safeguards against this bias.

**2.1.3 Fraud Triangle Theory**: - Cressey's Fraud Triangle (1953) remains the foundational model for understanding fraudulent behavior, identifying pressure, opportunity, and rationalization as the three essential drivers. In the context of tertiary institutions, these elements manifest as resource scarcity, inadequate internal controls, and a culture that tolerates corruption. Despite its influence, the model faces criticism for its simplistic and static nature, as it often focuses on individual misconduct while neglecting the systemic and social dynamics that facilitate organizational fraud (Haladu, 2025). To address the limitations mentioned (specifically the "static" nature of the Triangle) later researchers expanded the framework to include personal capability and systemic integrity.

**2.1.4 Fraud Diamond Theory**: - In response, Wolfe and Hermanson (2004) proposed the Fraud Diamond by adding capability—the ability to exploit weaknesses and conceal wrongdoing. This refinement addressed the fact that not every individual with motive and opportunity can commit fraud; only those with the necessary skills, authority, and confidence can. Yet, the Diamond theory still assumes a rational actor model and overlooks collective collusion, ethical climate, and digital enablers (Vutumu, 2024).

**2.1.5 Fraud Pentagon and Fraud Hexagon Theory**: - More recent scholars discussed the introduction of the Fraud Pentagon and Fraud Hexagon, integrating factors such as arrogance, collusion, and ethical culture (Mansor & Abdullahi, 2022; Albrecht et al., 2020). These models broaden fraud theory's scope but risk theoretical fragmentation and measurement inconsistency. The multiplicity of constructs complicates empirical testing, and few studies validate them in African institutional contexts. Nevertheless, these models remain useful for identifying the behavioral dimensions that forensic accountants and auditors must address through investigation, analysis, and ethical enforcement (Mansor & Abdullahi, 2022; Albrecht et al., 2020).

**2.1.6 Professional Skepticism and Judgment Theory**: - Professional Skepticism Theory complements behavioral models by detailing how expertise drives fraud detection. Nolder and Kadous (2018) defined skepticism as a dual construct of mindset and attitude, arguing that technical expertise must be paired with a questioning disposition and critical thinking. Supporting this Chui, et al, (2023), found that auditors with a forensic mindset significantly outperform others in fraud risk assessments, suggesting that expertise bolsters both cognitive ability and the motivation to investigate "red flags."

Despite its strengths, the theory is criticized for its difficult operationalization; Hurtt et al. (2020) noted that psychological skepticism can be suppressed by organizational pressures like time constraints and management influence. Nevertheless, it remains a vital framework for understanding how auditor expertise moderates the effectiveness of forensic accounting, allowing auditors to objectively interpret evidence and convert forensic skills into proactive fraud prevention.

**2.1.7 Disengagement Theory**: - Bandura's Moral Disengagement Theory (1999, 2018) provides a psychological framework for understanding how individuals rationalize unethical conduct. By utilizing mechanisms like euphemistic labeling, attribution of blame, and diffusion of responsibility, fraudsters can bypass internal moral standards and eliminate guilt. In the context of Nigerian tertiary institutions, the collective nature of public funding often facilitates a diffusion of accountability, making it easier for perpetrators to justify contract manipulation or the diversion of resources. While forensic accountants counter these behaviors by exposing the gap between evidence and rationalization, auditor expertise is crucial for identifying these psychological patterns (Haladu, 2025). Although critics suggest the theory focuses too heavily on internal cognition while ignoring systemic factors, combining it with institutional theory offers a more holistic view of fraud within complex organizational structures. The theory identifies specific cognitive "shortcuts" that allow individuals to separate their actions from their moral consequences. These are diffusion of responsibility, euphemistic labeling and the auditor's role.

**2.1.8 Resource-Based Theory**: - From a strategic management lens, the Resource-Based View (RBV) and Dynamic Capability Theory provide a framework for institutional fraud prevention. Originally formulated by Barney (1991) and extended by Ellili (2024), RBV suggests that internal resources—such as forensic accounting competencies and auditor expertise—act as strategic assets because they are valuable, rare, inimitable, and non-substitutable. Complementing this some scholars (Teece et al., 2016; Lin & Chen, 2022), argue through Dynamic Capability Theory that institutions must continuously renew these skills to combat evolving threats. Supporting this, empirical evidence from Hashim, Salleh, and Azhar (2021) and Willie (2024) shows that investment in forensic analytics and training significantly reduces fraud. While critics like RBV point to tautological reasoning and the neglect of external political pressures, these theories effectively position auditor expertise as a moderating capability that enhances the practical impact of forensic accounting skills. The integration of these theories suggests that fraud prevention is an organizational "muscle" that must be both possessed (RBV) and regularly exercised (Dynamic Capabilities).

**2.2 Empirical Review**

Despite advancements in the field, identifying and preventing fraud remains a complex challenge requiring innovative solutions. Recent scholarship consistently demonstrates a significant relationship between forensic accounting and fraud management, yet several critical gaps persist in the existing literature. Empirical studies have largely confirmed the efficacy of forensic techniques. Ogah (2025) found significant effects on Nigerian Deposit Money Banks, though the study's inclusion of 25 listed banks is contested due to the nascent status of several entities.[3] Similarly, Mamidu et al. (2021) identified a constructive impact on fraud detection within Ondo State's public sector, but the findings suffer from limited generalizability. In the North-West, Sabo et al. (2025) utilized a large sample from Ministries of Finance to prove that technological and auditing skills

significantly combat fraud, though they noted that auditor self-efficacy remains an insignificant factor.

Broadening the scope, Ngereho-A et al. (2025) surveyed 374 government staff, reinforcing the positive link between forensic skills and fraud management. However, localized studies like that of Ogbaini et al. (2024) in Lagos State reveal institutional weaknesses, such as the absence of dedicated forensic departments and a reliance on rudimentary analytical methods. While Nandini et al. (2021) established that forensic audits enhance management accountability, their methodology was criticized for using basic charts to determine "impact."[4] Furthermore, conceptual contributions by Maulidi et al. (2025) emphasize the need for digital-era forensic curricula in universities, though their work lacks empirical validation.

A synthesis of these studies reveals several methodological and theoretical deficiencies. Many researches rely on poorly defined populations, lack robust theoretical frameworks, or focus on isolated geographical regions. Additionally, some contemporary studies continue to employ outdated analytical techniques, such as simple ratio analysis, failing to capture the complexities of modern financial crime. Crucially, existing literature lacks an investigation into variables that test both the mediating and moderating impacts of modern accounting techniques on fraud management. This study addresses these gaps by integrating Locard's Exchange Principle ("Every contact leaves a trace") and Client Importance Theory—frameworks previously neglected in this context. Moving beyond the standard SPSS analysis used by previous authors, this research employs Smart PLS to conduct a comprehensive comparative analysis across all three tiers of government (local, state, and federal), providing a more realistic and sophisticated understanding of fraud management in the modern era.

The following table summarizes how this study differentiates itself from the reviewed literature:

**Table 2.1 Summary of Literature Gaps**

| Feature | Previous Studies | This Research |
|---|---|---|
| Analytical Tool | Primarily SPSS | Smart PLS (Partial Least Squares) |
| Scope | Single state or sector | Three tiers of government |
| Variable Role | Direct relationship | Mediating and Moderating roles |
| Core Theories | Fraud Triangle/Diamond | Locard's Principle & Client Importance |

## 2.3 The Concept of Forensic Accounting

Forensic accounting is a specialized discipline that merges accounting, auditing, and investigative techniques to examine financial issues for legal purposes. Unlike traditional accounting, which primarily focuses on the preparation and verification of financial statements, forensic accounting aims to identify financial discrepancies, fraud, and misconduct to provide admissible evidence in legal proceedings (Abass & Ali, 2025). This field functions as a form of financial "detective work," dedicated not only to identifying problems but also to determining their scope, nature, and the parties responsible.

More than simple data analysis, forensic accounting involves a rigorous investigative process that includes scrutinizing complex transactions, tracing fund movements, reconstructing incomplete records, and conducting interviews. Professionals in this field are trained to detect patterns and "red flags" indicative of money laundering, embezzlement, or other financial crimes. Success in this area requires a deep integration of financial principles, legal

protocols, and behavioral psychology to effectively uncover and document evidence.

**2.4 The Impact of Technology on Forensic Accounting**

Technology has revolutionized the field of forensic accounting globally and within Nigeria, serving as a critical catalyst for change. According to Al-Zoubi and Al-Taha (2025), the integration of artificial intelligence (AI) and data analytics has transformed modern investigative processes. These advanced tools enable the evaluation of massive datasets to pinpoint suspicious transactions that would be nearly impossible to detect through manual review. Furthermore, technology facilitates the prediction of fraud risks by identifying behavioral patterns and automates essential compliance checks for anti-money laundering protocols.

For instance, specialized software allows investigators to scrutinize bank statements, efficiently identifying cash withdrawal trends or transfers to shell companies—common indicators of fraudulent activity. Ultimately, forensic accounting is a dynamic and essential weapon against corruption, ensuring greater financial transparency. Despite challenges regarding technical capacity and legal frameworks, the increasing reliance on technological integration points toward a promising future (Haladu, 2025). As the global fight against financial crime intensifies, the necessity for ethical, expert forensic accountants continues to grow.

Modern investigations rely on a "Tech Stack" that moves from simple detection to predictive prevention. Big Data Analytics that processes millions of entries to find the "needle in the haystack". The use of AI is also essential to spot "Benford's Law" violations or unusual transaction timing.

**2.5 Financial Statement Fraud**

Financial statements serve as formal records detailing a company's economic activities and performance. These documents are routinely scrutinized by regulatory bodies and auditors to verify accuracy for taxation, investment, and financing purposes. Globally, reporting follows distinct frameworks: U.S. entities typically adhere to Generally Accepted Accounting Principles (GAAP), whereas international firms utilize International Financial Reporting Standards (IFRS). In the Nigerian context, the primary components include the Statement of Financial Position, Statement of Comprehensive Income other P&L Items, Notes to the Accounts, Cash Flow Statement, and specialized reports like the Value Added Statement and Revenue and Expenditure accounts (Haladu, 2025).

Financial statement fraud involves the intentional manipulation of these records to deceive stakeholders by presenting an inaccurately favorable view of a firm's financial health. Common fraudulent tactics include inflating revenue, concealing liabilities, falsifying expenses, and misrepresenting asset values (Ozili, 2015). The motivations for such misconduct are often strategic, primarily aimed at artificially inflating stock prices, meeting the requirements for bond or stock offerings, or attracting unsuspecting investors. The integrity of financial reporting relies on the transparency of several interrelated statements. Fraud occurs when the "links" between these statements are intentionally broken or falsified.

**2.6 Fraud Management**

Fraud is fundamentally defined as intentional deception orchestrated to secure an illegal or unfair advantage at the expense of another (Anipiriworima et al., 2025). This multifaceted issue pervades all economic sectors, eroding institutional trust, distorting market dynamics, and causing substantial financial deficits. According to Dkhar et al., (2025), effective fraud management necessitates a deep exploration of its definitional nuances, common typologies, psychological drivers,

and the various mechanisms designed for detection and response.

Legally, fraud involves the misrepresentation of material facts with the intent to deceive, leading to reliance by a victim and subsequent injury. However, Gbegi and Adebisi (2014) argue that static legal definitions often fail to keep pace with evolving fraudulent schemes. Technological advancements and global trade complexity have introduced novel avenues for dishonesty, such as algorithmic manipulation and phishing, which transform traditional fraud into sophisticated digital threats.

The manifestation of fraud varies significantly by context; organizational fraud may involve the deliberate falsification of financial statements to inflate share prices, whereas consumer fraud encompasses everything from deceptive marketing to complex Ponzi schemes (Gunathilake & Ajwad, 2019). Consequently, modern fraud prevention must function as a multi-layered defense system. Ogbaini et al. (2024), Oluyide (2025), and Ozili (2015) emphasize that while no single method can entirely eliminate risk, a combination of tools—including Artificial Intelligence (AI), cybersecurity protocols, and specialized forensic accounting—drastically enhances an organization's resilience against such acts.

Effective management requires transitioning from reactive detection to proactive, technology-driven prevention layers. The Psychological Layer enables the understanding of "Intent" through behavioral analysis (linking back to the Fraud Triangle). Also, the Technological Layer enhances the utilization of AI and Machine Learning to detect anomalies in real-time. Equally, the Investigative Layer encourages the application of forensic accounting to translate complex "traces" into legal evidence.

### 2.7 Contemporary Forensic Techniques in Perceiving

#### 2.7.1 Big Data Analytics (BDA)

Big Data Analytics suggests a powerful collection for contemporary forensic accounting, providing supreme competences for positive fraud detection, efficient evidence management, and an all-inclusive monetary analysis. However, its incorporation is not without significant encounters connected to data eminence, confidentiality, governing acquiescence, and the critical need for interdisciplinary proficiency (Haladu, 2025). To fully attach the power of BDA, the forensic accounting profession must capitalize heavily in data power, moral guidelines, and uninterrupted professional development. Overwhelming these boundaries will be crucial for BDA to move outside a promising technology to a necessary foundation of functioning forensic investigations in the digital phase.

#### 2.7.2 Artificial Intelligence (AI)

According to Haladu (2025), Artificial Intelligence presents an influential, emergent set of apparatuses for forensic accounting, promising extraordinary efficiency, accuracy, and proactive abilities in identifying and investigating financial wrongdoing. Its capability to process massive data, unearth hidden misappropriations, and automate ordinary tasks is transforming the profession. However, successful incorporation centers on tackling critical tasks related to data dominance and partiality, algorithmic transparency, ethical allegations, and the requisite need for continued human oversight and expertise. As AI technologies developed and regulatory frameworks familiarize, a combined attitude between human experts and intelligent systems will be crucial for AI to truly unlock its full probable as an essential asset in the ongoing fight against financial crime.

#### 2.7.3 Machine Learning (ML)

One of the principal benefits of ML in forensic accounting lies in its unmatched

ability for innovative design appreciation and irregularity detection. ML algorithms can Mann enormous datasets, ascertaining elusive, non-obvious patterns and outliers that mortal detectives might naturally miss (Abdulrahman, 2019). This includes detecting complicated fraudulent schemes, such as refined money laundering, financial statement manipulation, or insider trading, by learning from historical data and successively familiarizing to new fraud autographs.

**2.7.4 Blockchain Technology (BT)**

Most predominant financial systems are centralized and not planned for continuous inter-operability with Blockchain. Assimilating Blockchain resolutions requires significant investment in substructure and a highly dedicated skillset among forensic accountants, amalgamating outmoded accounting know-how with Blockchain technology, cryptography, and data scholarship. The "garbage-in, garbage-out" standard also applies; if initial data input onto a Blockchain is duplicitous, the unassailable landscape of the ledger means that inappropriate information becomes eternally recorded, making remediation multifarious.

**2.8 Audit Assurance Services**

Audit assurance provides an independent evaluation of financial statement reliability, serving as a cornerstone of the financial ecosystem by reducing information asymmetry. Beyond mere compliance, it fosters stakeholder trust and investor confidence, which are particularly vital in developing economies.

According to Silviera and van Bellen (2025), audit assurance effectively moderates information risk by decreasing the probability of misstatements caused by error or fraud. This validation ensures adherence to International Financial Reporting Standards (IFRS), presenting a "true and fair view" that lowers the cost of capital and optimizes resource allocation. Furthermore, these services strengthen corporate governance by identifying internal control weaknesses and encouraging ethical management. By acting as a deterrent against mismanagement and a tool for accountability, audit assurance secures the interests of shareholders and creditors while stabilizing the broader economic landscape. The value of assurance lies in its ability to bridge the gap between management's assertions and the stakeholders' need for transparency.

**2.9 Research Framework**

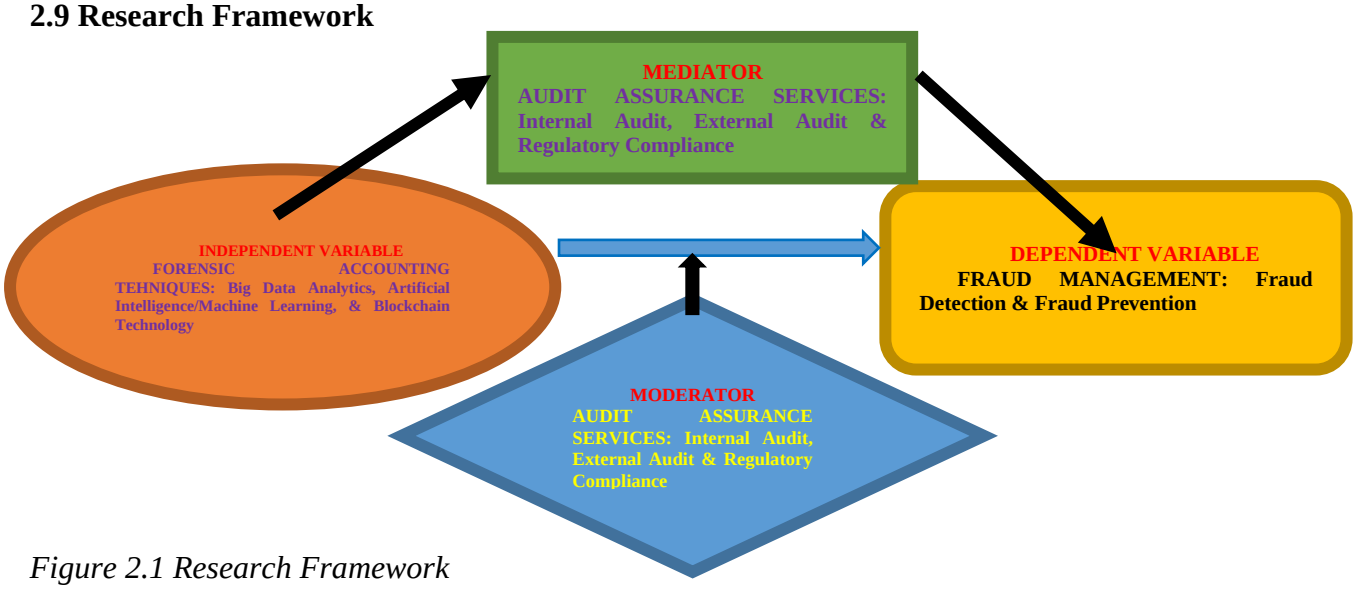


*Figure 2.1 Research Framework*

## 3. Methodology

Twenty-five (25) of the principal auditing firms in Nigeria, classified as "listed auditing firms" on the Nigerian Exchange Group (NGX) Limited in 2025; made up both the population and sample size of the study (Table 3.1).

**Table 3.1 Population and Sample of the Research**

| S/N | Top 25 Auditing Firms in Nigeria | Date of Establishment/Operation in Nigeria |
|---|---|---|
| 1. | Grant Thornton Nigeria | **NA** |
| 2. | Ernst & Young | **NA** |
| 3. | PriceWaterhouseCoopers (PWC) | **1953** |
| 4. | Adroit Advisors | **NA** |
| 5. | KPMG Nigeria | **1952** |
| 6. | McKinsey & Company | **2002** |
| 7. | Nexia Agbo Abdel & Co. | **2004** |
| 8. | Value forth Consulting | **NA** |
| 9. | $A_0$ PriceWaterhouseCoopers | **NA** |
| 10. | Ascentech Services Ltd. | **NA** |
| 11. | Crowe Dafinone | **NA** |
| 12. | Deloitte | **NA** |
| 13. | Dominion Consulting Nig. Ltd. | **2009** |
| 14. | Goldwynes Logotype | **2016** |
| 15. | Nemoz Consult Professional Services | **NA** |
| 16. | OEA Accounting Services | **NA** |
| 17. | Olaoluwa & Co. Chartered Accountants | **NA** |
| 18. | Pedabo Logotype | **1998** |
| 19. | SOW Professional Services Limited | **2018** |
| 20. | Tax House Logotype | **2019** |
| 21. | Babawale Salako & Co. | **NA** |
| 22. | Drudge Consulting | **NA** |
| 23. | MOC-Accountants | **NA** |
| 24. | Ngk & Associates Limited Logotype | **2002** |
| 25. | Ace Consulting and Advisory Services | **NA** |

NA = Not Available

Source: Website (2025)

To ensure the highest level of precision and eliminate sampling bias, this study adopts a census approach, utilizing the entire target population as the sample. This decision aligns with the criteria established by Haladu (2018), which justify using a full population when the group is manageable, a complete sampling frame exists, and the research demands absolute accuracy.

With sufficient resources and a well-defined list of subjects, the study administered questionnaires to 5 (five) forensic experts from each selected accounting firm, resulting in a total sample size of 125 respondents. To provide a robust evaluation, the study utilizes comparative analysis to investigate both the mediating and moderating effects within the proposed models.

A census approach is often preferred over sampling when the population size allows for it, as it provides a "true" reflection of the group rather than an estimation.

**Table 3.2 Research Variables and their Measurements**

| S/N | Variables | Acronyms | Measurements | Source(s) |
|---|---|---|---|---|
| | **Dependent Variable** | | | |
| | Fraud Management:<br>- Fraud Detection<br>- Fraud Prevention | FDM | Likert Scale | Ali et al. (2024), Oluyide (2025) and Haladu (2018) |
| | **Independent Variable** | | | |
| | Forensic Accounting Techniques:<br>- Big Data Analytics<br>- Artificial Intelligence/Machine Learning<br>- Blockchain Technology | FAT | Likert Scale | Ali et al. (2024), Oluyide (2025) and Haladu (2018) |
| | **Mediating/Moderating Variable** | | | |
| | Audit Assurance Services:<br>- Internal Audit<br>- External Audit<br>- Regulatory Compliance | AAS | Likert Scale | Ali et al. (2024), Oluyide (2025) and Haladu (2018) |

Source: Author's Formulation

$$FDM = a + (FAT+AAS) + \varepsilon$$
$$FDM = a + (FAT)(AAS) + \varepsilon$$

$$FDM_i = a + \beta_1 FAT_i + \beta_2 AAS_i + \varepsilon \quad \textit{(i) Direct}$$

$$FDM_i = a + \beta_1 FAT_i + \beta_2 AAS_i + \beta_3 (FAT+AAS)_i + \varepsilon \quad \textit{(ii) Mediating}$$

$$FDM_i = a + \beta_1 FAT_i + \beta_2 AAS_i + \beta_3 (FAT)(AAS)_i + \varepsilon \quad \textit{(iii) Moderating}$$

Where:
FDM = Fraud Management
FAT = Forensic Accounting Techniques (Big Data Analytics, AI/ML & Blockchain Technology)
AAS = Audit Assurance Services
a = Constant Term
ε = Error Term
$\beta_{1-n}$ = Coefficient
i = Cross Sectional

## 4. Results and Discussion

### 4.1 Descriptive Statistics and Correlation Evaluation

**Table 4.1 Descriptive Statistics and Correlation Matrix**

| Variables | Obs. | Mean | Std. Dev. | Min. | Max. |
|---|---|---|---|---|---|
| Fraud Management | 125 | 3.8760 | 0.9475 | 1.0000 | 5.0000 |
| Forensic Accounting Techniques | 125 | 3.6880 | 0.9368 | 1.0000 | 5.0000 |
| Audit Assurance Services | 125 | 3.6907 | 0.9373 | 1.0000 | 5.0000 |

| Variables | FMG | FAT | AAS |
|---|---|---|---|
| Fraud Management (FMG) | 1.0000 | | |
| Forensic Accounting Techniques (FAT) | 0.7230 | 1.0000 | |
| Audit Assurance Services (AAS) | 0.7750 | 0.6450 | 1.0000 |

Source: SPSS 27

Table 4.1 presents a descriptive analysis of the dataset, confirming the consistency and distribution of the 125 observations across the three primary variables: fraud management, forensic accounting techniques, and audit assurance services. With all variables yielding a mean of 4.0000 on a 1-to-5 scale, findings indicate a strong consensus among respondents, reflecting a positive predisposition toward the proposed mediating and moderating roles of audit assurance.

Standard deviation values for all variables (ranging from 0.9368 to 0.9475) remain below 1.0000, suggesting minimal data dispersion and high reliability for generalization. Furthermore, the correlation matrix confirms robust significant relationships between variables: fraud management correlates strongly with audit assurance (77.5%) and forensic accounting techniques (72.3%). Crucially, since no correlation exceeds the 80% threshold, the model is free from multicollinearity issues, reinforcing the premise that both forensic techniques and assurance services independently and positively impact fraud management in Nigeria.

**4.2 Regression Analyses**

**Table 4.2 Regression Results for the Direct, Mediated and Moderated Impacts**

| **Fraud Management (FDM)** | | **Coefficient** | **P-value** |
|---|---|---|---|
| **Direct Impact** | | | |
| Forensic Accounting Technique (FAT) | | 0.3990 | 0.0000 |
| Audit Assurance Services (AAS) | | 0.5140 | 0.0000 |
| $R^2$ value | | 0.8070 | |
| Significance | | 0.0000 | |
| **Mediated Impact** | | | |
| FAT+AAS | | 0.2790 | 0.0010 |
| $R^2$ value | | 0.6650 | |
| Significance | | 0.0010 | |
| **Moderated Impact** | | | |
| FAT*AAS | -0.0940 | 0.0630 | |
| $R^2$ value | | 0.6840 | |
| Significance | | 0.0630 | |

Source: Smart-PLS 4

The findings in Table 4.2 evaluate the direct and indirect influences of modern forensic accounting techniques and audit assurance services on fraud management. The results reveal that while direct and mediated effects are highly significant at the 1% level, the moderated impact fails to reach statistical significance (p = 0.0630). The model demonstrates a powerful explanatory capacity, with an $R^2$ of 80.70%, indicating that forensic techniques and audit assurance together account for nearly 81% of the variance in fraud management.

Audit Assurance exhibits a high impact; a one-unit increase improves fraud management by 0.5140 units (51.4%). Forensic Accounting shows a significant medium impact of 0.3990 (40%). The study highlights a clear distinction between how audit assurance services function as an intermediary versus an intensifier. Audit assurance acts as a successful mediator (beta = 0.2790, p = 0.0010). With an $R^2$ of 66.50%, it confirms that assurance services effectively facilitate and enhance the transmission of forensic accounting benefits into practical fraud management outcomes.

Conversely, the moderated influence is weak and negative (beta = -0.0940). Despite a high combined $R^2$ of 68.40%, the p-value of 0.0630 suggests that audit assurance does not significantly alter the strength or

direction of the relationship between forensic skills and fraud management in a way that is practically implementable.

### 4.3 Test of Hypotheses

Table 4.3 Direct Effect Result of the Proxies

| Hypotheses | Coefficient | p-value | Results | Comments |
|---|---|---|---|---|
| **$H_{01}$** Direct Effect (FAT) | 0.3990 | 0.0000 | Positive & Significant | Rejected |
| **$H_{02}$** Direct Effect (AAS) | 0.5140 | 0.0000 | Positive & Significant | Rejected |
| **$H_{03}$** Mediated Effect | 0.2790 | 0.0010 | Positive & Significant | Rejected |
| **$H_{04}$** Moderated Effect | -0.0940 | 0.0630 | Negative & Insignificant | Upheld |

For the purpose of simplicity, the direct and indirect impacts of the two variables of modern forensic accounting technique and audit assurance services on fraud management were computed in order to test for the hypotheses of the study. The result is shown on Table 4.3.

$H_{01}$ There is no significant relationship between modern forensic accounting technique and fraud management.

From Table 4.3, results for these hypotheses showed positive and significant relationship. The hypotheses were therefore rejected.

$H_{02}$ There is no significant relationship between audit assurance services and fraud management.

From Table 4.3, results for these hypotheses showed positive and significant relationship. The hypotheses were therefore rejected.

$H_{03}$ There is no significant influence of the mediated impact of audit assurance services on the association between modern forensic accounting technique and fraud management.

From Table 4.3, results for these hypotheses showed positive and significant relationship. The hypotheses were therefore rejected.

$H_{04}$ There is no significant influence of the moderated impact of audit assurance services on the association between modern forensic accounting technique and fraud management.

From Table 4.3, results for these hypotheses showed a negative and an insignificant relationship. The hypotheses were therefore upheld.

## 5. Conclusion and Recommendations

### 5.1 Summary and Conclusions of the Study

Modern advancements such as Big Data, AI, Machine Learning, and Blockchain are now integral to financial reporting and fraud management. This study investigates the dual role of audit assurance services as both a mediator and moderator in the relationship between forensic accounting techniques and fraud management.

To establish a robust model, the author uniquely synthesizes Locard's Exchange Principle ("Every contact leaves a trace") with Client Importance Theory, marking a novel theoretical integration in empirical research. The study's scope encompasses the Nigerian economy, focusing on 25 leading listed auditing firms. Data were collected from 125 respondents via Likert-scale questionnaires and analyzed using SPSS 27 and Smart PLS. The study evaluates how modern digital tools and assurance services interact to strengthen financial integrity.

### 5.2 Recommendations

Given the fact that modern forensic accounting techniques can augment fraud management, business organizations and auditing firms are not only advised but should be encouraged to employ the latest technologies and instruments in fraud detection and prevention especially as it affects forensic Investigation. Government

policies and regulations should not only be incorporate but also geared to the use of technological development into financial and economic regulations. Professional bodies should also make it as part and parcel of their code of ethical conduct. This will help prepare organizations for modern auditing and assurance services and can hasten the tracking process of fraudulent activities.

Research contribution in terms of originality, creativity, innovation, theory contribution and instrument development indicate that the originality of work is grounded on the application of "Audit Assurance Services" both as a mediating and moderating variable being proxied by internal auditor, external auditor and regulatory compliance are original contributions. Moreover, the study incorporated two important theories (Every Contact Leaves a Trace and Client Importance) to portray the originality of auditing, profitability, and trust assurance relationships in the research framework.

is The work is a creative one as it is based on both the mediated and moderated model that recognizes the work of the external auditor both as an investigator, a forensic expert and an assurer in financial matters. In terms of innovation and theory contribution, the application of "Every Contact Leaves a Trace and Client Importance" theories, encompasses the relationship between forensic accounting technique, audit assurance services and fraud management.

**References**

Abbas, Q. & Ali, K. (2025). Forensic accounting and AI in financial fraud detection: ethical and regulatory challenges. *ResearchGate*. https://www.researchgate.net/publication/390421652.

Abdulrahman, S. (2019). Forensic accounting and fraud prevention in Nigerian public sector: a conceptual paper. *International Journal of Accounting and Finance Review*, 4(2); 12-21. ISSN 2576-1285 E-ISSN 2576-1293. www.cribfb.com/journal/index.php/ijafr.

Ali, A. M., Futahi, R. F., Shukur, M. & Al-Orfali, A. K. (2024). Forensic accounting and fraud detection emerging trends and techniques. *Journal of Ecohumanism*, 3(5); 525-542. : https://doi.org/10.62754/joe.v3i5.3921.

Alshurafat, H. (2024). New variables and measurements of forensic accounting: implications on financial reporting and auditing. *Discover Sustainability*, 5(376); 1-10. https://doi.org/10.1007/s43621-024-00544-4

Al-Zoubi, A. M. & Al-Taha, S. S. (2025). The impact of external auditor's practice of electronic auditing on fraud detection: external auditor's awareness of the fundamental principles of ethics for members providing forensic accounting service and forensic accountant skills as moderate variables. *Data and Metadata*, 4(664); 1-19. https://doi.org/10.56294/dm2025664

Anipiriworima, N.-A. T., Innocent, E. C., & Tumba, F. N. (2025). Effect of forensic accounting skills on fraud management of selected federal ministries, departments and agencies (MDAs) in Nigeria. *Asian Journal of Economics, Business and Accounting*, *25*(3), 38–48. https://doi.org/10.9734/ajeba/2025/v25i31693.

Azman, N. L. A. (2024). Mediation effect of collapse avoidance assurance on behavioral intention to use forensic

accounting. *Journal of Marketing and Information Systems (JMIS)*, 4(2); 89-96. http://readersinsight.net/JMlS

Bode, J. (2019). Every contact leaves a trace: a literary reality of Locard's Exchange Principle. *The Outside the Box (OTB): A Multi-Lingual* Forum, 9(1); 18-22. ISSN: 1884-0184.

Dkhar, W. Lyngdor, B. & Kumar, P. (2025). Forensic accounting: a strategy for preventing and detecting financial fraud in the digital era. *International Journal of Accounting and Economics Studies (IJAES)*, 12(2); 282-291. https://doi.org/10.14419/z7g9we35 .

Gbegi, D. O., & Adebisi, J. F. (2014). Forensic accounting skills and techniques in fraud investigation in the Nigerian public sector. *Mediterranean Journal of Social Science*, 5(3); 243-254. eISSN: 2039-2117.

Gunathilake, S. D. & Ajwad, R. (2019). An empirical study of the relevant skills, knowledge and education in forensic accounting, and the current status of related services in the Sri Lankan context. *CA Journal of Applied Research*, 1(1); 95-113. https://www.researchgate.net/publication/335883046

Haladu, A. (2018). Determinants of sustainability reporting by environmentally sensitive firms in Nigeria. A Ph.D. Accounting Thesis submitted to Tunku Puteri Intan Safinaz School of Accountancy (TISSA-UUM), College of Business, Universiti Utara, Malaysia. https://sierra.uum.edu.my/record=b1698820-S1. URL: https://etd.uum.edu.my/id/eprint/7807

Haladu, A. (2025). Forensic accounting systems and fraud supervision: comparing the intervening roles of audit assurance services. Departmental Seminar, Department of Accounting, Faculty of Management Sciences, Northwest University, Kano; Kano State, Nigeria. https://www.researchgate.net/publication/398711356

Haladu, A., Ibietan-Oladiran, A., Okoh, O. A. & Utibe, E. E. (2024). Regulatory compliance, ethical considerations, audit quality and transparency in modern auditing and assurance. IOSR-Journal of Business and Management (IOSR-JBM), 26(12); 58-65. e-ISSN: 2278-487X, p-ISSN: 2319-7668. www.iosrjournal.com

Mamidu, A. I., Samuel, K. O., Akinyele, I. O. & Joseph, T. A. (2025). Forensic accounting practices and environmental fraud detection in selected ministries, departments and agencies (MDAs) in Ondo State, Nigeria". *Asian Research Journal of Current Science*, 7(1); 189-198. https://doi.org/10.56557/arjocs/2025/v7i1142.

Maulidi, A., Girindratama, M. W. & Hananto, H. (2025). Can forensic accounting as a 'science' prevent fraud? Implications for the undergraduate accounting curriculum in Indonesia. *Jurnal Akuntansi Unesa (AKUNESA)*, 13(3); 317-323. http://journal.unesa.ac.id/index.php/akunesa/index.

Nandini, N. S. & Ajay, R. (2021). A study on impact of forensic audit towards investigation and prevention of fraud. *Asian Journal of*

*Management (AJM)*, 12(2); 1-10. ISSN: 0976-495X. www.ajmjournal.com https://www.researchgate.net/publication/351608167.

Ogah, I. J. (2025). An empirical study of forensic accounting and fraud management by listed banks in Nigeria. *African Journal of Accounting and Financial Research*, 8(1); 16-32. https://doi.org/10.52589/AJAFR-R0TH4W8T.

Ogbaini, A. C., Akpor, A. A., Oboh, R., Oputa, J. E., & Bello-Marvis, V. (2024). The role of forensic accounting in fraud detection and prevention in Nigerian public sector: a case study of Lagos, Nigeria. *Pedagogik Jurnal Pendidikan, Maret* 19(1); (71-83). Global Wealth University, Lomé Togo.

Oluyide, E. S. (2025). The impact of forensic accounting techniques in mitigating electronic fraud in Nigeria's Deposit Money Banks. *Journal of Forensic Accounting Profession*, 5(1), 43 – 63. https://doi.org/10.2478/jfap-2025-0003.

Ozili P. K. (2015). Forensic accounting and fraud: a review of literature and policy implications. *International Journal of Accounting and Economic Studies*, 3(1); 63-68. https://ssrn.com/abstract=2628554.

Papoola, O. M. J., Che Ahmad, A. B. & Rose, Samsudin, R. S. (2015). Forensic accountant and auditor knowledge and skills requirement for task performance fraud risk assessment in the Nigerian public sector. Conference Proceedings of International Conference on Accounting Studies (ICAS, 2015), Johor Bharu, Malaysia. https://www.researchgate.net/publication/281460076.

Papoola, O. M. J., Che-Ahmad, A. & Samsudin, R. S. (2013). Forensic accounting knowledge and skills on tax performance fraud risk assessment: Nigerian public sector experience. Conference Proceedings of the Global Symposium on Social Sciences (IBSSS) 2013 Okinawa, Japan.

Paramole, I. B. (2024). The role of forensic accounting in mitigating tax fraud: an analyses of its effectiveness in Nigeria. *Ecopreneur: Jurnal Ekonomi dan Bisnis Islam*, 5(2); 1-16. http://journal.bungabangsacirebon.ac.id/index.php/ecopreneur.

Polo, O. C., Charris, N. N., Perez, E. B., Tovar, O. O., & Cantillo, I. F. C. (2023). Forensic audit: a case of automotive company, legal and accounting aspect. *Journal of Law and Sustainable Development*, 11(12); 1-34. ISSN: 2764-4170. https://doi.org/10.55908/sdgs.v11i12.2715.

Rosemary, O. & Emmanuel, O. (2012). Knowledge spillover versus economic bonding theories: the inclination of Nigerian auditing firms. *Middle Eastern Finance and Economics*, 16; 6-19. http://www.middleeasternecoomicsandfinance.com

Sabo, S., Adeiza, M. F. (2025). Evaluating the effectiveness of forensic accounting competencies in combating public sector fraud in ministry of finance in northwestern Nigeria. *Gusau Journal of Accounting and Finance*, 6(1); 93-107. https://doi.org/10.57233/gujaf.v6i1.07.

Sharma, D. & Rani, K. (2025). The anatomy of deception: a conceptual

study on fraud and forensic accounting. *International Journal for Multidisciplinary Research (IJFMR)*, 7(3); 1-15. E-ISSN: 2582-2160. IJFMR250346421. www.ijfmr.com

Silviera, G. B. & van Bellen, H. M. (2025). Impact of the joint provision of audit and non-audit services on the quality of external assurance of sustainability disclosures. *Rev. Contab. Financ*. 36(9); 1-19. https://doi.org/10.1590/1808-057x20242034.en

Tuharea, F. I., Ashari, M. H., Agusti, A. & Rifdayanti, A. A. (2024). The role of forensic accounting in preventing fraud and corruption in the public and private sectors. *Jurnal Akuntansi*, 1(4); 11-22. E-ISSN: 3047-0803. https://doi.org/10.62872/ax8v9d29.

Vutumu, A. (2024). Building the foundation: towards a theoretical framework for forensic accounting. *International Journal of Accounting, Finance and Risk Management (IJAFM), 9(4); 131-141*. https://doi.org/10.11648/j.ijafrm.20240904.12.

Walakumbura, L. & Dharmarathna, D. G. (2022). Impact of forensic accounting knowledge on fraud detection: with special reference to Sri Lankan context. *Journal of Accountancy and Finance*, 9(1); 1-21. https://www.researchgate.net/publication/363186081.

Web (2025). https://www.google.com/search?q=list+of+auditing+firms+in+nigeria&oq=li&gs_lcrp=EgZjaHJvbWUqDggAEEUYJxg7GIAEGIoFMg4IABBFGCcYOxiABBiKBTIGCAEQRRg5MhgIAhAuGEMYgwEYxwEYsQMY0QMYgAQYigUyDQgDEAAYkQIYgAQYigUyDAgEEC4YQxiABBiKBTIMCAUQLhhDGIAEGIoFMgYIBhBFGD0yBggHEEUYPNIBCDM1NTBqMGo3qAIIsAIB8QVxboPGpbFTjQ&sourceid=chrome&ie=UTF-8