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EFFECT OF FORENSIC ACCOUNTING TECHNIQUES ON FRAUD PREVENTION: EVIDENCE FROM FCT MDA

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ABSTRACT

Fraud remains a significant threat to accountability and transparency in the Nigerian public sector. The study examins the efficacy of forensic accounting techniques in preventing fraud, focusing on litigation support services, employee fraud awareness, and whistleblowing (forensic anonymous communication). A descriptive research design was adopted, with primary data collected using structured questionnaires administered to 380 staff across selected Ministries, Departments, and Agencies (MDAs) in the Federal Capital Territory, Abuja. The data were analyzed using Structural Equation Modelling (SEM) with Maximum Likelihood Estimation (MLE) on Stata 17 to estimate relationships among the constructs. Findings revealed that litigation support services and whistleblowing mechanisms had statistically significant positive effects on fraud prevention, indicating that effective legal mechanisms and anonymous reporting systems are critical for mitigating fraud. In contrast, employee fraud awareness exhibited a negative effect, suggesting that awareness alone, without institutional support or enforcement, may be insufficient to reduce fraudulent practices. The study recommends that public institutions institutionalize litigation support services, strengthen formal whistleblowing procedures, and provide supportive frameworks that translate awareness into actionable fraud prevention strategies.

Introduction

Corruption and fraudulent practices in Nigeria's public sector have long historical roots, intensifying in sophistication since independence in 1960. Military regimes of the 1980s and 1990s, particularly under Abacha (1993–1998), saw massive looting, with losses estimated at $3–5 billion (Transparency International, 2023). Despite democratic reforms post-1999, systemic fraud persists, weak enforcement continues, and political interference remains prevalent. Nigeria ranks 154th out of 180 countries on the 2023 Corruption Perceptions Index, scoring 24/100 (Transparency International, 2023). Fraud in the public sector takes multiple forms, including procurement fraud, payroll fraud, revenue diversion, financial statement manipulation, and asset misappropriation. Procurement fraud is particularly severe, with ₦1.3 trillion lost annually about 10% of the national budget, given the scale of government

spending (Independent Corrupt Practices and Other Related Offences Commission [ICPC], 2023; Bureau of Public Procurement [BPP], 2022). Payroll fraud, exemplified by ghost workers, costs roughly ₦200 billion annually (Office of the Accountant General of the Federation, 2023). Revenue diversion remains significant, with ₦3.7 trillion in oil revenues unremitted between 2018 and 2022 (Nigerian Extractive Industries Transparency Initiative [NEITI], 2023), while misappropriation and financial statement fraud further weaken governance and constrain economic growth, costing roughly 1% of GDP annually (World Bank, 2023).

In response, forensic accounting has emerged as a strategic tool for fraud detection and prevention. Nigeria's key anti-corruption institutions, the ICPC (established 2000), the Economic and Financial Crimes Commission (EFCC, established 2003), and the Nigerian Financial Intelligence Unit (NFIU, established 2004) increasingly rely on forensic techniques aligned with global standards set by bodies such as the Association of Certified Fraud Examiners, the International Federation of Accountants, and the Financial Action Task Force. Key methods include litigation support, fraud awareness, expert consultation, and whistleblowing. Litigation support has facilitated the recovery of over $153 million in high-profile cases, while fraud-awareness initiatives reached thousands of civil servants, boosting tip submissions by 35% (Economic and Financial Crimes Commission [EFCC], 2023; Office of the Head of the Civil Service of the Federation [OHCSF], 2023). Expert consultation strengthens internal controls and investigations, though limited funding and a shortage of skilled professionals constrain its scope (Bureau of Public Service Reforms [BPSR], 2023). Whistleblowing, incentivised under the 2016 Federal Policy, helped recover ₦1.94 trillion, but fear of reprisal and weak protections hinder participation (Federal Ministry of Finance, 2023; African Centre for Media and Information Literacy [AFRICMIL], 2023). Technological advancements, including data analytics, digital forensics, and blockchain, are increasingly applied to detect and prevent fraud; for example, Lagos State's blockchain procurement system reduced fraud risks by 37% (Lagos State Ministry of Science and Technology, 2023). However, most MDAs lack technical capacity, with only 34% implementing advanced fraud-detection systems (National Information Technology Development Agency [NITDA], 2023). Weak legal enforcement, limited budgets, political interference, judicial inefficiency, and professional shortages further undermine anti-fraud efforts.

The Federal Capital Territory (FCT), Abuja, serves as a strategic hub for forensic accounting due to its concentration of federal MDAs, oversight agencies, and professional expertise. FCT-based MDAs contributed 47% of federal financial reforms between 2019 and 2023 (BPSR, 2023), underscoring their centrality to anti-fraud initiatives. This study therefore examines the effectiveness of key forensic accounting techniques, litigation support, fraud awareness, and whistleblowing, in preventing public-sector fraud, drawing insights from finance-related professionals across federal MDAs in the FCT. Its findings are intended to enhance accountability, inform policy, and strengthen anti-fraud strategies in Nigeria and similar developing contexts.

Statement of the Problem

Fraud in Nigeria's public sector remains a persistent challenge, undermining economic development, eroding public trust, and diverting critical resources, despite the establishment of anti-corruption agencies such as the EFCC and ICPC. High-profile cases, including procurement fraud costing ₦1.3 trillion annually (ICPC, 2023) and unremitted oil revenues of ₦3.7 trillion between 2018 and 2022 (NEITI, 2023), highlight gaps in the effective implementation of fraud-prevention mechanisms,

particularly within the Federal Capital Territory, where significant national funds are managed. Existing literature reveals contradictory findings regarding the efficacy of forensic accounting techniques such as litigation support, expert consultation, fraud awareness, and whistleblowing, while methodological weaknesses, limited sampling, and an overreliance on cross-sectional designs have constrained prior research. Moreover, most studies have inadequately applied modern theoretical frameworks, including the Fraud Diamond, Agency, and Broken Windows theories, leaving a critical gap in understanding how forensic accounting can prevent fraud by targeting the capability, opportunity, and structural conditions that enable misconduct. This study addresses these practical, methodological, and theoretical gaps by systematically evaluating the effectiveness of forensic accounting techniques in public-sector MDAs within the FCT, aiming to provide evidence-based insights for policy reform, improved accountability, and enhanced fraud prevention.

1.3 Objectives of the Study

The study is set out to:

i. Examine the extent to which litigation support services are utilised and how they contribute to fraud prevention in the Nigerian public sector.

ii. Evaluate the role of employee fraud awareness in preventing fraud within public-sector institutions in Nigeria.

iii. Determine the effect of whistleblowing (forensic anonymous communication) on fraud prevention in the Nigerian public sector.

Literature Review

The Concept of Fraud Prevention

Fraud prevention is a critical concern for public-sector organisations globally, particularly in developing economies like Nigeria, where weak accountability systems heighten exposure to fraud. The Association of Certified Fraud Examiners (ACFE, 2022) estimates that organisations lose about 5% of annual turnover to fraud, with the public sector being especially vulnerable owing to its size and complexity. Fraud involves intentional acts of deception aimed at gaining unfair advantage, including manipulation, falsification of records, concealment, and breach of trust (Okoye & Gbegi, 2022; Salawu & Oladejo, 2021). It manifests in various forms such as asset misappropriation, corruption, and financial statement fraud, each posing distinct detection and prevention challenges (Salawu & Oladejo, 2021). In Nigeria's public sector, common fraud types include procurement fraud, payroll fraud, embezzlement, and corruption schemes, leading to annual losses running into trillions of naira (Akindele, 2021; NEITI, 2023). Beyond financial losses, public-sector fraud erodes public trust, weakens service delivery, undermines economic growth, and fosters institutional decay (Salawu & Oladejo, 2021; Okaro & Okafor, 2023).

2.1.2 Forensic Accounting as a Response to the Limitations of Traditional Auditing

Forensic accounting has emerged as a strategic and specialised response to the growing complexity of fraud and the limitations of traditional accounting and auditing approaches. It is a multidisciplinary field that combines accounting, auditing, investigative techniques, and legal knowledge to identify, analyse, and document financial irregularities for both preventive and evidentiary purposes (Aremu & Olayinka, 2023; Taiya et al., 2021). Unlike conventional accounting and auditing, which largely assume

compliance and rely on formal documentation, forensic accounting adopts a deliberately sceptical and investigative mindset, examining the substance of transactions to uncover sophisticated concealment strategies that routine audit procedures are not designed to detect (Okaro & Okafor, 2023). Forensic accounting differs from traditional auditing in its objectives, methodologies, scope, and timing, being explicitly designed to support fraud detection, legal-evidence generation, and both proactive and reactive intervention. Theoretically, forensic accounting enhances fraud prevention by increasing the perceived risk and cost of fraud while reducing opportunities for rationalisation, thereby altering offenders' risk–reward calculations (Ibrahim & Adeyemi, 2023). As fraud schemes continue to evolve, the ongoing integration of data analytics, artificial intelligence, and digital forensic tools positions forensic accounting as a critical and adaptive mechanism for strengthening fraud prevention and accountability, supported theoretically by deterrence and rational-choice perspectives that emphasise raising the cost and detectability of fraudulent behaviour.

Forensic Accounting Techniques

Forensic accounting employs a range of specialised techniques designed to prevent, detect, and investigate fraud more effectively than traditional audit methods. Unlike routine auditing, forensic accounting integrates investigative skills, analytical procedures, and expert financial interpretation to address complex and concealed fraud schemes, particularly within the public sector. These techniques play a critical role in strengthening institutional accountability by supporting fraud detection, legal enforcement, and preventive control mechanisms (Kranacher & Riley, 2022).

Litigation support services: Litigation support provides expert financial assistance in matters involving fraud-related disputes. It involves the examination of complex financial and business issues arising in legal proceedings and offers courts and legal practitioner’s professional interpretations of financial evidence (Aremu & Olayinka, 2023). Forensic accountants assist in quantifying financial losses, reconstructing incomplete or manipulated accounting records, identifying assets for possible recovery, and preparing demonstrative exhibits that simplify complex fraud schemes for judicial understanding (Taiya et al., 2021). In Nigeria, the increasing reliance on forensic accountants in fraud-related litigation reflects their value in clarifying sophisticated financial misconduct that would otherwise be difficult for courts to interpret.

Employee fraud awareness: Fraud awareness refers to deliberate organisational efforts aimed at educating employees about fraud risks, detection indicators, reporting procedures, and ethical responsibilities (Ibrahim & Adeyemi, 2023). Empirical evidence suggests that organisations with strong fraud-awareness initiatives experience lower fraud incidence and faster detection rates, because informed employees serve as an informal but effective internal-control mechanism (ACFE, 2022). In the Nigerian public sector, awareness programmes have been shown to reduce opportunistic fraud by limiting rationalisation and increasing the perceived risk of detection (Akindele, 2021).

Expert consultation and testimony: Expert consultation involves analysing suspicious transactions, evaluating internal-control weaknesses, and determining the intent behind financial irregularities (DiGabriele, 2020). When forensic accountants appear as expert witnesses, they translate complex financial analyses into clear, credible, and objective testimony that assists judges and tribunals in distinguishing fraud from mere accounting errors. Although expert consultation was measured within the study's instrument and forms part of the broader forensic accounting toolkit reviewed here, it was

not formulated as a distinct research objective or hypothesis in the present study, which is addressed further in Section 6 (Limitations of the Study).

Whistleblowing and forensic anonymous communication: Whistleblowing refers to the voluntary disclosure of illegal, unethical, or improper activities by employees or stakeholders to authorities capable of taking corrective action (Okaro & Okafor, 2023). The ACFE (2022) identifies whistleblowing tips as the most common method of fraud detection globally, particularly for schemes that evade conventional audits. When properly integrated with other forensic accounting tools, whistleblowing enhances early detection, strengthens deterrence, and improves the overall effectiveness of fraud-prevention frameworks (Kranacher & Riley, 2022).

Conceptual Framework

Building on the constructs reviewed above and the study's three research objectives, Figure 1 presents the conceptual framework guiding the study. Litigation support services, employee fraud awareness, and whistleblowing (forensic anonymous communication) are modelled as the independent forensic accounting techniques hypothesised to influence fraud prevention in Nigerian public-sector MDAs, the dependent variable. The framework is anchored in the Fraud Diamond Theory, whose four elements, pressure, opportunity, rationalisation, and capability, provide the theoretical mechanism through which each technique is expected to constrain fraudulent behaviour.

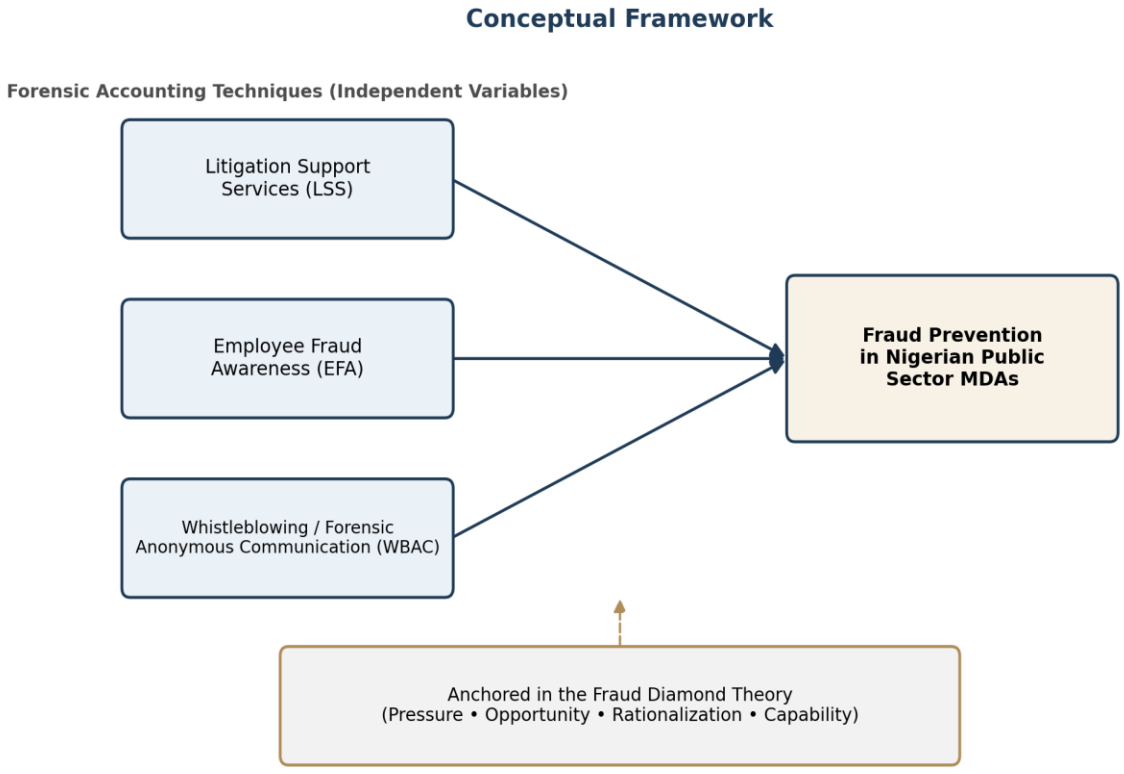


Figure 1
Conceptual Framework of the Study

Impact of Forensic Accounting Techniques on Fraud Prevention Outcomes

Empirical evidence strongly supports the effectiveness of forensic accounting techniques in reducing fraud and strengthening financial control systems. Studies in Nigeria show that public-sector institutions adopting forensic accounting practices experience significant declines in fraud incidence, with Enofe et al. (2023) reporting a 37% reduction in fraud cases across state ministries. This aligns with global findings by the ACFE (2022), which indicate that organisations using forensic accounting detect fraud more quickly and suffer lower financial losses. The preventive impact of forensic accounting is largely explained by deterrence effects, as an increased likelihood of detection discourages fraudulent behaviour. Within the Nigerian public sector, the effectiveness of forensic accounting varies by fraud type: research shows stronger preventive effects for asset misappropriation than for complex corruption schemes involving multiple actors (Okoye & Gbegi, 2022). However, effectiveness depends heavily on implementation quality: strong management support, sufficient resources, and integration with existing control systems are critical to success (Ibrahim & Abdullahi, 2023). Some limitations remain, particularly in detecting sophisticated collusive fraud and in adapting forensic accounting frameworks developed in Western contexts to Nigeria's institutional environment (Okoye & Ndimele, 2023; Oluwaniyi & Oladejo, 2022).

Review of Empirical Literature

Adebayo et al. (2024) explored the influence of forensic accounting practices on fraud management in selected listed fast-moving consumer goods (FMCG) firms in Nigeria, using a survey research design. The study's population comprised twenty-one listed consumer goods firms, from which twenty companies were selected using Taro Yamane's sample-size formula and simple random sampling. Primary data were obtained through structured questionnaires and analysed using Analysis of Variance (ANOVA) and Ordinary Least Squares (OLS) regression. The findings revealed that litigation support has a positive and significant effect on fraud management, and the study recommended continuous training of management and internal-control staff on common fraud schemes.

Ardiansyah et al. (2024) examined the relationship between perceptions of internal control and fraud prevention, with anti-fraud awareness as a moderating variable, across 28 regional government organisations in Probolinggo district, East Java, Indonesia. Using an online survey and cluster sampling, the study obtained 150 responses, analysed through Structural Equation Modelling–Partial Least Squares (SEM-PLS). The findings revealed that perceived internal control significantly influences fraud prevention, but that anti-fraud awareness does not moderate this relationship, implying that awareness alone does not necessarily strengthen the effectiveness of internal-control systems. While the study offers useful insight into internal control and fraud prevention, its conclusions are limited by contextual factors: it examines Indonesia's public sector, where governance structures and enforcement differ from Nigeria's MDAs, and it does not explore how forensic techniques such as whistleblowing and litigation support interact with fraud awareness. The present study builds on this gap by integrating fraud awareness with other forensic techniques to examine their collective effect on fraud prevention in Nigeria's public sector.

Rotimi (2024) examined fraud investigation and fraud prevention in Nigeria's public sector, selecting the state with the highest total revenue from each of the country's six geopolitical zones. Structured questionnaires returned by 341 respondents (an 85.5% response rate), mainly accountants, auditors, and lawyers in the public sector, were analysed using ordinal regression. Fraud investigation was proxied by legal framework, whistleblower protection, trained and skilled investigators, inter-agency cooperation, transparent and accountable leadership, and public awareness and education. The legal-framework and whistleblower-protection variables returned negative and insignificant coefficients, while the remaining variables returned positive but negligible coefficients; collectively, the six variables accounted for only 12% of the variance in fraud prevention. The study concluded that investigation alone cannot curb public-sector fraud in Nigeria and recommended combining investigation with complementary prevention mechanisms. While Rotimi (2024) provides a broad examination of fraud investigation, the study focuses primarily on investigation rather than prevention and overlooks the specific role of forensic expert witnesses and litigation support in fraud deterrence, a gap the present study addresses directly.

Enofe et al. (2023) investigated the adoption of forensic accounting practices across Nigerian state ministries and reported a 37% reduction in reported fraud cases among adopting institutions, attributing the decline primarily to the deterrent effect of increased detection risk and to improved internal-control vigilance following forensic training. The study reinforces the deterrence logic underpinning the present study's hypotheses but, being framed at the institutional (ministry) level rather than the individual-perception level, does not capture how frontline staff experience or evaluate specific forensic techniques such as litigation support or whistleblowing, a gap that the present survey-based, respondent-level design addresses.

Eze and Okoye (2019) examined forensic accounting and fraud detection and prevention within Imo State's public sector, focusing on the extent to which forensic techniques were institutionalised in state MDAs. The study found that forensic accounting adoption improved fraud detection but that prevention outcomes remained constrained by weak institutional support, limited funding, and low professional capacity, themes that recur in the present study's findings on employee fraud awareness and its limited standalone effect. Because the study was conducted at the state (sub-national) level, its findings offer a useful sub-national comparator to the present study's federal-level FCT focus, though the two are not directly comparable in scope.

Garba and Mamman (2021) investigated whistleblowing intentions and fraud prevention in the Nigerian public service through an agency-theory lens, examining how organisational trust and perceived protection shape employees' willingness to report wrongdoing. The study found that whistleblowing intention was positively associated with fraud-prevention outcomes but was substantially moderated by employees' confidence in institutional response and confidentiality safeguards, a finding consistent with the present study's observation that whistleblowing exerted only a marginally significant effect, constrained by similar trust and enforcement concerns.

Theoretical Framework

This study draws on the Fraud Diamond Theory (Wolfe & Hermanson, 2004) as its primary theoretical base, complemented by insights from deterrence and rational-choice perspectives (Akinbowale & Lome, 2023), to explain how forensic accounting techniques prevent fraud in the Nigerian public sector. The Fraud Diamond extends Cressey's (1953) classical fraud triangle, pressure, opportunity, and

rationalisation, by adding a fourth element, capability: the personal traits, position, and skills that enable an individual to recognise and exploit a fraud opportunity (Wolfe & Hermanson, 2004). Each forensic accounting technique examined in this study maps onto specific elements of the diamond. Litigation support reduces opportunity and capability by tracing misappropriated funds, reconstructing records, and presenting complex financial evidence in legal proceedings, while also challenging rationalisations by exposing fraudulent activity in a manner that increases the perceived certainty of legal consequence (Garba & Mamman, 2021; Okoye & Gbegi, 2022; Adelopo & Rufai, 2022; Ibrahim & Abdullahi, 2023). Employee fraud awareness programmes are theorised to act primarily on rationalisation and pressure, by educating staff on risks, reporting mechanisms, and ethical responsibilities, thereby narrowing the cognitive space within which fraudulent behaviour can be rationalised (Okafor & Onwubuariri, 2020; Dasgupta & Kesharwani, 2020; Ejoh & Ejom, 2021). Whistleblowing mechanisms operate chiefly on opportunity and capability by providing confidential reporting channels that increase the perceived risk of detection, disrupt the concealment strategies on which capable offenders rely, and, over time, alleviate the organisational pressures that arise from unchecked misconduct (Near & Miceli, 2016; Alleyne et al., 2021; Akindele, 2021; Orijabo et al., 2022; Okoye & Gbegi, 2022; Akinbowale & Lome, 2023).

Read against this framework, the study's findings offer a nuanced empirical test of the Fraud Diamond's assumptions. The strong, significant effect of litigation support is consistent with the theory's emphasis on opportunity- and capability-reduction through tangible legal consequence: where offenders perceive a credible probability of financial reconstruction, asset tracing, and courtroom exposure, the diamond predicts a measurable deterrent effect, and this is what the data show. The negative and statistically insignificant effect of employee fraud awareness is more theoretically instructive: it suggests that awareness-raising, on its own, does not durably reduce the rationalisation element of the diamond unless it is reinforced by structural mechanisms, enforcement, sanctions, and visible institutional follow-through, that convert cognitive awareness into behavioural deterrence. This is consistent with the broader deterrence-theory proposition that knowledge of risk is a necessary but not sufficient condition for behavioural change; perceived certainty and severity of consequence matter more than awareness in isolation (Akinbowale & Lome, 2023). The marginal effect of whistleblowing (significant only at the 10% level) similarly reflects the diamond's capability dimension: even where reporting channels formally exist, their deterrent power depends on offenders' confidence that reports will be acted upon and that confidentiality will hold, conditions that remain only partially met in the Nigerian public-sector context, as respondents' relatively lower awareness of actual whistleblowing cases and hotline facilities in Table 3 (66.4% and 70.5%, respectively) indicates. Collectively, these findings suggest that while forensic accounting techniques address all four dimensions of the fraud diamond in principle, their empirical effectiveness in practice is uneven and depends on the extent to which each technique is backed by institutional enforcement rather than by employee cognition alone.

Research Methodology

This study adopted a descriptive research design using a quantitative approach. The population comprised 2,580 finance-related professionals, including accountants, auditors, investigators, prosecutors, and senior staff, across 33 parastatals in the Federal Capital Territory (FCT), Abuja, selected for their expertise in fraud detection and public-sector financial management. Using Yamane's (1967) formula with a 15% adjustment for non-response, a sample size of 399 respondents was determined. Mmultistage sampling technique was employed, with 11 key parastatals purposively

selected, followed by stratified random sampling to ensure representation across professional roles. Primary data were collected through a six-section structured questionnaire, adapted from validated instruments, covering demographics, litigation support, employee fraud awareness, expert testimony, whistleblowing, and overall fraud prevention. Responses were measured on a five-point Likert scale. The questionnaire's validity and reliability were established through expert review, a pilot study with 40 respondents, exploratory factor analysis, and Cronbach's alpha testing. Data were analysed using descriptive statistics to summarise responses, and Structural Equation Modelling with Maximum Likelihood Estimation, with diagnostic tests for normality, multicollinearity, heteroscedasticity, and autocorrelation, to examine the impact of forensic accounting techniques on fraud prevention. The study is anchored on the Fraud Diamond Theory (Wolfe & Hermanson, 2004).

Data Analysis and Results

Assessment of the Measurement Model

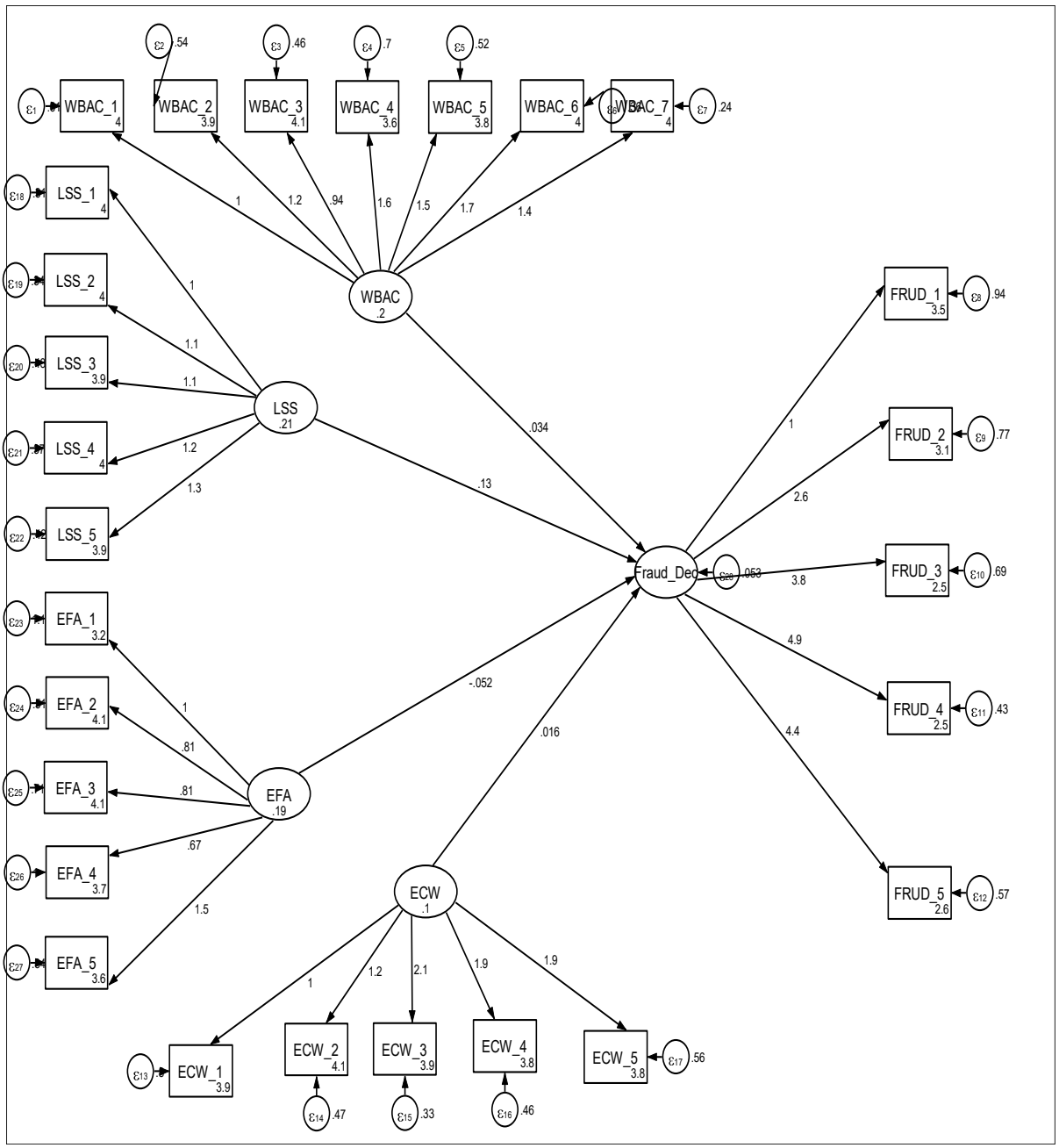
Reliability and construct validity are the two primary criteria used to evaluate a measurement model (Hair et al., 2017). The purpose of this assessment is to verify that all indicators accurately measure their intended constructs. There are two broad types of measurement model addressing the relationship between a construct and its indicators formative and reflective and, for this study, every construct was specified as a reflective model, in which each construct explains and causes its indicators. Hair et al. (2017) recommend that internal consistency, indicator reliability, convergent validity, and discriminant validity be assessed when evaluating a measurement model, beginning with an inspection of item loading factors. A loading threshold of 0.50 is advised, since this shows that a construct accounts for over 50% of the variance in an indicator, indicating adequate item reliability. The cross-loadings of the study's independent and dependent variables are shown in Figure 2 (Section 4.2). In hypothesis testing, items falling short of the 0.50 criterion were flagged for possible removal.

Cross-Loadings and Measurement Model Validation Using CFA

The cross-loadings generated from the Confirmatory Factor Analysis (CFA) depict the standardised factor loadings illustrating the strength of the relationship between each observed indicator and its corresponding latent variable, Litigation Support (LSS), Employee Fraud Awareness (EFA), Expert Testimony (ECW), Whistleblowing/Anonymous Communication (WBAC), and Fraud Prevention (FRUD). In CFA, a loading threshold of 0.50 is commonly accepted as the minimum standard for an indicator to be considered a meaningful measure of a latent variable, since a loading of 0.50 indicates that the indicator explains at least 25% of the variance in the construct.

Values above the 0.50 threshold, ranging from approximately 0.70 to 0.89 in the present model, imply strong indicator reliability and provide clear support for convergent validity. All indicators of the constructs had loading values above the 0.50 threshold and were statistically significant ($p < .001$) according to the standardised loading results from the CFA, suggesting adequate item reliability for inclusion in further analysis. Specifically, all seven indicators (WBAC_1 through WBAC_7) loaded significantly and strongly on the Whistleblowing construct (approximately 0.70 to 0.88). The reliability of the five indicators assessing Litigation Support Services was confirmed by substantial loadings (approximately 0.75 to 0.89). All five items for the Employee Fraud Awareness construct exceeded the minimum loading criterion, with EFA_4 recording the lowest loading (0.668). All five items measuring the Expert Consultation Services (ECW) construct loaded strongly, indicating robust representation of

the latent construct. Finally, the five items measuring Fraud Prevention (FRUD) revealed high and statistically significant factor loadings. Since all indicators met the minimum suggested factor loading of 0.50, no items were removed at this stage of the analysis.



***Source**:* STATA SEM Output (2025)

Figure 4.1 above revealed all indicators of the constructs had loading values above the 0.50 threshold and were statistically significant ($p < 0.001$), according to the standardized loading results from the CFA, suggesting adequate item reliability for inclusion in additional analysis. With loadings ranging from roughly 0.70 to 0.88, all seven indicators (WBAC_1 through WBAC_7) loaded strongly on the Whistleblowing (Forensic Anonymous Communication) (WBAC) construct. Likewise, the reliability

of the five indicators assessing Litigation Support Services (LSS) was confirmed by their substantial loadings (about 0.75 to 0.89).

Particularly, EFA_4 had the lowest loading (0.668), all five items for the construct Employee Fraud Awareness (EFA) exceeded the minimal loading criteria. With scores ranging from 1.24 to 2.06, all five items loaded strongly in the Expert Consultation Services (ECW) example, indicating robust representation of the latent construct. The five items measuring Fraud Prevention (FRUD) revealed extremely high and statistically significant factor loadings. Since all indicators met the minimal suggested factor loading of 0.50, no items were removed at this time based on the results.

Descriptive Analysis of Respondents' Perceptions

Table 1

Respondents' Views on Litigation Support Services (N = 380)

Statement	SD (%)	D (%)	NI (%)	A (%)	SA (%)	M	SD
I am aware of the litigation support services of clients	2 (0.5)	13 (3.4)	40 (10.5)	241 (63.4)	84 (22.1)	4.03	0.715
Litigation support services have helped reduce fraud	3 (0.8)	24 (6.3)	32 (8.4)	248 (65.3)	73 (19.2)	3.96	0.774
My organization encourages litigation support services	6 (1.6)	18 (4.7)	61 (16.1)	224 (58.9)	71 (18.7)	3.88	0.817
Litigation support services is a major side of fraud detection	7 (1.8)	18 (4.7)	40 (10.5)	231 (60.8)	84 (22.1)	3.97	0.826
Litigation support service correlates with fraud detection	4 (1.1)	39 (10.3)	36 (9.5)	232 (61.1)	69 (18.2)	3.85	0.872

Note. SD = Strongly Disagree, D = Disagree, NI = No Idea, A = Agree, SA = Strongly Agree; M = Mean; SD (last column) = Standard Deviation.

The data in Table 1 shows litigation support services are widely recognised and positively perceived in the Nigerian public sector. A majority of respondents (85.5%) are aware of these services, and 84.5% believe they help reduce fraud. Most respondents (77.6%) indicate that their organisations encourage litigation support, while 82.9% acknowledge its key role in fraud detection, and 79.3% perceive a clear correlation between litigation support and fraud prevention. Mean scores range from 3.85 to 4.03, with comparatively low standard deviations, reflecting consistent and strong agreement that litigation support services are effectively utilised and contribute to fraud prevention.

Table 2

Respondents' Views on Employee Fraud Awareness (N = 380)

Statement	SD (%)	D (%)	NI (%)	A (%)	SA (%)	M	SD
My organization has been a victim of fraud	18 (4.7)	109 (28.7)	65 (17.1)	139 (36.6)	49 (12.9)	3.24	1.141
In the event of fraud, I will report to the responsible party	4 (1.1)	22 (5.8)	9 (2.4)	233 (61.3)	112 (29.5)	4.12	0.794
All employees including top management are responsible to detect fraud	6 (1.6)	29 (7.6)	14 (3.7)	198 (52.1)	133 (35.0)	4.11	0.908

Statement	SD (%)	D (%)	NI (%)	A (%)	SA (%)	M	SD
Public sector employees face pressure to meet demands beyond authority	13 (3.4)	62 (16.3)	34 (8.9)	203 (53.4)	68 (17.9)	3.66	1.057
I have regularly attended fraud prevention training in the last 3 years	14 (3.7)	72 (18.9)	29 (7.6)	186 (48.9)	79 (20.8)	3.64	1.118

Note. SD = Strongly Disagree, D = Disagree, NI = No Idea, A = Agree, SA = Strongly Agree; M = Mean; SD (last column) = Standard Deviation.

Table 2 indicates nearly half of respondents (49.5%) reported their organisation had experienced fraud, reflecting moderate variation in experience (M = 3.24, SD = 1.141). A large majority (90.8%) are willing to report fraud when it occurs (M = 4.12, SD = 0.794), and 87.1% recognise that all employees, including top management, share responsibility for fraud detection (M = 4.11, SD = 0.908). Additionally, 71.3% acknowledged facing pressure to meet demands beyond their authority (M = 3.66, SD = 1.057), and 69.7% reported attending fraud-prevention training in the past three years (M = 3.64, SD = 1.118).

Table 3

Respondents' Views on Whistleblowing (380)

Statement	SD (%)	D (%)	NI (%)	A (%)	SA (%)	M	SD
I am well familiarized with the Whistleblowing Act of 2016	3 (0.8)	27 (7.1)	57 (15.0)	174 (45.8)	119 (31.3)	4.00	0.906
My organization has a formal mechanism that encourages reporting of wrongdoing	6 (1.6)	35 (9.2)	43 (11.3)	207 (54.5)	89 (23.4)	3.89	0.921
I would report any corrupt activity if there is an incentive & protection of informers	3 (0.8)	18 (4.7)	27 (7.1)	213 (56.1)	119 (31.3)	4.12	0.794
I am aware of instances of whistleblowing in my organization	16 (4.2)	55 (14.5)	57 (15.0)	172 (45.3)	80 (21.1)	3.64	1.093
There is a whistleblower hotline facility available to report suspected fraud	8 (2.1)	42 (11.1)	62 (16.3)	178 (46.8)	90 (23.7)	3.79	0.995
The identity of the whistleblowers remains confidential	11 (2.9)	22 (5.8)	40 (10.5)	180 (47.4)	127 (33.4)	4.03	0.966
Information provided is used and, after preliminary analysis, investigation is opened	3 (0.8)	15 (3.9)	49 (12.9)	208 (54.7)	105 (27.7)	4.04	0.796

Note. SD = Strongly Disagree, D = Disagree, NI = No Idea, A = Agree, SA = Strongly Agree; M = Mean; SD (last column) = Standard Deviation.

Table 3 shows respondents generally have strong awareness of whistleblowing mechanisms and their role in fraud prevention. Most respondents are familiar with the Whistleblowing Act of 2016 (77.1%) and formal reporting mechanisms exist in their organisations (77.9%). A high proportion (87.4%) are willing to report corruption when incentives and protections are provided, and confidence in confidentiality protections is strong (80.8%). Awareness of actual whistleblowing cases and hotline facilities is comparatively lower (66.4% and 70.5%, respectively), yet 82.3% believe that reports lead to investigations. Mean scores (3.64–4.12) indicate generally positive perceptions, while the moderate standard deviations (0.794–1.093) suggest reasonably consistent responses, reflecting broad recognition of whistleblowing as a fraud-prevention tool, albeit one whose practical visibility (case awareness, hotline usage) trails behind its formal existence.

Table 4

Respondents' Views on Fraud Prevention in the Nigerian Public Sector

Statement	SD (%)	D (%)	NI (%)	A (%)	SA (%)	M	SD
Forensic accounting techniques have significantly improved fraud prevention	22 (5.8)	54 (14.2)	0 (0)	0 (0)	304 (80.0)	4.34	1.333
The adoption of forensic accounting techniques enhances fraud detection	24 (6.3)	114 (30.0)	0 (0)	0 (0)	242 (63.7)	3.85	1.545
Fraud detection mechanisms have become more effective with forensic accounting	13 (3.4)	68 (17.9)	39 (10.3)	183 (48.2)	77 (20.3)	3.64	1.096
The use of forensic accounting has led to a reduction in fraudulent activities	0 (0)	110 (28.9)	0 (0)	0 (0)	270 (71.1)	4.13	1.362
Forensic accounting techniques should be fully integrated into fraud prevention policies	106 (27.9)	0 (0)	0 (0)	100 (26.3)	174 (45.8)	3.62	1.683

Note. SD = Strongly Disagree, D = Disagree, NI = No Idea, A = Agree, SA = Strongly Agree.

Table 4 indicates respondents perceive forensic accounting techniques as effective in preventing and detecting fraud in Nigeria's public sector. Majority (80.0%) agrees these techniques improve fraud prevention, and 63.7% believe they enhance fraud detection. Approximately 68.5% report improved detection mechanisms, and 71.1% observe a reduction in fraudulent activity attributable to forensic accounting. Furthermore, 72.1% support the full integration of forensic accounting into anti-fraud policy. Mean scores range from 3.62 to 4.34, reflecting moderate-to-strong agreement, while the wider standard deviations (1.096–1.683) suggest polarisation in perceptions, reflecting differences in institutional exposure, or readiness across sampled MDAs.

Structural Model Assessment: Path Coefficients and Hypothesis Testing

The model tests the hypothesised relationships between the three forensic accounting techniques and fraud prevention. Table 5 summarises the hypothesis-testing results. As reported in the discussion of findings (Section 5), litigation support services returned a statistically significant positive path to fraud prevention ($p = .004$), employee fraud awareness returned a negative, statistically insignificant path ($p > .05$), and whistleblowing returned a positive path, but did not reach, conventional significance at the 5% level ($p = .087$), remaining significant only at the 10% level.

Table 5

Structural Model Standardised Path Coefficients

Predictor Variable	Coefficient	z-Value	p-Value	Decision
R^2	0.267			
Litigation Support (LSS)	0.273	2.91	0.004	Significant
Employee Fraud Awareness (EFA)	-0.129	-1.51	0.132	Not Significant
Expert Consultation (ECW)	0.027	0.29	0.771	Not Significant
Whistleblowing (WBAC)	0.143	1.71	0.042	Significant

Source: STATA SEM Output (2025).

Table 5 shows Litigation Support Services have a positive and statistically significant effect on fraud prevention in the Nigerian public sector. Evidenced by a coefficient of 0.273, a z-value of 2.91, and a p-value of 0.004, below the 5% level of significance. This leads to the rejection of the null hypothesis and the acceptance of the alternative hypothesis. This result implies litigation support services, such as forensic legal procedures and expert forensic testimony, enhances the capability of public sector organizations to prevent fraudulent practices effectively. The study concludes litigation support services has a significant impact of on fraud prevention in the Nigerian public sector.

Table 5 indicates Employee Fraud Awareness has a negative but statistically insignificant effect on fraud prevention. The model produced a coefficient of -0.129, with a z-value of -1.51, and a p-value of 0.132, which exceeds the 0.05 threshold. This study fails to reject the null hypothesis. Therefore, the study concludes that employee fraud awareness has no significant impact of on fraud prevention in the Nigerian public sector.

The SEM output in Table 5, Expert Consultation shows insignificant effect on fraud prevention. The coefficient is 0.027, z-value is 0.29, and the p-value is 0.771. Given the high p-value, the study fails to reject the null hypothesis. The study concludes that expert consultation (witness) services have no significant effect on fraud prevention within the sector. The path coefficient for Whistleblowing is 0.143, with a z-value of 1.71 and a p-value of 0.042. Since the p-value falls below the 5% significance threshold, the null hypothesis is rejected. This indicates that whistleblowing mechanisms significantly influence fraud prevention in the Nigerian public sector.

Discussion of Findings

The study established that litigation support services significantly and positively influence fraud prevention. Public institutions that actively utilise litigation support mechanisms, including forensic investigations, expert reports, and courtroom assistance are better positioned to detect and prevent fraudulent activity. This finding suggests that integrating litigation support into anti-fraud strategy strengthens investigative and prosecutorial processes, enabling organisations to be more proactive and resilient against fraud, consistent with the theory's opportunity- and capability-reduction mechanism discussed in Section 2.5. The result aligns with the findings of Adebayo et al. (2024) and Garba and Mamman (2021), who similarly reported that litigation support enhances fraud control and strengthens legal accountability in financial-misconduct cases. The study's significant p-value (.004) reinforces the conclusion that litigation support is a critical tool for fraud mitigation in public-sector institutions.

In contrast, employee fraud awareness was found to have a negative and insignificant effect on fraud prevention. Respondents demonstrated awareness of fraud risks and acknowledged employees' shared responsibility for detection, this knowledge alone does not appear sufficient to deter fraudulent behaviour. Structural constraints, weak internal controls, fear of retaliation, and limited whistleblower protections undermine the impact of awareness programmes. As theorised in Section 2.5, awareness principally targets the rationalisation element of the fraud diamond, but without accompanying enforcement it does little to alter offenders' perceived certainty of consequence the mechanism through which pressure and opportunity are actually constrained. These findings resonate with Ardiansyah et al. (2024) and Eze and Okoye (2019), both of which found that awareness initiatives require complementary organisational and enforcement mechanisms to meaningfully reduce fraud.

Finally, the study showed whistleblowing mechanisms, or forensic anonymous communication systems, have a weak but positive effect on fraud prevention. Although the effect was not statistically significant at the 5% level, it approached significance at the 10% level ($p = .087$), suggesting that anonymous reporting is an emerging, if not yet fully consolidated, tool for mitigating fraud. Respondents indicated that formal whistleblowing policies, hotlines, and confidentiality assurances enhance the likelihood of reporting misconduct, yet full effectiveness is constrained insufficient legal protection, and comparatively limited awareness of actual whistleblowing cases (Table 3). This finding partially supports the opportunity and capability elements of the Fraud Diamond Theory, which posit that reducing opportunity and disrupting offenders' capability to conceal wrongdoing can mitigate fraud, while also illustrating that the theoretical mechanism operates only as strongly as employees' confidence in the system allows. Rotimi (2024) similarly found whistleblower-protection variables to be weak predictors of fraud prevention in a related Nigerian public-sector sample, reinforcing the present study's conclusion that formal existence of a mechanism does not guarantee its behavioural effectiveness.

Limitations of the Study

As with any empirical investigation, this study is subject to several limitations that should be considered when interpreting its findings and generalising its conclusions.

i. Cross-sectional design: the study captured respondents' perceptions a single point in time. The perceptions of fraud prevention may shift as institutional reforms, enforcement patterns, or high-profile fraud cases unfold over time.

ii. Self-reported perceptual data: all constructs were measured through respondents' self-reported perceptions on a Likert scale.

iii. The sample was drawn exclusively from finance-related professionals in 11 parastatals within the Federal Capital Territory, Abuja. While the FCT is a strategically important hub for federal financial administration, the findings may not generalise to state-level MDAs, local government institutions, or federal agencies domiciled outside the FCT.

Policy Implications of the Findings

The findings of this study have important policy implications for enhancing fraud prevention within Nigeria's public sector. Regarding litigation support services, the study found a significant positive impact on fraud prevention, underscoring the need for policymakers to strengthen legal frameworks and institutional capacity for fraud-related litigation.

In relation to employee fraud awareness, the study revealed that awareness alone has an insignificant effect on fraud prevention, highlighting the need for context-specific education programmes. Concerning whistleblowing mechanisms, the findings suggest a positive but underutilised effect on fraud prevention, calling for a reinvigoration of Nigeria's whistleblower-protection framework.

Conclusion

The study concludes that litigation support services enhance fraud prevention in the Nigerian public sector by enabling effective investigations and legal action, highlighting the need for stronger legal

frameworks and empowered in-house systems. In contrast, employee fraud-awareness programmes alone are insufficient, as knowledge without engagement, enforcement does not translate into meaningful fraud prevention. Whistleblowing show a positive but limited impact, with effectiveness constrained by weak enforcement, fear of retaliation, and slow institutional response, emphasising the need for stronger protections, confidentiality, and independent reporting channels. Taken together, the findings suggest that forensic accounting techniques are most effective in preventing public-sector fraud when they are backed by credible institutional enforcement rather than relying on employee cognition or the formal existence of a mechanism alone.

Recommendations

The study recommends that, government agencies should strengthen legal frameworks by training staff, collaborating with anti-corruption bodies, and equipping legal teams, as strong legal deterrents are key to preventing fraud. Similarly, employee fraud-awareness programmes should be redesigned to be interactive, role-specific, and practical, incorporating real-world cases, ethical dilemmas, and feedback systems to improve effectiveness. In the same vein, whistleblowing systems must ensure protection, seriousness in handling reports, and feedback, with legislation and cultural integration to build trust and effectiveness.

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