

THE ROLE OF FORENSIC ACCOUNTING IN DETECTING AND PREVENTING FRAUD IN THE PUBLIC SECTOR OF KANO STATE

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Abstract

This study examined the role of forensic accounting in detecting and preventing fraud in the public sector of Kano State, Nigeria. Guided by Cressey's Fraud Triangle Theory (1953), the study addressed two research questions and tested two null hypotheses at the 0.05 level of significance using the one-sample t-test. A descriptive survey design with a census approach was adopted. Data were collected from all 300 employees in the Accounts and Finance Departments across the 25 ministries of the Kano State Government, with 288 questionnaires retrieved and analysed. The instrument used a 5-point Likert scale and was analysed using descriptive statistics (mean and standard deviation) and a one-sample t-test with SPSS version 23. Findings revealed mixed perceptions among respondents. Several items recorded mean scores above 3.0, while some items scored below 3.0. One-sample t-tests indicated no statistically significant effect on fraud detection ($p = 0.745$) or prevention ($p = 0.837$) at the 0.05 level. The study concludes that forensic accounting is perceived to have a limited role in fraud detection and prevention in Kano State's public sector.

Keywords: Forensic Accounting, Fraud Detection, Fraud Prevention, Public Sector

1.0 Introduction

Fraud persists as a major challenge in Nigeria's public sector, with common forms including misappropriation of funds, inflated contracts, procurement irregularities, and payroll fraud through ghost workers. These practices drain public resources, impair service delivery, and erode trust in governance. In Kano State, systemic issues such as administrative inefficiencies, weak oversight, and inadequate internal controls exacerbate financial malfeasance (Okoye & Gbegi, 2013).

Forensic accounting has emerged as a specialized discipline that integrates accounting, auditing, and investigative skills to detect, prevent, and provide court-admissible evidence against fraud. Unlike traditional auditing, which is primarily compliance-oriented and reactive, forensic accounting adopts a proactive approach. It identifies red flags, traces financial anomalies, and supports litigation (Modugu & Anyaduba, 2013). Forensic accountants apply techniques such as data analytics, trend analysis, forensic audits, and investigative interviewing to scrutinize public expenditures, contract processes, and payroll systems. They often collaborate with agencies like the Economic and Financial Crimes Commission (EFCC) and the Independent Corrupt Practices Commission (ICPC) (Enofe et al., 2013).

In Kano State, persistent allegations of fund mismanagement and limitations in conventional control mechanisms highlight the need for advanced investigative tools. Recent payroll

reviews, for instance, uncovered 247 ghost workers including deceased and retired individuals—on local government payrolls, resulting in the recovery of approximately ₦27.8 million from March 2025 vouchers alone. Despite reforms such as biometric verification and integrated payroll systems, these incidents demonstrate ongoing vulnerabilities.

Although forensic accounting shows promise in enhancing accountability and transparency, its integration into Nigeria's public sector faces barriers, including shortages of skilled professionals, limited technological infrastructure, and insufficient institutional support (Akani & Ogbeide, 2017; Almustapha et al., 2025). Studies indicate that forensic techniques can significantly mitigate fraud risks when properly applied (Ariyo-Edu & Woli-Jimoh, 2024). However, its specific role and challenges in Kano State's public sector remain underexplored.

This study investigates the role of forensic accounting techniques in mitigating public sector fraud in Kano State. It aims to generate evidence-based insights for capacity building, regulatory reforms, and stronger institutional frameworks.

Public sector fraud continues to undermine governance, efficiency, and development in Nigeria, particularly in Kano State. Manifestations include embezzlement, contract inflation, project abandonment, and payroll irregularities involving ghost workers. These issues divert funds meant for infrastructure, healthcare, and education, thereby exacerbating poverty and inequality while weakening public confidence in government institutions.

Traditional audits and internal controls have largely proven inadequate. Their reactive, compliance-focused nature lacks the depth required to uncover sophisticated schemes involving collusion or digital manipulation (Afrogha et al., 2025; Ezejiofor & Okonkwo, 2025). In Kano State, recent payroll clean-up exercises revealed 247 ghost workers (deceased or retired) on local government rolls, with fraudulent payments totaling ₦27,824,395.40 for March 2025 alone. Although the state recovered these funds, such reactive measures highlight persistent systemic gaps rather than resolving root causes.

Forensic accounting offers a more robust alternative by combining accounting expertise with investigative methods to proactively identify anomalies, trace illicit flows, gather admissible evidence, and support prosecution. Techniques such as data analytics and forensic audits can strengthen detection and deterrence in public expenditures and payroll systems. However, adoption remains limited due to inadequate skilled personnel, poor data quality, insufficient technology, weak institutional coordination, and occasional political interference (Almustapha et al., 2025; Akani & Ogbeide, 2017).

In Kano State specifically, forensic accounting has not been sufficiently institutionalized or evaluated, leaving public funds vulnerable despite anti-corruption reforms. Without targeted assessment of its applicability, challenges, and potential impact, fraud risks will persist, undermining sustainable development and governance effectiveness. This gap necessitates empirical investigation to inform practical strategies for integrating forensic accounting into

public financial management. The following research questions guided the study: To what extent does forensic accounting contribute to the detection of fraud in the public sector of Kano State? Secondly, how effective is forensic accounting in preventing fraud in the public sector of Kano State?

2.0 Literature Review

Forensic accounting integrates accounting principles, investigative techniques, and legal knowledge to detect, prevent, and provide court-admissible evidence on financial misconduct such as embezzlement, money laundering, and corruption (Dimitropoulos, 2025; Sangale, 2026). Dimitropoulos (2025) emphasizes its strength in complex cross-border investigations through detailed financial tracing, whereas Sangale (2026) highlights proactive prevention via enhanced training and governance policies. However, these studies are largely conceptual or survey-based in non-African settings, limiting their direct transferability to developing economies with severe institutional weaknesses.

Fraud, bribery, and corruption are interconnected unethical practices that undermine organizational integrity and public trust (Alhumoudi, 2024; Sargiacomo et al., 2024). Alhumoudi (2024) frames them as acts driven by personal gain through record manipulation or abuse of power, while Sargiacomo et al. (2024) adopt a broader public-interest lens, arguing that traditional auditing often falls short due to its narrow compliance orientation. In contrast to private-sector literature that treats fraud mainly as economic loss, public-sector studies stress wider societal impacts, including eroded service delivery and weakened governance (ACFE, 2024; OECD, 2025).

Fraud in the Public Sector

Public sector fraud manifests through embezzlement, procurement irregularities, inflated contracts, and ghost worker schemes, causing massive financial losses and diminished citizen confidence (Setle, 2025; ACFE, 2024). The ACFE (2024) Report to the Nations reveals that corruption accounts for 56% of occupational fraud cases in government organizations far higher than in private firms with tips (44%) and internal audits as the leading detection methods. Setle (2025) reinforces this in the Nigerian context, concluding that forensic accounting plays a crucial role in fraud prevention, though success depends on establishing dedicated forensic audit units and stronger internal controls.

Comparatively, Transparency International (2025) and OECD (2025) link high vulnerability in developing countries to institutionalized corruption and weak accountability mechanisms. In Nigeria, payroll fraud remains persistent; for instance, Kano State verification exercises have repeatedly uncovered thousands of ghost workers, resulting in significant monthly savings when addressed (as documented in recent payroll fraud analyses). However, most existing research remains descriptive and lacks rigorous empirical evaluation of preventive interventions in specific sub-national contexts such as Northern Nigeria. Studies like those on MDAs in Benin City (2025) identify gaps in forensic document examination and lifestyle

analysis but offer limited insights into northern regional peculiarities, such as collusion in payroll and contract systems.

Tools and Techniques of Forensic Accounting

Forensic accounting employs advanced tools including data analytics, digital forensics, document examination, and interview techniques to uncover financial anomalies (Ubi et al., 2025; Etim et al., 2023). Ubi et al. (2025) demonstrate the utility of Benford's Law in detecting anomalies in federal ministry data (2015–2022), identifying manipulation in 40% of assessed cases where oversight was weak. Digital forensics enables recovery of deleted records and tracing of unauthorized access (Oluyide, 2025), while continuous auditing supports real-time monitoring (Banda, 2025; Sangale, 2026).

Critically, although these tools show strong potential, their application in Nigeria's public sector faces notable constraints, including inadequate technological infrastructure, limited skilled personnel, and poor data quality. Many studies focus on general trends but provide scant evidence on implementation outcomes in resource-constrained environments like Kano State. Moreover, while interview techniques enhance evidence gathering (Meyer, 2025), their effectiveness hinges on institutional independence often undermined by political interference in Nigerian public administration.

Identified Gaps in the Literature

Collectively, the reviewed studies affirm the conceptual and technical value of forensic accounting in fraud mitigation. However, a significant empirical gap persists: limited context-specific research on its effectiveness, challenges, and integration within Kano State's public sector. Most Nigerian-focused works remain broad or concentrated in southern states, with insufficient attention to northern dynamics such as persistent payroll ghost-worker schemes and contract inflation. This study addresses these gaps by empirically examining forensic accounting's role in Kano State, contributing to more targeted policy recommendations for capacity building and institutional reform.

3.0 Methodology

This study adopted a descriptive survey design. Data were collected through structured questionnaires from the Accounts and Finance Departments of all 25 ministries of the Kano State Government. The target population consisted of 300 employees. Because the population size was relatively small and fully known, a census approach was adopted. Thus, all 300 employees were included as respondents. This ensured complete representation and eliminated sampling error. The questionnaire was developed using a five-point Likert scale (Strongly Agree = 5, Agree = 4, Undecided = 3, Disagree = 2, strongly Disagree = 1). The researcher administered all 300 questionnaires, out of which 288 were returned and analysed, representing a 96% response rate.

Data were analysed using descriptive statistics (mean and standard deviation) to answer the research questions and inferential statistics (one-sample t-test) to test the hypotheses at a 0.05 level of significance with SPSS. The decision rule was set at a mean score of 3.0, such that a

mean score above 3.0 indicates agreement and a mean score below 3.0 indicates disagreement. The instrument underwent content validation by two experts in forensic accounting and public sector auditing. Reliability was tested through a pilot study with 30 respondents, yielding an overall Cronbach's alpha coefficient of 0.87, indicating high internal consistency.

Theoretical framework

This study is anchored on **Cressey's Fraud Triangle Theory** (Cressey, 1953). The theory posits that occupational fraud occurs when three elements coexist: **pressure** (non-shareable financial or personal problems that motivate the act), **opportunity** (weak internal controls and oversight that enable the act), and **rationalization** (cognitive justifications that allow the individual to reconcile unethical behavior with their self-image).

The Fraud Triangle Theory provides the conceptual foundation for this study. It guided the design of the research instrument, with dedicated sections measuring pressure, opportunity, and rationalization. The theory also informed the development of questionnaire items on forensic accounting techniques and shaped the interpretation of findings regarding how these techniques can reduce opportunity and challenge rationalization in Kano State's public sector.

Ethical Considerations

Ethical approval was obtained from the appropriate institutional committee. Participation was voluntary, and informed consent was secured from all respondents. Confidentiality and anonymity of responses were strictly maintained throughout the study.

Empirical Review

Recent empirical studies have examined the effectiveness of forensic accounting in Nigeria's public sector, but they exhibit notable limitations in scope and context. Ezejiolor and Okonkwo (2025) adopted a survey design and reported through regression analysis that forensic accounting techniques have a significant positive effect on fraud detection and prevention. Similarly, Setle and Yakubu (2025), using a survey design and multiple regression, concluded that forensic accounting plays a crucial role in fraud prevention. Almustapha et al. (2025) also found that forensic accounting skills significantly influence fraud management in Northwestern states' finance ministries.

While these studies consistently demonstrate the potential of forensic accounting, they share common weaknesses. Most are national or broadly regional in focus and rely heavily on general perceptions rather than state-specific realities. They offer minimal understanding of operational difficulties, including inadequate internal controls, political interference, and enduring ghost worker schemes prevalent in numerous Northern states. Furthermore, few studies explicitly integrate the Fraud Triangle Theory to examine how forensic accounting techniques address pressure, opportunity, and rationalization at the subnational level. This reveals a significant research gap: the lack of context-specific empirical investigation into the role and effectiveness of forensic accounting techniques in Kano State's public sector. The

present study addresses this gap by focusing exclusively on Kano State and integrating Cressey's Fraud Triangle Theory into both the research design and analysis.

4.0 Results

Table 1: Mean and Standard Deviation on the Extent to Which Forensic Accounting Contributes to the Detection of Fraud in the Public Sector of Kano State

N = 288

S/N	Statement	Mean	SD	Remark
1	Forensic accounting exposes hidden fraud in public financial records.	3.01	1.56	Agree
2	Forensic accounting is minimally effective in enhancing the accuracy of fraud investigations in the public sector.	2.67	1.50	Disagree
3	Forensic accounting exposes complex financial crimes in government agencies.	3.28	1.54	Agree
4	Forensic accounting utilizes digital tools to detect financial irregularities.	3.32	1.56	Agree
5	Forensic accounting enhances transparency in government financial reporting.	3.28	1.50	Agree
6	Forensic accounting has not been sufficiently effective in providing credible evidence for fraud prosecution.	2.69	1.55	Disagree
Grand Mean		3.04		

Source: Field Study, 2026.

The descriptive statistics presented in Table 1 indicate that respondents agreed with four items, with mean scores ranging from 3.01 to 3.32 and standard deviations ranging from 1.50 to 1.56. The remaining two items recorded mean scores of 2.67 and 2.69, respectively, with corresponding standard deviations of 1.50 and 1.55. The grand mean of 3.04 indicates that the majority of respondents agreed that forensic accounting contributes to the detection of fraud in the public sector of Kano State.

Table 2: Mean and Standard Deviation on the Effectiveness of Forensic Accounting in Preventing Fraud in the Public Sector of Kano State

N = 288

S/N	Statement	Mean	SD	Remark
1	Forensic accounting minimizes fraud risk in public entities.	3.15	1.52	Agree
2	Forensic accounting strengthens internal controls to prevent financial misconduct.	3.05	1.55	Agree
3	Forensic accounting encourages fraudulent behavior among public officials.	2.59	1.48	Disagree

S/N	Statement	Mean	SD	Remark
4	Forensic accounting promotes ethical financial practices in government agencies.	3.30	1.53	Agree
5	Routine forensic evaluations have not been sufficiently effective in preventing financial fraud.	2.65	1.50	Disagree
6	Training in forensic accounting enhances fraud prevention.	3.11	1.53	Agree
Grand Mean		2.97		

Source: Field Study, 2026.

The descriptive statistics presented in Table 2 show that respondents agreed with four items, with mean scores ranging from 3.05 to 3.30 and standard deviations ranging from 1.52 to 1.55. The remaining two items recorded mean scores of 2.59 and 2.65, respectively, with corresponding standard deviations of 1.48 and 1.50. The grand mean of 2.97 indicates that the majority of respondents agreed that forensic accounting is effective in preventing fraud in the public sector of Kano State.

Testing of Hypotheses

Ho1: Forensic Accounting Has No Significant Effect on Fraud Detection in the Public Sector of Kano State

Table 4.1:

One-Sample t-test Result for Fraud Detection

Variable	Mean	Std. Deviation	t-value	df	p-value	Decision at 0.05 Level
Fraud Detection (Overall)	3.042	0.301	0.345	5	0.744	Fail to Reject Ho1

Interpretation: The overall mean score for fraud detection is 3.042. The result of the one-sample t-test indicates that the effect is not statistically significant ($t = 0.345$, $p = 0.744 > 0.05$). Therefore, the null hypothesis (Ho1) is not rejected. This implies that, based on the perceptions of the respondents, forensic accounting does not have a statistically significant effect on fraud detection in the public sector of Kano State.

Ho2: Forensic Accounting Has No Significant Contribution to Fraud Prevention in the Public Sector of Kano State

Table 4.2:

One-Sample t-test Result for Fraud Prevention

Variable	Mean	Std. Deviation	t-value	df	p-value	Decision at 0.05 Level
Fraud Prevention (Overall)	2.975	0.288	-0.217	5	0.837	Fail to Reject Ho2

Interpretation: The overall mean score for fraud prevention is 2.975. The one-sample t-test result shows that the contribution is not statistically significant ($t = -0.217$, $p = 0.837 > 0.05$). Consequently, the null hypothesis (Ho2) is not rejected. This suggests that, according to the views of the respondents, forensic accounting does not significantly contribute to fraud prevention in the public sector of Kano State.

Discussion of Findings

The finding in research question one revealed mixed perceptions among respondents on the extent to which forensic accounting contributes to fraud detection in Kano State's public sector. This is consistent with Ezejiolor and Okonkwo (2025), who reported that forensic accounting techniques have a significant positive effect on fraud detection in the Nigerian public sector. The one-sample t-test conducted on the overall mean (3.042) showed no statistically significant effect on fraud detection ($t = 0.34$, $p = 0.745 > 0.05$). Therefore, the null hypothesis, Ho1, was not rejected. The result of research question two showed mixed perceptions regarding the effectiveness of forensic accounting in preventing fraud. This finding aligns with Setle and Yakubu (2025), who concluded that forensic accounting plays a crucial role in fraud prevention in the Nigerian public sector. The one-sample t-test on the overall mean (2.975) indicated no statistically significant contribution to fraud prevention ($t = -0.21$, $p = 0.837 > 0.05$). Hence, the null hypothesis, Ho2, was not rejected.

5.0 Conclusion

This study examined the role of forensic accounting techniques in mitigating public sector fraud in Kano State. Using a census approach with 288 respondents, findings revealed moderate agreement among respondents that forensic accounting contributes to fraud detection and is effective in preventing fraud. Nonetheless, numerous items exhibited mean scores beneath 3.0, signifying divergent perceptions. One-sample t-tests further showed no statistically significant effect on both fraud detection and prevention. The study concludes that forensic accounting plays a moderate contributory role in fraud detection and prevention in Kano State's public sector.

Recommendations

Based on the findings, the study recommended that:

1. The Kano State Government should establish a dedicated Forensic Accounting Unit in the Office of the Accountant-General to improve fraud detection and prevention.
2. The Kano State Ministry of Finance should introduce mandatory regular training on forensic accounting techniques for accountants and finance officers in the public service.

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