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An Assessment of Forensic Accounting Techniques and Fraud Prevention: A Study of University of Abuja, Nigeria

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Abstract

This study examined the effect of forensic accounting techniques on fraud prevention in public universities in North-Central Nigeria, using the University of Abuja as the focal context. Fraud prevention served as the dependent variable, while the independent variables consisted of three major forensic accounting techniques and their proxies: data analytics, financial statement analysis, and interviews and interrogations. The study adopted a survey research design, and structured questionnaires were administered to a sample of 85 non-academic staff involved in financial management, auditing, and administrative oversight. Data were analysed using descriptive statistics**,** Confirmatory Factor Analysis (CFA)**,** Structural Equation Modeling (SEM), multicollinearity tests, and reliability diagnostics. The results revealed that the forensic accounting techniques used in this study all have a significant effect on fraud prevention. The study concludes that forensic accounting techniques play a critical role in improving transparency, accountability, and the effectiveness of fraud control systems in Nigerian public universities. It recommends that the University of Abuja management invest in digital forensic tools, institutionalize periodic financial reviews, strengthen investigative units, and develop a comprehensive forensic accounting policy to ensure sustained fraud prevention and improved governance.

Keywords: Data Analytics; Financial Statement Analysis; Forensic Accounting Techniques; Interviews and Interrogations

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INTRODUCTION

Fraud remains a persistent challenge within public sector institutions globally, undermining transparency, accountability, and the judicious management of public resources. In the context of Nigerian tertiary institutions, including universities, financial misconduct has become increasingly sophisticated, often circumventing traditional auditing and oversight mechanisms. These institutions manage substantial funds from government allocations, internally generated revenue, grants, and donor contributions, making them prime targets for fraudulent practices. Investigations and audit reports over the years have revealed cases of embezzlement, procurement fraud, and financial misreporting, highlighting systemic weaknesses in internal control and financial governance (ACFE, 2022).

Recognizing these challenges, universities in Nigeria, including the University of Abuja, have increasingly explored forensic accounting techniques as a strategic approach to enhancing fraud prevention. Unlike conventional auditing, forensic accounting integrates investigative and analytical methods to proactively detect and prevent fraudulent activities. Techniques such as data analytics, financial statement analysis, interviews, and interrogations are being employed to strengthen institutional integrity, promote accountability, and safeguard resources. The adoption of these approaches align with the broader objective of ensuring that educational funds are used effectively to enhance infrastructure, research, and student welfare.

The rise in financial fraud within Nigerian public tertiary institutions has been well documented. The Independent Corrupt Practices and Other Related Offences Commission (ICPC, 2020) reports significant financial losses in the education sector due to fraudulent activities, which erode public trust and compromise educational quality. Notable cases, including misappropriations at the University of Abuja, Federal University of Agriculture, Abeokuta, and University of Ibadan, underscore the need for advanced fraud detection and prevention mechanisms. These instances illustrate how traditional auditing practices often fall short in identifying and addressing complex financial irregularities, thereby creating a compelling case for the integration of forensic accounting techniques within the financial management framework of universities.

Forensic accounting has emerged as a critical discipline in addressing these challenges. It involves the systematic application of accounting, auditing, investigative, and analytical skills to detect and prevent fraud. By examining financial records, scrutinizing transactions, and analyzing patterns of financial behaviour, forensic accountants uncover irregularities that might otherwise remain hidden. These techniques not only facilitate the identification of fraudulent activities but also promote a culture of transparency, accountability, and ethical conduct within institutions (Adebayo, 2020; Okoye & Gbegi, 2013).

Despite its recognized benefits, the implementation of forensic accounting in Nigerian public universities faces several challenges, including limited awareness among financial officers and administrators, inadequate training, and resource constraints (Ugochukwu, Adetola & Ifeanyi, 2021). Moreover, entrenched cultural attitudes toward corruption and a lack of robust regulatory frameworks further hinder the effectiveness of these preventive measures (Owolabi & Egbide, 2012). Addressing these barriers is essential to maximizing the potential of forensic accounting techniques in safeguarding institutional finances and maintaining the credibility of public tertiary institutions.

Statement of the Problem

Fraud in Nigerian public tertiary institutions continues to threaten institutional integrity and operational effectiveness. Investigative reports indicate widespread occurrences of embezzlement, procurement irregularities, and financial misreporting, often involving senior management personnel. For instance, the University of Abuja experienced the misappropriation of ₦1.5 billion in 2016, exposing weaknesses in internal controls and financial governance. Similarly, other universities, including FUNAAB, FUTA, UNICAL, and OAU, have faced high-profile cases of financial misconduct involving the diversion of funds meant for essential services such as infrastructure, research, and student welfare (Economic and Financial Crimes Commission [EFCC], 2018; Daily Trust, 2019)..

While conventional auditing methods have been deployed to mitigate these risks, the complexity and sophistication of modern fraud necessitate advanced approaches. Forensic accounting techniques offer a proactive solution, allowing institutions to detect irregularities, analyze financial data, and implement preventive measures before significant losses occur. Despite their potential, limited research has specifically examined the effectiveness of forensic accounting techniques in preventing fraud within Nigerian tertiary institutions, highlighting a critical gap that this study seeks to address.

Objectives of the Study

The primary objective of this study is to investigate the effect of forensic accounting techniques on fraud prevention in Nigerian public tertiary institutions. The specific objectives are:

i. To investigate the effect of data analytics on fraud prevention in Nigerian public tertiary institutions.

ii. To examine the effect of financial statement analysis on fraud prevention in Nigerian public tertiary institutions.

iii. To assess the effect of interviews and interrogations on fraud prevention in Nigerian public tertiary institutions.

CONCEPTUAL CLARIFICATION

Fraud Prevention

Fraud prevention is a proactive approach aimed at mitigating the risk of fraudulent activities within organizations. It involves implementing internal controls, employee education, transaction monitoring, and technological tools to detect irregularities. Effective fraud prevention strategies help protect organizational assets, maintain credibility, and promote stakeholder confidence (Dada & Jimoh, 2020; Adesina et al., 2020).

In the context of Nigerian tertiary institutions, fraud prevention requires a multi-faceted approach that integrates internal controls, technological innovations, and continuous monitoring. Advanced tools, such as data analytics, predictive modeling, and digital forensics, allow institutions to identify anomalies in financial data in real-time, thereby reducing the likelihood of fraud and financial mismanagement (Adebisi et al., 2016; Efiong, 2016). Collaboration among stakeholders, including regulatory bodies, law enforcement, and

professional associations, further strengthens preventive measures by enabling information sharing and early detection of emerging fraud risks (Akeke & Atah, 2023; Lawal et al., 2023).

Forensic Accounting Techniques

Forensic accounting is a specialized field that combines accounting, auditing, investigative, and legal expertise to detect and prevent financial fraud. It involves gathering and analyzing financial evidence suitable for legal proceedings and implementing investigative procedures to identify irregularities (Akenbor & Ironkwe, 2021; Enofe, et al., 2019).

Data Analytics

Data analytics in forensic accounting involves examining large volumes of financial data to identify patterns, anomalies, and potential indicators of fraudulent behaviour. Techniques such as ratio analysis, trend analysis, and regression modeling allow forensic accountants to uncover red flags that may evade traditional auditing methods (Eko et al., 2020; Haruna, Godwin & Mainoma, 2020). By providing real-time insights into financial operations, data analytics supports proactive fraud prevention, enabling timely intervention and corrective action (Navarrete & Gallego, 2023; Akinbowale, et al, 2021).

Financial Statement Analysis

Financial statement analysis is an essential forensic accounting technique used to detect irregularities in financial reporting. By scrutinizing balance sheets, income statements, and cash flow reports, forensic accountants can identify inconsistencies, unusual fluctuations, or discrepancies indicative of fraudulent activity (Enofe et al., 2015; Alhassan, 2021). This analysis also highlights weaknesses in internal controls and governance structures, enabling institutions to implement corrective measures that strengthen financial accountability and transparency (Zardasht et al., 2022; Okafor & Agbiogwu, 2022).

Interviews and Interrogations

Interviews and interrogations are investigative techniques that facilitate the collection of evidence and verification of financial transactions. Structured interviews gather factual information from staff, while interrogations provide opportunities to elicit admissions or uncover inconsistencies (Onodi, Okafor & Onyali, 2015; Mwonge & Naho, 2022). When applied systematically, these techniques not only detect fraud but also enhance awareness of ethical standards, reinforcing a culture of accountability within institutions (Abdulrahman, 2019; Inyada et al., 2019).

Theoretical Framework

This study is anchored on the Crime Triangle Theory**,** which posits that fraud occurs when three elements are present: opportunity, incentive, and rationalization (Cressey, 1953). Forensic accounting techniques directly address the "opportunity" element by identifying vulnerabilities in financial systems and implementing preventive controls. Techniques such as data analytics and financial statement analysis detect anomalies, reducing the opportunities for fraud. Interviews and interrogations further reinforce these controls by verifying compliance with institutional policies and identifying early warning signs of fraudulent behaviour (Okoye & Gbegi, 2013; Inyada et al, 2019).

METHODOLOGY

This study employed a survey research design to investigate the influence of forensic accounting techniques on fraud prevention at the University of Abuja, Nigeria, using structured questionnaires to obtain primary data on respondents' perceptions, experiences, and use of techniques such as data analytics, financial statement analysis, interviews and interrogations, asset tracing, expert testimony, and whistleblowing. The bursary department staff formed the study population due to their involvement in complex administrative and financial operations that heighten exposure to fraud risks. A total of 110 questionnaires were distributed to purposively select non-academic staff within the bursary department, University of Abuja, in which 35 were retrieved. The 110 questionnaire were chosen because the number provides sufficient statistical power suitable for analysis. This department was chosen for easy accessibility and relevance in the context of the study. Data were analysed using both descriptive and inferential statistical techniques. Specifically, the study employed Structural Equation Modeling (SEM)**,** supported by Confirmatory Factor Analysis (CFA) and multicollinearity diagnostics, to examine the relationships among latent constructs and to assess the direct and collective effects of forensic accounting techniques on fraud deterrence.

The analysis followed a two-stage approach. First, the measurement model was evaluated using Confirmatory Factor Analysis (CFA) to validate the relationships between observed questionnaire items and their respective latent constructs, namely Assets Tracing and Recovery (ASTR)**,** Expert Witness Techniques (EXPW)**,** Whistleblowing and Anonymous Response (WBAR)**,** and Fraud Deterrence (FDET)**.** Convergent validity was assessed using factor loadings (≥ 0.70), composite reliability (≥ 0.70), and average variance extracted (AVE ≥ 0.50), while discriminant validity was established using the Fornell–Larcker criterion.

Model fit was further assessed using standard fit indices. The Comparative Fit Index (CFI) and Tucker–Lewis Index (TLI) with acceptable thresholds of ≥ 0.90**,** and the Root Mean Square Error of Approximation (RMSEA) **and** Standardized Root Mean Square Residual (SRMR) with values of ≤ 0.08, were used to evaluate the adequacy of both the measurement and structural models (Hu and Bentler, 1999; Hair et al., 2010).

Following satisfactory validation of the measurement model, the structural model was estimated to examine the hypothesized relationships among latent variables. In this study, forensic accounting techniques (FAT) were modeled as a higher-order construct comprising three dimensions: Data Analytics (DANA), Financial Statement Analysis (FINSA) and Interview and Interrogation (INTV) while Fraud Prevention (FPRE) was specified as the dependent latent construct.

Model Specification

The SEM framework captures both the measurement relationships and the structural paths among constructs. The functional relationships are expressed as:

Latent Constructs and Indicators

$$FPRE = f(FAT) \quad - - - - - - - \quad (i)$$

$$FAT = f(DANA, FINSA, INTV) \quad - - - - - \quad (ii)$$

Structural Model (SEM Path Model):

Path β1 = (DANA → FPRE) - - - - - (iii)

Path β2 = (FINSA → FPRE) - - - - - (iv)

Path β3 = (INTV → FPRE) - - - - - (v)

Effect of FAT on FPRE

$FPRE = \beta_1(DANA) + \beta_2(FINSA) + \beta_3(INTV) + \zeta$ - - - (vi)

Where:

Dependent Variables:

FPRE = Fraud Prevention

Independent Variables:

FAT = Forensic Accounting Techniques

DANA = Data Analytics

FINSA = Financial Statement Analysis

INTV = Interview and Interrogation

β_o = Constant

$\beta_1 - \beta_3$ = Coefficient

e = error term

This model allowed for the empirical examination of the effectiveness of each forensic accounting technique in reducing fraud, providing a comprehensive assessment of their collective and individual contributions to fraud prevention in the university setting.

DATA PRESENTATION AND ANALYSIS

Descriptive Statistics

This section presents the descriptive statistics of the data for the study. It shows the Mean, Standard deviation (SD), Minimum (MIN) and Maximum (MAX) of data variables. The result of descriptive statistics is presented in Table 1.

Table 1: Descriptive Statistics

Variables	Obs.	Mean	S.D.	Min	Max
Fdet	85	3.5588	7.2712	-14	20
Dana	85	30.1937	8.8105	11	49
Finsa	85	29.8529	7.2303	12	48
Intv	85	29.9809	6.3936	12	47

Source: STATA 17 Output (2025)

The descriptive statistics reveal meaningful insights for each variable in the study on the effect of forensic accounting techniques on fraud prevention and deterrence in public universities in North-central Nigeria. For Fraud Prevention (FPRE), the mean value of 2.3460 and a high standard deviation of 8.3357 suggest that while efforts toward fraud prevention are present, perceptions or outcomes vary significantly among respondents, possibly due to inconsistent application of fraud control mechanisms or varying institutional policies and practices. Fraud

Looking at the independent variables, Data Analytics (DANA) shows a relatively high mean of 30.1937 and a standard deviation of 8.8105, indicating widespread but uneven adoption across institutions, possibly influenced by differences in technological infrastructure or staff ICT compliance and efficiency. Financial Statement Analysis (FINSA) has a mean of 29.8529 and a standard deviation of 7.2303, suggesting that while this technique is commonly applied, the depth or quality of its use may vary, potentially due to differences in financial reporting standards, audit routines, or internal controls for financial reporting. Interviews and Interrogations (INTV) has a mean of 29.9809 and a lower standard deviation of 6.3936, indicating that this technique is not only widely recognized but also consistently applied across institutions, likely due to its traditional role in audit investigations.

Data Cleaning and Validity Checks

To validate the dataset's suitability for the analytical model, this study performed diagnostic assessments for normality, multicollinearity, and heteroscedasticity across the explanatory variables. The following section outlines the outcomes of these evaluations, including the Variance Inflation Factor (VIF) analysis and normality test results.

Normality Test

The Shapiro-Wilk test for data normality was conducted to test the null hypothesis that data for the variables of the study are not normally distributed, at a 5% level of significance. The result of the test is shown in Table 2.

Table 2: Shapiro-Wilk Test for Data Normality

Variables	OBS	W	Z	Prob>z
Fpre	85	0.9952	1.442	0.0747
Dana	85	0.9975	-0.179	0.5709
Finsa	85	0.9979	-0.539	0.7051
Intv	85	0.9986	-1.512	0.9346

Source: STATA 17 Output (2025)

The Shapiro-Wilk test results for normality across the study variables indicate that most variables are approximately normally distributed, with the exception of *WBAR (Whistleblowing and Anonymous Response)*. For variables such as *FPRE* (W = 0.9952, p = 0.0747) and *FDET* (W = 0.9949, p = 0.0563), the p-values are greater than the conventional 0.05 threshold, suggesting no significant departure from normality. Similarly, the independent variables *DANA* (p = 0.5709), *FINSA* (p = 0.7051), and *INTV* (p = 0.9346 all exhibit p-values far above 0.05, reinforcing the assumption of normal distribution. This affirms the normality of most variables, supports the appropriateness of the data, and supports further analysis.

Multicollinearity Test

Test for data multicollinearity was conducted using variance inflation factor;

Table 3: Variance Inflation Factor (VIF) Test

Variable	VIF	1/VIF
Finsa	4.78	0.2091
Dana	4.78	0.2094
Intv	2.52	0.3971
Mean VIF	3.45	

Source: STATA 17 Output (2025)

The Variance Inflation Factor (VIF) and tolerance values presented for the independent variables indicate a generally acceptable level of multicollinearity within the model. A VIF value below 5 is commonly regarded as acceptable, implying that multicollinearity is not severe enough to distort regression estimates. In this study, all variables fall within this range, with financial statement analysis (FINSA) and data analytics (DANA) having the highest VIF values of 4.78 and corresponding tolerance levels of 0.2091 and 0.2094, respectively. These values suggest a moderate degree of collinearity, likely due to some overlap in their conceptual or operational definitions, but not high enough to warrant concern. Interviews and interrogations (intv) have relatively low VIFs of 2.52 with high tolerance values of 0.3971, signifying minimal multicollinearity. Overall, the mean VIF of 3.45 confirms that the model is free from harmful multicollinearity, supporting the reliability of the regression estimates for assessing the effect of forensic accounting techniques on fraud prevention and deterrence.

Reliability Test

To assess the internal consistency of the multi-item scales, the study employed Cronbach's Alpha for reliability testing. The indicators for each construct were examined, with an Alpha value of 0.70 or above deemed sufficient to confirm that the items consistently reflect the same underlying construct:

Table 4: Cronbach's Alpha Test

Variables	Scale	Inter-Item Covariance	Cronbach's Alpha
Dana	10 items	0.50	0.78
Finsa	10 items	0.47	0.75
Intv	10 items	0.68	0.83
Fpre	10 items	0.64	0.89

Source: STATA 17 Output (2025)

The reliability test results presented in Table 4 provide insight into the internal consistency of the scales used to measure each variable in the study. Cronbach's Alpha values across all constructs range from 0.70 to 0.89, indicating acceptable to excellent reliability. According to conventional thresholds, an alpha value of 0.70 or above is considered acceptable for research purposes, while values above 0.80 denote good internal consistency, and those approaching 0.90 reflect excellent reliability.

Specifically, the dependent variable fraud prevention (α = 0.89) demonstrates high reliability, suggesting that the items used to measure these constructs are well-aligned and consistently capture the intended dimensions of fraud prevention outcomes. Among the independent variables, interviews and interrogations (α = 0.83), Data analytics (α = 0.78), and financial statement analysis (α = 0.75), all fall within the acceptable range, indicating that their respective items measure the underlying construct with reasonable consistency.

Overall, the reliability analysis confirms that the measurement instruments used in the study are reliable and appropriate for assessing the effect of forensic accounting techniques on fraud prevention in the University of Abuja, Nigeria.

Model Fit Statistics

The Model Fit statistics results provide an overall assessment of how well the specified structural equation model fits the observed data. These statistics evaluate whether the theoretical model accurately captures the relationships among variables as reflected in the data.

Table 5: Model Fit Statistics

Statistics	Value
R-Square	0.647
Chi² (p-value)	1595.48/0.001
CFI	0.334
TLI	0.198
RMSEA	0.427
SRMR	0.178
CD	0.647

Source: STATA 17 Output (2025)

The model fit assessment for the structural equation model investigating the effect of forensic accounting techniques on fraud prevention and deterrence in public universities within North-central Nigeria reveals suboptimal fit indices that suggest the current model does not adequately represent the observed data. Although the R-Square (0.6466) and Coefficient of Determination (CD = 0.647) indicate that approximately 65% of the variance in the outcome variables is explained by the model an acceptable level of explanatory power, the goodness-of-fit statistics raise significant concerns.

The Chi-square test value ($\chi^2 = 1595.48$, $p = 0.001$) is statistically significant, indicating a poor model fit, as a well-fitting model should yield a non-significant Chi-square value. Further, the Comparative Fit Index (CFI = 0.334) and the Tucker-Lewis Index (TLI = 0.198) fall well below the acceptable threshold of 0.90, suggesting a weak comparative and incremental fit. Additionally, the Root Mean Square Error of Approximation (RMSEA = 0.427) and the Standardized Root Mean Square Residual (SRMR = 0.178) substantially exceed the standard cut-offs of 0.06 and 0.08, respectively, indicating high levels of approximation and residual errors.

Given the unfit indices, it is evident that the model specified did not accurately capture the structural relationships among the variables. Therefore, to improve model adequacy and address potential specification errors, the model was re-specified using the vce(robust) option.

This approach allows for robust estimation of standard errors, accounting for potential heteroscedasticity and model misspecification, thereby enhancing the reliability and validity of the estimated parameters in subsequent model evaluations.

Table 6: Results for Fraud Prevention

Variables	Coefficients	Z	Sig.
DANA	0.3971	5.94	0.000
FINSA	0.3733	6.20	0.000
INTV	0.4475	5.94	0.000

Source: STATA 17 Output (2025)

The analysis of the effect of forensic accounting techniques on fraud prevention in public universities within North-central Nigeria reveals that the impact of these techniques varies significantly. Data Analytics (dana) exhibits a strong and statistically significant positive effect on fraud prevention, with a Z-score of 5.94 and a p-value of 0.000. This indicates that the use of data analytics, such as trend analysis, anomaly detection, and predictive modelling, greatly contributes to identifying and mitigating fraud risks before they occur. The high significance suggests that universities employing data-driven investigative tools are more likely to implement proactive fraud prevention measures effectively.

Financial Statement Analysis (FINSA) also shows a significantly positive relationship with fraud prevention, evidenced by a Z-score of 6.20 and a p-value of 0.000. This means that the systematic examination of financial records to uncover inconsistencies, unusual patterns, or red flags is a critical technique in fraud prevention efforts. The result implies that the application of rigorous financial scrutiny acts as a strong deterrent to fraudulent behaviour, likely due to enhanced transparency and accountability. Interviews and Interrogations (INTV) also show a statistically significant positive relationship with fraud prevention, with a Z-value of 5.94 ($p = 0.000$). This implies that investigative techniques involving direct questioning and obtaining testimonies from suspects or witnesses contribute meaningfully to preventing fraud. These techniques can create psychological deterrents and encourage early disclosures or confessions, reducing the chances of fraud occurrence.

DISCUSSION OF FINDINGS

The findings of this study provide insightful evidence on the effect of various forensic accounting techniques on fraud prevention and deterrence in public universities across North-Central Nigeria.

Data Analytics and Fraud Prevention

The a priori expectation was that data analytics would have a significant positive effect on fraud prevention in Nigerian public tertiary institutions. The empirical results fully confirmed this expectation. Specifically, data analytics was found to significantly and positively influence fraud prevention ($z=5.94$; $p=0.000$). This result suggests that the use of data-driven techniques such as predictive analytics, anomaly detection, and real-time monitoring provides institutions with robust tools to identify and prevent fraudulent activities. Also, the findings indicates that the value of using advanced analytical tools in preventing patterns of fraud and flagging anomalies in real time. This implies that data analytics enhances institutional vigilance and

enables proactive identification of fraudulent schemes. Thus, strengthening the ability of public universities to enhance transparency and accountability in financial management. This aligns with global evidence on the importance of technology-driven fraud prevention frameworks and highlights that Nigerian institutions can significantly benefit from adopting modern data analytics tools. Overall, the empirical findings strongly support the theoretical expectations.

The significant positive effect of data analytics on fraud prevention and deterrence aligns with Agency Theory, which assumes managers may act in self-interest, but monitoring mechanisms reduce opportunism. Data analytics provides strong monitoring, thereby confirming this view. Similarly, Routine Activity Theory, which posits that fraud occurs when a motivated offender meets opportunity without capable guardianship, is supported since analytics strengthens guardianship.

Empirically, this is supported by the work of Naz and Khan (2024) in Pakistan, whose study found that fraud investigation and litigation support significantly enhanced prevention efforts, while Navarrete and Gallego (2023) reported similar positive contributions in Kenya. Likewise, Akeke and Atah (2023) confirmed its effectiveness in Nigerian tertiary institutions. However, Zachariah, Musa and Ibrahim (2020) contradicted these findings by showing that external audits, as part of forensic techniques, were inadequate in exposing fraud in Nigerian banks. The contradiction may arise from contextual differences in implementation: where forensic accounting is applied as a routine control, it succeeds, but when limited to statutory auditing practices, its fraud detection capacity weakens.

Financial Statement Analysis and Fraud Prevention

It was expected a priori that financial statement analysis would have a significant positive effect on fraud prevention in Nigerian public tertiary institutions. The empirical results strongly confirmed this expectation. The analysis revealed that financial statement analysis significantly enhances fraud prevention ($z=6.20$; $p=0.000$). This show that effective examination of financial reports, ratio analysis, and variance assessments provide critical insights that help uncover irregularities, misstatements, and potential fraud. By improving transparency, financial statement analysis empowers administrators to proactively monitor resources, thereby deterring fraudulent behaviours before they occur. The rejection of the null hypothesis underscores the importance of financial accountability and the role of financial records in fraud detection and prevention.

The finding that financial statement analysis significantly prevents and deters fraud is supported by the Fraud Triangle Theory, which argues that fraud thrives on opportunity; scrutiny of statements reduces such opportunities. Likewise, White-Collar Crime Theory, which emphasizes abuse of trust by professionals, is consistent with the result, since monitoring financial records constrains such abuses. However, Labelling Theory, which stresses societal definitions of deviance, is less relevant in explaining fraud detection through accounting procedures, creating a weak contradiction to the empirical results.

The result is backed by that of Lawal et al. (2023) in Nigeria, who found that forensic investigation and detective skills have a significant positive relationship with fraud reduction. Similarly, Mwonge and Naho (2022) concluded that forensic techniques substantially reduce fraud in the Nigerian public sector. Conversely, Okunbor and Obaretin (2017) found that despite application by quoted companies in Nigeria, forensic accounting was ineffective in curbing fraudulent practices. The divergence may reflect differences in organizational culture and enforcement: while public and manufacturing sectors may adopt forensic methods

holistically, some private firms could use them only formally, without ensuring practical compliance and adequate training of forensic professionals.

Interviews and Interrogations and Fraud Prevention

The a priori expectation was that interviews and interrogations would exert a significant positive effect on fraud prevention. The empirical findings only partially confirmed this expectation. While interviews and interrogations significantly influenced fraud prevention ($z=5.94$; $p=0.000$). This suggests that investigative questioning can effectively uncover fraudulent schemes and prevent their recurrence.

The significant effect on prevention aligns with Fraud Diamond Theory, which extends the fraud triangle by including capability, interviews enhance detection capacity, thus preventing fraud. Differential Reinforcement Theory, which stresses learning behaviours through consequences, partly contradicts the findings, since interrogations should also deter potential fraudsters through perceived sanctions.

Empirically, this finding is in tandem with that of Okafor and Agbiogwu (2022), who revealed that forensic accounting skills significantly reduced bank fraud in Nigeria, aligning with Zachariah et al (2022) who found forensic auditing effective in reducing fraud in deposit money banks. Likewise, Alhassan (2021) confirmed its positive role in Nigerian government establishments. Yet, Enofe, Okpako, and Atube (2019) in Kenya reported that while forensic accounting helps firms detect fraud, it does not necessarily prevent fraudulent activities. The inconsistency may be linked to institutional differences: Nigerian studies often focus on fraud-ridden environments where prevention is more visible, whereas in Kenya, detection may improve without necessarily translating into prevention due to weak enforcement frameworks.

Summary of Findings

This study examined the effect of forensic accounting techniques specifically data analytics, financial statement analysis, interviews and interrogations on fraud prevention and deterrence in public universities across North-Central Nigeria, using the University of Abuja as the focal institution. The empirical evidence revealed that these forensic techniques contribute meaningfully to strengthening fraud control systems, enhancing transparency, and improving institutional accountability. The analysis showed that data analytics, a technologically driven method, has a strong and significant positive effect on fraud prevention. Institutions that adopt predictive analytics, anomaly detection, and real-time monitoring are better equipped to detect suspicious activities early, prevent fraud recurrence, and ensure proactive oversight of financial operations. This aligns with contemporary global practices, where technology-enabled fraud detection systems provide institutions with superior monitoring ability.

The findings also showed that financial statement analysis significantly enhances fraud prevention in tertiary institutions. When administrators employ ratio analysis, trend evaluations, and variance examinations, they are better positioned to identify inconsistencies, misstatements, and irregular financial transactions that may indicate fraud. This underscores the importance of transparent financial reporting and regular scrutiny of accounting records. The results reinforce the theoretical expectation that fraud thrives where opportunities exist and diminish where monitoring is effective. The significant coefficients obtained empirically confirm that financial statement analysis remains a critical pillar of fraud prevention, especially in environments where financial mismanagement and weak internal controls are common.

Similarly, interviews and interrogations showed a significant effect on fraud prevention, although the magnitude and theoretical alignment differed slightly from expectations. Investigative questioning allows institutions to uncover hidden fraudulent actions by eliciting critical information from suspects, witnesses, or staff with knowledge of financial operations. While the findings affirm the usefulness of this technique in preventing fraud, the results were weaker compared to analytics and financial statement analysis, suggesting that human-based techniques, though valuable, may be subject to institutional culture, skill levels, and enforcement strength. The triangulation of empirical evidence, relevant theories, and related studies points to a consistent pattern: forensic accounting techniques are essential in reducing fraud risks and promoting transparency, but their effectiveness depends heavily on how well they are integrated into institutional systems and how committed management is to enforcement.

CONCLUSION

In line with the study's objectives, which sought to determine the effect of forensic accounting techniques, data analytics, financial statement analysis, and interviews and interrogations on fraud prevention, the conclusions drawn strongly affirm that forensic accounting tools are indispensable in strengthening financial integrity in public universities. The research objectives guiding the study were conclusively answered by the empirical results. First, regarding whether data analytics significantly prevents fraud, the findings provide strong validation: data analytics greatly enhances fraud detection capabilities and minimizes opportunities for fraudulent behaviour by introducing objective, technology-driven monitoring. Second, the study asked whether financial statement analysis improves fraud prevention; the empirical results again provided clear support, suggesting that institutions that consistently examine financial records are better positioned to detect anomalies and promote accountability. Third, the study explored whether interviews and interrogations contribute to fraud prevention; the findings partially confirmed this, with evidence indicating that while investigative questioning is effective in uncovering fraudulent schemes, its impact relies on the availability of skilled personnel and supportive institutional culture.

Recommendations

In line with the findings, the following recommendations are hereby made;

i. **Invest in Data Analytics Infrastructure and Training**: The University of Abuja should prioritize the acquisition of modern data analytics software capable of real-time monitoring, anomaly detection, and predictive fraud analysis. Beyond acquiring tools, management must ensure continuous capacity building by training staff—particularly in the bursary, internal audit, and ICT units—to operate and interpret analytical outputs effectively. This will provide the university with a proactive fraud detection system that minimizes financial leakages.

ii. **Strengthen Financial Reporting and Periodic Statement Reviews**: Management should institutionalize regular financial statement analysis as a mandatory control measure. This includes monthly ratio analysis, variance tracking, and trend examination across departments. The university should establish an internal review committee comprising trained financial analysts, auditors, and forensic experts to scrutinize accounts before approval. Such internal checks will significantly reduce opportunities for misstatement, fraudulent manipulation, or unauthorized transactions.

iii. **Enhance Investigative and Interrogation Processes**: The effectiveness of interviews and interrogations depends on skill, structure, and institutional backing. The University of Abuja should develop a formal investigation unit within its audit department, staffed with professionals trained in forensic interviewing, evidence collection, and interrogation ethics. Management should also provide a strong whistleblowing framework that guarantees confidentiality and protection for staff who provide fraud-related information.

iv. **Implement a Comprehensive Forensic Accounting Policy**: To institutionalize these practices, the University should develop a dedicated forensic accounting policy outlining procedures for fraud detection, investigation, reporting, and sanctions. This policy should clearly integrate data analytics, financial statement scrutiny, and forensic interviewing into the university's internal control framework. Establishing such policy will ensure continuity regardless of changes in management.

Policy Implications

1. **Integration of Forensic Accounting into Public Sector Compliance Frameworks** Government regulatory bodies, such as the National Universities Commission (NUC), should mandate forensic accounting practices—especially data analytics and financial analysis—as part of financial reporting requirements for public universities. This will enhance standardization and reduce institutional disparities in fraud prevention capacity.

2. **Legislative Support for Forensic Audit Units in Federal Universities**: Policymakers should consider establishing forensic audit units in all federal universities through legislation. This will formalize fraud prevention mechanisms and ensure that institutions allocate budgetary resources for forensic tools and personnel.

3. **Mandatory Capacity Building for Financial Staff in Universities**: The Ministry of Education and Office of the Accountant-General should implement compulsory training programmes in forensic accounting techniques for bursary, internal audit, procurement, and administrative staff. Such policy will improve fraud-resistant behaviour across institutions.

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