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FORENSIC ACCOUNTING TECHNIQUES AND FRAUD DETECTIONS IN THE NIGERIAN PUBLIC SECTOR

[1*]Victoria Egbekun, [2]Ibukun Marcus Falayi

[1](Cna, Acibn, Mcp, Citn, Scilrm), [2](Ph.D) Fca

[1]Department of Accounting, Faculty of Social and Management Science, Archivers University Owo, Ondo State, Nigeria.

[2]Department of Accounting, College of Management Sciences, Joseph Ayo Babalola University, Ikeji-Arakeji, Nigeria.

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***Corresponding Author: Victoria Egbekun**
Department of Accounting, Faculty of Social and Management Science, Archivers University Owo, Ondo State, Nigeria.

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ABSTRACT

In Nigeria's public sector, fraud continues to be a significant obstacle to accountability and efficient financial management, necessitating the development of more potent fraud detection techniques. The effect of forensic accounting methods on fraud detection in Nigeria's public sector was investigated in this study. In particular, it evaluated the impact of computer-assisted auditing tools, data mining analytics, digital forensics, and litigation support expertise. Accountants, auditors, internal control officers, forensic accountants, and other pertinent staff in Federal Ministries, Departments, and Agencies (MDAs) in Ondo State, Nigeria, were given structured questionnaires to complete online as part of the study's survey research design. 146 stakeholders made up the population, and purposive sampling and a census were employed. Using SPSS version 25, descriptive statistics and multinomial logistic regression were used to analyze the data. The results showed that data mining analytics had a positive but insignificant effect on fraud detection ($B = 0.177$, $p = 0.300$), whereas digital forensics had a negative but insignificant effect ($B = -0.099$, $p = 0.574$). Positive and substantial impacts were observed using computer-assisted auditing tools ($B = 0.422$, $p < 0.001$) and litigation support abilities ($B = 0.540$, $p < 0.001$). The study found that different forensic accounting methods had different levels of efficacy.

KEYWORDS: Forensic accounting techniques; digital forensics; data mining analytics; computer-assisted auditing tools; litigation support; fraud detection; Nigerian public sector.

INTRODUCTION

Fraud detection remained an important aspect of promoting accountability, transparency, and sound financial management in the public sector. Effective fraud detection mechanisms helped organisations identify unusual financial activities, strengthen internal controls, and provide reliable evidence for investigating suspected misconduct (Garba, 2024; Kanu et al., 2026). International evidence also indicated that fraud detection was more effective when supported by sound auditing systems and appropriate technologies capable of identifying irregularities and monitoring compliance (Ali et al., 2024; Oyedokun et al., 2023). In Nigeria, the legal framework for financial accountability and the control of fraudulent practices was supported by the 1999 Constitution of the Federal Republic of Nigeria (as amended), the Economic and Financial Crimes Commission (EFCC) Act, 2004, and the Independent Corrupt Practices and Other Related Offences Commission (ICPC) Act, 2000. These laws established institutional responsibilities for protecting public resources, investigating financial crimes, and addressing corrupt practices.

The EFCC was empowered to investigate and prosecute economic and financial crimes, while the ICPC was established to investigate and prosecute corrupt practices and examine systems within public institutions that could encourage corruption. Within this legal and institutional framework, forensic accounting provided specialised techniques for examining financial records, tracing transactions, identifying unusual patterns, and generating evidence that could support investigations and legal proceedings (Oyedokun et al., 2023). However, the application of forensic accounting in Nigeria continued to face challenges, including inadequate technological infrastructure, limited expertise, insufficient funding, and weak institutional support (Akinadewo et al., 2025). Despite these developments, the effectiveness of forensic accounting techniques in Nigeria's public sector remained an empirical issue. Previous studies reported mixed findings regarding the contribution of different forensic techniques to fraud detection. Some studies found positive and significant relationships, whereas others reported insignificant or negative effects for particular techniques (Dada & Jimoh, 2020; Enekwe et al., 2024; Uche et al., 2025; Ukeni & Umobong, 2026). These inconsistencies suggested the need for further investigation, particularly with greater attention to technology-driven forensic techniques. The present study therefore examined forensic accounting techniques and fraud detections in the Nigerian public sector, with focused on

digital forensics, data mining analytics, computer-assisted auditing tools, and litigation support skills in relation to fraud detection in Nigeria's public sector within Federal Ministries, Department and Agencies (FMDAs) in Ondo State.

Fraud remained a persistent challenge to accountability in Nigeria's public sector despite existing laws, regulatory institutions, auditing procedures, and anti-corruption agencies. Financial mismanagement, procurement irregularities, diversion of public funds, and other forms of misconduct continued to undermine effective public-sector management (Godbless, 2026; Ofanson, 2026). Although the EFCC and ICPC had adopted forensic approaches in investigating reported cases, routine forensic examination of transactions across public institutions remained limited. The following questions were addressed; How did digital forensics influence fraud detection in the Nigerian public sector? What effect did data mining analytics have on fraud detection in the Nigerian public sector? To what extent did computer-assisted auditing tools affect fraud detection in the Nigerian public sector? What effect did litigation support skills have on fraud detection in the Nigerian public sector?

The broad objective of the study was to examine the impact of forensic accounting techniques on fraud detection in the Nigerian public sector. Specifically, the study sought to:

i. examine the influence of digital forensics on fraud detection in the Nigerian public sector;

ii. investigate the effect of data mining analytics on fraud detection in the Nigerian public sector;

iii. assess the effect of computer-assisted auditing tools on fraud detection in the Nigerian public sector; and

iv. evaluate the effect of litigation support skills on fraud detection in the Nigerian public sector.

The research hypotheses were set alongside with research questions and specific objectives of the study in null forms.

The study offers empirical insights into how forensic accounting can improve corruption detection, prevention, and prosecution for government agencies and anti-corruption organizations like the Independent Corrupt Practices and Other Related Offenses Commission (ICPC) and the Economic and Financial Crimes Commission (EFCC). The findings of the study would provide recommendations for creating integrated accountability frameworks that enhance public sector governance by combining investigative audits, fraud risk management, and legal compliance. The study focuses on forensic accounting techniques and fraud detections in the Nigerian public sector. The thematic scope includes digital forensic fraud detection, data mining analytics, Computer-Assisted Auditing Tools (CAATs),

and litigation support. Geographically, the study is confined to Federal Government Ministries, Departments, and Agencies (MDAs) in Ondo State, Nigeria.

LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Fraud Detection

Fraud detection was the systematic process of identifying, investigating, and preventing fraudulent activities through accounting, auditing, analytical, and technological techniques (Oyedokun et al., 2023; Garba, 2024). It involved examining financial records, transactions, internal controls, and operational procedures to identify irregularities and suspicious patterns that could indicate fraud (Kanu et al., 2026; Okonta & Nnamdi, 2025). Fraud detection was particularly important because financial misconduct, including embezzlement, financial statement manipulation, procurement fraud, and cyber fraud, continued to affect both public and private organisations (Akinadewo et al., 2025; Godbless, 2026).

Effective fraud detection combined preventive and investigative measures. Preventive measures strengthened internal controls and reduced opportunities for fraudulent behaviour, while investigative measures focused on uncovering and documenting fraud that had occurred. Techniques such as data analysis, computer-assisted auditing, ratio analysis, internal auditing, and whistleblowing supported the detection process (Odufisan et al., 2025; Eneje et al., 2026). Consequently, effective fraud detection enhanced accountability, transparency, financial integrity, and stakeholder confidence within organisations.

2.1.2 Forensic Accounting Techniques

Forensic accounting techniques were specialised methods and investigative procedures used to detect, prevent, and examine financial crimes and irregularities within organisations. They combined accounting and auditing knowledge with investigative, legal, technological, and analytical skills to uncover fraud, corruption, embezzlement, money laundering, and financial statement manipulation (Okoye & Mbanugo, 2020; Oladipo & Olurotimi, 2021). Unlike conventional accounting, which focused mainly on recording and reporting financial transactions, forensic accounting involved a more detailed examination of financial information to identify concealment, manipulation, and other forms of misconduct (Orji & Charity, 2025). Key techniques included fraud investigation, data mining and analytics, Benford's Law analysis, and interviewing and interrogation. Fraud investigation helped trace suspicious transactions and determine financial losses, while data analytics facilitated the examination of large datasets for unusual patterns and anomalies (Andrew et al., 2026; Dada

et al., 2023). Benford's Law assisted in identifying abnormal numerical patterns, while interviews provided additional evidence for investigations (Appah & Inini, 2021). Collectively, these techniques supported fraud detection, accountability, and stronger financial controls.

2.1.2.1 Digital Forensics

Digital forensics refers to the process of identifying, collecting, preserving, analyzing, and presenting electronic evidence obtained from digital devices and information systems for investigative or legal purposes. Digital forensics is a specialized field that combines principles from information technology, cybersecurity, law, accounting, and criminal investigation to uncover evidence relating to cybercrime, financial fraud, unauthorized access, data breaches, and other forms of digital misconduct (Andrew et al., 2026; Onoseme et al., 2025). Digital forensics emerged as a response to the increasing use of computers, mobile devices, cloud systems, and internet-based platforms in organizational activities. As businesses and individuals rely heavily on digital systems for communication, financial transactions, and record management, criminals have also adopted sophisticated technological methods to commit fraud and conceal evidence (Kapo et al., 2024; Onamusi et al., 2024). Consequently, digital forensics has become an essential mechanism for investigating cyber-related crimes and ensuring accountability in electronic environments (Andrew et al., 2026; Ozogwu et al., 2025). Digital forensics involves several stages such as identification, where investigators determine the digital devices, systems, or networks that may contain relevant evidence. Such devices may include computers, servers, mobile phones, flash drives, email systems, databases, and cloud storage platforms (Andrew et al., 2026; Onoseme et al., 2025). Once relevant devices are identified, the preservation stage begins. Preservation involves securing the electronic evidence to prevent unauthorized access, modification, or destruction. Investigators create forensic copies, also known as disk images, to ensure that the original evidence remains intact throughout the investigation process (Maidarasu, 2025; Ali et al., 2024).

2.1.2.2 Data Mining Analytics

Data mining analytics refers to the systematic process of extracting meaningful patterns, relationships, trends, and useful information from large volumes of structured and unstructured data through the application of statistical methods, machine learning techniques, artificial intelligence, and database systems (Ilori, 2025; Ojo et al., 2026). Data mining analytics is an advanced analytical approach used by organizations to transform raw data into valuable information that supports decision-making, fraud detection, risk management,

operational efficiency, and strategic planning (Lawal et al., 2025; Babatunde et al., 2025). In modern organizations, data mining analytics has become increasingly important due to the rapid growth of digital information and technological advancement (Fatokun et al., 2025; Adekunle et al., 2025).

The concept of data mining analytics emerged from the need to manage and analyze massive datasets generated through business transactions, online activities, financial systems, customer interactions, and organizational operations (Ojo et al., 2026; Lawal et al., 2025). Traditional methods of data analysis are inadequate when dealing with complex and high-volume datasets. Consequently, data mining analytics was developed to enable organizations identify hidden patterns, predict future outcomes, and gain deeper insights from available information (Ilori, 2025; Idowu & Owolabi, 2026). It combines concepts from statistics, computer science, mathematics, artificial intelligence, and database management systems (Fatokun et al., 2025; Adekunle et al., 2025).

2.1.2.3 Computer-Assisted Auditing Tools

Computer-Assisted Auditing Tools (CAATs) refer to the use of specialized computer software and technological applications by auditors and forensic accountants to improve the efficiency, effectiveness, and accuracy of audit processes. CAATs enable auditors to examine large volumes of financial and non-financial data electronically, identify irregularities, test internal controls, and detect fraudulent transactions that may not be easily discovered through traditional manual auditing procedures (Ibrahim & Ogunleye, 2025; Ogunmola, 2024). In the contemporary business environment characterized by digitalized accounting systems, electronic transactions, and complex financial reporting frameworks, CAATs have become indispensable tools for auditors and investigators (Oladejo & Akinwunmi, 2025; Obafemi & Akuh, 2026).

The emergence of computerized accounting systems and enterprise resource planning (ERP) platforms significantly transformed the auditing profession. These tools allow auditors to access entire databases rather than relying solely on limited samples, thereby improving audit quality and reducing audit risk (Adebayo et al., 2025; Ibrahim & Ogunleye, 2025). Computer-assisted auditing tools encompass a wide range of software applications and techniques used in auditing and forensic investigations. Common examples include Audit Command Language (ACL), Interactive Data Extraction and Analysis (IDEA), Microsoft Excel advanced analytical functions, SQL-based audit tools, generalized audit software (GAS), and integrated test facilities (ITF). These tools support activities such as data

extraction, transaction testing, exception reporting, trend analysis, ratio analysis, duplicate testing, and fraud detection (Fatokun et al., 2025; Adekunle et al., 2025).

2.1.2.4 Litigation Support Skills

Olutokunbo and Julie (2026) examine data accuracy in automated financial accounting systems and highlight its significance in improving audit risk assessment and financial reliability in Nigerian firms. Similarly, Obafemi and Akuh (2026) emphasize that automated financial accounting systems enhance audit quality by improving data processing efficiency, strengthening internal controls, and reducing human errors in financial reporting. Agwom et al. (2026) further demonstrate the relevance of forensic accounting in fraud detection, particularly in identifying payroll fraud and fund diversion in public sector institutions, thereby reinforcing the role of technological and analytical tools in uncovering financial misconduct.

In the area of litigation support and fraud detection, Adesuyi et al. (2025) develop an AI-enabled fraud detection ecosystem model that strengthens the security of international payment channels and enhances real-time fraud identification. Achebe et al. (2025) also highlight the role of blockchain technology in improving financial fraud prevention and supporting cross-border regulatory enforcement through transparent and immutable transaction records. Umoh (2026) provides evidence that forensic auditing mechanisms significantly influence the financial performance of quoted firms, particularly in improving accountability and fraud control systems. Furthermore, Ofanson (2026) emphasizes forensic investigation as a critical tool for detecting financial crimes and combating corruption in Nigeria, while Agom (2026) explores corporate dispute resolution mechanisms and their relevance in addressing financial fraud-related conflicts within legal frameworks.

2.1.3 Conceptual Framework

The theoretical model also demonstrates the interaction between forensic auditing as the independent variable and fraud detection as the dependent variable. Dimensions used to measure forensic accounting techniques includes digital forensic, data mining analytics, Computer Assistted Auditing Tools (CAATs), and litigation support. While, fraud detection will be measure by Frequency of Fraud Investigation Reports (FFIR).

Authors' Compilation (2026)

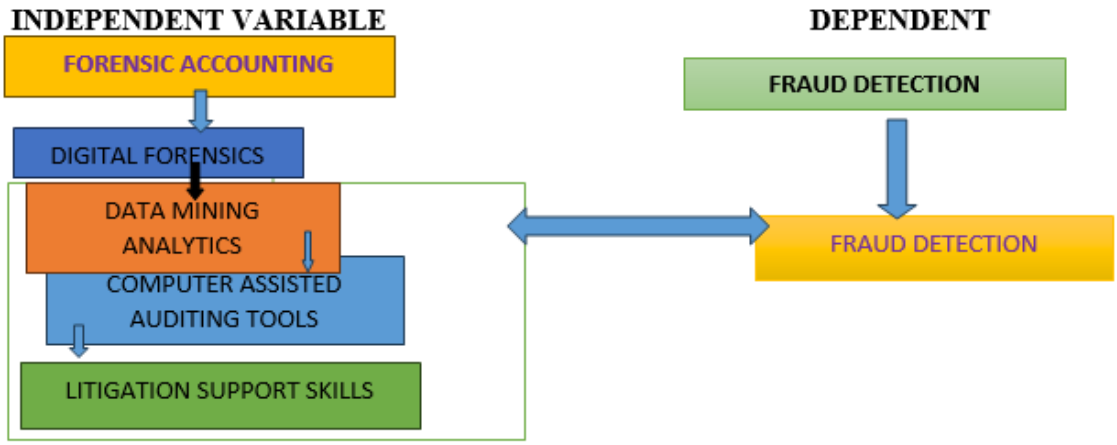


Fig 1: Conceptual Framework.

2.2 Theoretical Review

The study reviewed the following theories; fraud deterrence efficiency theory, policeman theory and Benford's law. Hence, the study is hinged the study on fraud deterrence efficiency theory because the theory explains how effective fraud detection and investigative mechanisms can discourage fraudulent behaviour by increasing the likelihood of detection and the consequences of misconduct in the Nigerian public sector.

2.2.1 Fraud Deterrence Efficiency Theory

Fraud Deterrence Efficiency Theory (FDET) was developed from ideas associated with Rational Choice Theory (Becker, 1968) and Fraud Triangle Theory (Cressey, 1953). The theory explained that individuals were less likely to engage in fraud when the perceived possibility of detection and punishment outweighed the expected benefits. From this perspective, forensic accounting strengthened fraud detection by increasing the likelihood that fraudulent activities would be identified and investigated (Mandal & Amilan, 2024). Techniques such as continuous monitoring, data analytics, and whistleblowing mechanisms therefore helped to reduce opportunities for fraud and encouraged greater accountability (Hashim et al., 2020; Eneisik et al., 2023). FDET was particularly relevant to this study because it provided a basis for explaining how forensic accounting techniques could deter fraudulent practices in the public sector. However, the theory had a limitation because it placed considerable emphasis on rational decision-making and might not fully account for fraud arising from personal pressure, ethical failures, or organisational culture (Clavería & Carrasco, 2023; Hassan et al., 2025).

2.2.2 The Policeman Theory

In forensic auditing, the Policeman Theory drew a parallel between the responsibilities of law enforcement officers and forensic auditors, particularly their shared role in identifying and addressing financial wrongdoing (Silverstone et al., 2012). Just as police officers helped maintain law and order, forensic auditors worked to protect the financial integrity of organisations by examining records and identifying fraud, irregularities, and breaches of trust (Oladejo & Jack, 2020). The theory therefore emphasised the investigative and preventive responsibilities of forensic auditors. In carrying out their duties, forensic auditors examined financial records, transactions, and electronic data to trace the sequence of events and identify evidence of fraudulent activities, much like detectives investigating a suspected crime (Yadav & Yadav, 2013). They also applied specialised techniques, including data analysis, digital forensics, and forensic accounting procedures, to detect unusual patterns, trace financial transactions, and uncover activities that could indicate fraud or other forms of financial misconduct (Ruan et al., 2020).

2.2.3 Benford's Law

Benford's Law was a statistical principle that described the expected distribution of leading digits in naturally occurring numerical datasets. It indicated that smaller digits appeared more frequently as the first digit than larger ones, with the digit 1 occurring about 30% of the time and 9 about 4.6%. In forensic accounting, the law was applied to examine financial data and identify unusual patterns that might warrant further investigation (Suleiman & Sati, 2025; Ame et al., 2025). It was particularly useful for screening large datasets such as payroll, procurement, revenue, and expenditure records (Verma & Singh, 2023; Oyedokun, 2022).

Benford's Law provided a relatively simple and cost-effective means of directing auditors towards potentially irregular transactions. However, it did not establish the existence of fraud and was less reliable with small, restricted, or artificially structured datasets (Mugisha, 2021; Paul & Celestin, 2025). Its usefulness in the Nigerian public sector therefore depended on proper interpretation and combination with other forensic techniques, including data analytics, ratio analysis, and digital forensics.

2.3 Empirical Review

The empirical review examined previous studies in line with the broad and specific objectives of the study. Existing evidence showed that fraud remained a significant concern across Nigerian organisations, while the effectiveness of fraud detection mechanisms varied according to the techniques, technologies, and institutional settings involved. Godbless (2026) examined fraud control and economic development in Nigeria using annual time-

series data from 1999 to 2024 and the ARDL technique. The study found that fraud detection and control had a significant positive effect on economic growth and the Human Development Index, while reducing unemployment. Similarly, Oyedokun (2025), using data from 356 SMEs in Ibadan North, reported that technology-driven internal controls significantly improved fraud detection and reduced financial losses. Eneje et al. (2026) also found that digital audits technologies supported fraud prevention and detection, although skill shortages, regulatory constraints, technological limitations, and cybersecurity concerns affected their adoption.

Several studies specifically examined forensic accounting and fraud detection. Akpootu and Garba (2026) reported a significant positive relationship between awareness of forensic accounting applications and the detection of public-sector corruption. Vutumu et al. (2025) similarly found that forensic accounting practices contributed positively to fraud prevention, particularly when supported by effective internal controls and digital analysis. However, Ukeni and Umobong (2026) found that investigative accounting, data mining, and litigation support did not have significant long-run effects on public-sector fraud detection, indicating that the effectiveness of forensic techniques was not uniform. Appah and Inini (2021) also found a significant inverse relationship between forensic investigation and occupational fraud in Bayelsa State.

Recent studies placed greater emphasis on technology-based forensic techniques. Andrew et al. (2026) developed an artificial neural network model integrated with digital forensic logging and reported high predictive accuracy in fraud classification. Onamusi et al. (2024) found that advanced analytics and artificial intelligence improved cyber-fraud detection among Nigerian banks. Similarly, Garba (2024) reported that forensic accountants significantly improved fraud identification in Nigerian deposit money banks.

Evidence on data mining also indicated considerable potential for fraud detection. Ojo et al. (2026) found that data analytics improved enterprise risk management through anomaly detection and predictive risk assessment, while Fatokun et al. (2025) demonstrated the usefulness of machine-learning techniques in identifying fraudulent transactions. Babatunde et al. (2025) further reported a significant positive relationship between technology adoption and fraud detection among SMEs.

Studies on CAATs produced generally positive but varied findings. Agwom et al. (2026) found that CAATs significantly improved payroll fraud detection in Jos North Local Government Council, particularly in identifying ghost workers and irregularities. Success et al. (2025) also reported significant positive effects of forensic techniques on cybercrime

detection, with digital forensic tools showing the strongest influence. However, Olutokunbo and Julie (2026) found an insignificant relationship between automated accounting systems and audit risk assessment.

Evidence concerning litigation support was similarly mixed. Ofanson (2026) and Akpootu and Yusuf (2025) reported positive relationships between litigation support and fraud or corruption detection, whereas Dada and Jimoh (2020) found a significant negative relationship with financial crimes. The empirical evidence suggested that forensic accounting techniques enhance fraud detection, but their effectiveness depended on the specific technique, technological capacity, institutional environment, and supporting control mechanisms. These mixed findings provided justification for examining digital forensics, data mining analytics, CAATs, and litigation support skills in Nigeria's public sector.

Numerous studies have examined forensic accounting across different sectors and areas of financial management. However, empirical evidence on its effectiveness in fraud detection remains relatively limited in Africa, particularly in Nigeria. Existing studies (Apalowowa et al., 2023; Ogbaini et al., 2024; Ibrahim & Ademu, 2024; Okiridu & Ogbosei, 2024) have largely focused on the banking sector and other economic indicators, leaving relatively limited evidence from the wider public sector. For instance, Okoye and Gbeji (2013) examined forensic accounting in Ministries, Departments and Agencies (MDAs) in Kogi State, while Ile and Odimmega (2018) investigated its application in tertiary institutions in Anambra State.

Furthermore, empirical findings from Nigeria have remained inconsistent. While some studies reported that forensic accounting had a significant positive effect on fraud detection, others found negative or insignificant effects for particular techniques (Ajagun et al., 2025; Enekwe et al., 2024; Uche et al., 2025). Earlier studies also gave no greater attention to traditional forensic techniques, with comparatively limited focus on emerging tools such as digital forensics, data mining analytics, and computer-assisted auditing tools (Ofili et al., 2024; Okonkwo & Okegbe, 2025). These gaps provided the basis for the present study, which examined the relationship between selected forensic accounting techniques and fraud detection in Nigeria's public sector.

3.0 METHODOLOGY

The study adopted a survey research design because it provided a suitable approach for obtaining primary information from respondents on the relationship between forensic accounting techniques and fraud detection in Nigeria's public sector. Data were collected

through structured questionnaires administered online using Google Forms. The respondents comprised accountants, auditors, internal control officers, forensic accountants, and other relevant personnel working in selected Federal Ministries, Departments and Agencies (MDAs) in Ondo State. The data obtained were analysed using descriptive and inferential statistical techniques with the aid of SPSS version 25. The study relied entirely on primary data. The data were obtained directly from stakeholders in Federal MDAs in Ondo State through structured questionnaires. The population consisted of 146 relevant stakeholders in Federal MDAs in Ondo State, based on the available records. A census approach was adopted, whereby the entire population of 146 respondents was included in the study. Purposive sampling was used to ensure that respondents with relevant knowledge and experience in accounting, auditing, internal control, and forensic accounting were covered.

The independent variable was forensic accounting techniques, measured through four dimensions: digital forensics, data mining analytics, Computer-Assisted Auditing Tools (CAATs), and litigation support. Fraud detection constituted the dependent variable and was measured using indicators relating to the frequency of fraud investigation reports. A structured questionnaire served as the main instrument for data collection. Responses were measured on a five-point Likert scale ranging from Strongly Agree (5) to Strongly Disagree (1).

The relationship between the variables was expressed as:

$$FRADET_i = \beta_0 + \beta_1 DIGTFORE_i + \beta_2 DATAMIN_i + \beta_3 COMPASSAUDTOOLS_i + \beta_4 LITSUPP_i + \varepsilon_i$$

The model assumed positive relationships between each forensic accounting technique and fraud detection ($\beta_1, \beta_2, \beta_3, \beta_4 > 0$). Multinomial Logistic Regression was employed to examine these relationships. Content validity was established through a review of the questionnaire by the researcher's supervisor and other departmental experts. A pilot test was also conducted to assess the clarity and suitability of the instrument. The reliability results produced Cronbach's alpha coefficients ranging from 0.684 to 0.739. Fraud detection recorded 0.728, digital forensics 0.721, data mining 0.739, CAATs 0.718, and litigation support 0.684.

Table 1: Reliability Test.

Variables	Items	Cronbach's Alpha
Fraud Detection	9	.728
Digital Forensic	7	.721
Data Mining	8	.739
Computer Assisted Auditing Tools	7	.718
Litigation Support Skill	7	.684

Source: Authors' Computation (2026)

These results indicated acceptable internal consistency for the study. The data were analysed using descriptive and inferential statistics. Frequencies, means, standard deviations, skewness, and kurtosis were used to summarise the data, while Multinomial Logistic Regression was employed to test the study hypotheses and determine the effects of the forensic accounting techniques on fraud detection. All analyses were performed using SPSS version 25.

DATA ANALYSIS AND DISCUSSION OF FINDINGS

Table 2: Descriptive Statistics.

						Posterior Distribution	
	Mini	Maxi	Sum	Mean	Std. Deviation	Skewness	Kurtosis
LIT_SUPP	2.44	4.89	473.78	4.3071	.45649	-1.672	3.463
DIGT_FORE	3.00	4.89	478.44	4.3495	.37441	-.915	1.077
DATA_MIN	3.11	5.00	483.22	4.3929	.35986	-.706	.438
COMP_ASS_AUD_TOOLS	2.00	5.00	462.00	4.2000	.52458	-1.958	5.567
FRA_DET	1.67	5.00	454.56	4.1323	.67014	-1.745	3.303

Source: Authors' Computation (2026)

Table 2 presented the descriptive statistics of the study variables. Data mining analytics recorded the highest mean (4.3929) and the lowest variability (SD = 0.35986), while fraud detection had the highest variability (SD = 0.67014). Litigation support, digital forensics, and CAATs recorded mean values of 4.3071, 4.3495, and 4.2000, respectively. All variables showed negative skewness, indicating that responses were generally concentrated at the higher end of the scale. CAATs had the highest kurtosis (5.567), suggesting a more peaked distribution, while data mining recorded the lowest (0.438). Overall, the relatively high mean scores indicated favourable perceptions of the forensic accounting techniques and fraud detection.

Table 4: Coefficient Correlations Matrix.

	DIGT_FORE	DATA_MIN	COMP_ASS_AUD_TOOLS	FORE_ACC_TECH
DIGT_FORE	1.000			
DATA_MIN	.539	1.000		
COMP_ASS_AUD_TOOLS	-.869	-.562	1.000	
LIT_SUPP	.236	.112	-.566	1.000

Source: Authors' Computation (2026)

The coefficient correlation matrix between the forensic accounting approaches' dimensions was shown in Table 4. According to the findings, there was a moderately strong correlation between data mining analytics and digital forensics at 0.539. Additionally, data mining analytics and litigation assistance revealed a weak positive association of 0.112 and 0.236, respectively, with digital forensics and litigation support. On the other hand, there was a moderate negative correlation of -0.562 with data mining analytics and -0.566 with litigation support, and a significant negative correlation of -0.869 with digital forensics for computer assisted auditing tools.

Table 5: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.313	.750		-.417	.678
	DIGT_FORE	-.099	.176	-.056	-.564	.574
	DATA_MIN	.177	.170	.095	1.041	.300
	COMP_ASS_AUD_TOOLS	.422	.113	.330	3.738	.000
	LIT_SUPP	.540	.143	.368	3.774	.000
			R Square	Adjusted R Square	F	Sig.
			.359	.335	14.700	.000
a. Dependent Variable: FRA_DET						

The correlation analysis showed that the study variables were sufficiently distinct, with coefficients ranging from -0.869 to 0.539. Although some relationships were relatively strong, none exceeded the 0.90 threshold associated with serious multicollinearity. The regression model explained 35.9% of the variation in fraud detection ($R^2 = 0.359$; adjusted $R^2 = 0.335$), while the overall model was statistically significant ($F = 14.700$, $p < 0.001$). Digital forensics had a negative and insignificant effect ($B = -0.099$, $p = 0.574$), while data mining had a positive but insignificant effect ($B = 0.177$, $p = 0.300$). CAATs ($B = 0.422$, $p < 0.001$) and litigation support ($B = 0.540$, $p < 0.001$) had significant positive effects on fraud detection, with litigation support showing the stronger standardized effect.

DISCUSSION OF FINDINGS

The regression results showed that forensic accounting techniques had a statistically significant overall effect on fraud detection in the Nigerian public sector. However, the individual techniques produced different outcomes.

For **$H0_1$**, digital forensics had a negative but statistically insignificant effect on fraud detection. The result suggested that digital forensic tools alone had not significantly improved

fraud detection in the institutions studied. This finding agreed with Paramole (2025) and Akinninyi et al. (2025), who noted that inadequate training, limited resources, weak institutional capacity, and poor inter-agency cooperation could restrict the effectiveness of forensic technologies. However, it differed from Adedokun and Akanmu (2026) and Akanbi and Oputeh (2026), who reported positive effects of forensic applications. These differences could have resulted from variations in institutional settings, measurement, and technological capacity.

For **$H0_2$**, data mining analytics had a positive but insignificant effect on fraud detection. Although data analytics could identify patterns and anomalies, its effectiveness in the present study appeared limited. This finding differed from Ojo et al. (2026), Ilori (2025), Lawal et al. (2025), and Fatokun et al. (2025), who reported significant benefits. Differences in data quality, infrastructure, technical expertise, and technology adoption could explain the contrasting results.

For **$H0_3$**, CAATs had a significant positive effect on fraud detection. This finding agreed with Agwom et al. (2026) and Ibrahim and Ogunleye (2025), who reported that technology-supported auditing strengthened fraud detection and internal controls. The result therefore provided evidence against the null hypothesis.

For **$H0_4$**, litigation support skills also had a significant positive effect on fraud detection. This agreed with Appah et al. (2021) and Okoye and Jonathan (2019), who linked forensic investigation and expert evidence with improved fraud control. However, it differed from Dada and Jimoh (2020), possibly because of differences in research design and institutional context. Overall, the findings showed that the effectiveness of forensic accounting depended on the specific technique and the environment in which it was applied.

CONCLUSION AND RECOMMENDATIONS

Based on the findings of the study, it was concluded that forensic accounting techniques contributed to fraud detection in the Nigerian public sector, although their effects differed across the techniques examined. Digital forensics and data mining analytics did not have statistically significant effects on fraud detection, which suggested that their application may have been limited by factors such as inadequate technical capacity, data quality and institutional constraints. In contrast, computer-assisted auditing tools and litigation support skills had significant positive effects on fraud detection. The study therefore established that effective use of technology-based auditing tools and the development of litigation support

competencies could strengthen the capacity of public sector institutions to identify, investigate and address fraudulent activities.

Based on the findings, the study recommended that, public sector institutions should strengthen the application of computer-assisted auditing tools by investing adequately in appropriate audit software, digital infrastructure and continuous professional training for auditors. Public sector auditors should be provided with adequate training in litigation support skills to improve the collection, preservation, documentation and presentation of reliable evidence during fraud investigations and legal proceedings. The application of digital forensics and data mining analytics should be improved through regular staff training, better-quality data management systems and greater integration with other forensic accounting techniques rather than being discontinued because of their insignificant effects in the study. Public sector institutions should promote greater collaboration among forensic accountants, auditors, information technology specialists and legal practitioners to improve the identification, investigation and prosecution of fraudulent activities.

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