FORENSIC ACCOUNTING AND FINANCIAL FRAUD DETECTION: EVIDENCE FROM MANUFACTURING COMPANIES IN NIGERIA

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Abstract
Financial fraud remains a major threat to organizational sustainability, corporate governance, and investor confidence within Nigeria's manufacturing sector. This study examined the influence of forensic accounting on financial fraud detection among manufacturing companies in Nigeria. A descriptive survey research design was adopted, with data collected from financial managers, internal auditors, and accountants selected through a stratified random sampling technique from manufacturing firms in Lagos and Ogun States. Quantitative data were analyzed using descriptive statistics, regression analysis, and analysis of variance (ANOVA), while qualitative responses were examined through thematic analysis to complement the statistical findings. The results revealed that forensic accounting significantly improves the detection of financial fraud by strengthening investigative procedures, enhancing litigation support, and reinforcing internal control systems. The study further found that digital forensic techniques and data analytics increase the effectiveness of identifying concealed fraudulent activities. However, the adoption of forensic accounting remains constrained by inadequate professional expertise, limited organizational awareness, high implementation costs, and insufficient technological infrastructure. The study concludes that integrating forensic accounting into corporate governance and risk management frameworks can substantially improve financial transparency, accountability, and fraud prevention in Nigerian manufacturing companies. It recommends sustained investment in forensic accounting capacity building, wider adoption of digital forensic technologies, stronger regulatory oversight, and enhanced whistleblower protection mechanisms to strengthen fraud detection and promote sound financial management.

Keywords: Financial fraud detection; Forensic accounting; Manufacturing companies; Nigeria.

1.0Introduction

In recent years, the Nigerian economy has experienced a significant increase in the occurrence and sophistication of corporate fraud and financial misconduct, particularly within the

manufacturing sector, which remains a key contributor to national economic growth. Common forms of fraud include asset misappropriation, procurement-related fraud, manipulation of financial statements, and payroll abuses, all of which have weakened investor confidence, reduced organizational profitability, and undermined public trust in corporate governance practices (Okoye & Gbegi, 2013; Mbatuegwu, Uwaleke, & Azah, 2020). Although conventional auditing practices and financial regulatory frameworks are well established, the continued prevalence of financial fraud has highlighted the shortcomings of traditional audit approaches, which are primarily designed to ensure compliance rather than detect or investigate fraudulent activities (Rezaee & Riley, 2010).

As financial fraud continues to evolve in complexity through digital manipulation, insider collaboration, and the concealment of financial transactions, traditional auditing techniques have become increasingly inadequate in addressing these emerging challenges. This has stimulated growing interest in forensic accounting, a specialized discipline that integrates accounting, auditing, investigative, and legal expertise to examine financial irregularities and generate evidence that is admissible in legal proceedings (Crumbley, Heitger, & Smith, 2017). By adopting a more investigative and analytical approach, forensic accounting enhances the identification, quantification, and reporting of financial crimes, making it an indispensable mechanism for combating fraud in high-risk industries such as manufacturing.

In Nigeria, the relevance of forensic accounting has continued to expand as a result of institutional and legal frameworks that encourage its application in combating financial crimes. The Companies and Allied Matters Act (CAMA) promotes corporate accountability and proper recordkeeping, while the Money Laundering (Prohibition) Act provides measures for curbing financial crimes and strengthening financial transparency. Regulatory and enforcement agencies, including the Economic and Financial Crimes Commission (EFCC) and the Independent Corrupt Practices and Other Related Offences Commission (ICPC), have increasingly relied on forensic audits in investigating financial misconduct, particularly in sectors vulnerable to fraudulent practices (Eiya & Otalor, 2013). Their dependence on forensic evidence during investigations and prosecutions further underscores the growing importance of forensic accounting within Nigeria's anti-fraud framework.

Furthermore, the rapid expansion of digital financial transactions and the increasing integration of technology into business operations have created new forms of fraud that require sophisticated investigative techniques and specialized expertise to detect and prevent (Mbatuegwu, Osongbule, & Agim, 2025). The manufacturing sector, characterized by high transaction volumes, complex operational processes, and extensive interactions with third-party suppliers and contractors, remains particularly susceptible to these risks. According to Modugu and Anyaduba (2013), forensic accounting is especially valuable in organizations where internal control systems are weak and opportunities for managerial collusion are prevalent, conditions that continue to characterize many manufacturing companies in Nigeria.

In response to these developments, professional accounting bodies such as the Institute of Chartered Accountants of Nigeria (ICAN) and the Association of National Accountants of Nigeria (ANAN) have started incorporating forensic modules into their training curricula,

promoting certifications in forensic auditing and encouraging their members to build investigative competencies. This has contributed to a gradual shift in the accounting profession in Nigeria from traditional auditing practices to a more proactive, forensic-oriented approach to financial oversight.

In summary, the growing complexity of financial fraud and the limitations of conventional auditing have necessitated the rise of forensic accounting in Nigeria. As the manufacturing sector continues to grapple with issues of financial integrity and internal control weaknesses, the integration of forensic accounting procedures provides a timely and necessary solution for fraud detection, prevention, and legal redress.

Moreover, the growth of digital banking and the rise of cybercrime have further increased the demand for forensic accountants capable of navigating complex financial systems and tracing digital footprints of fraudulent transactions. Certifications from bodies like the Institute of Chartered Accountants of Nigeria (ICAN) and the Association of National Accountants of Nigeria (ANAN) have also played a role in institutionalizing forensic practices. Despite these developments, many organizations in Nigeria have yet to fully integrate forensic accounting into their internal control and risk management frameworks. Therefore, this study seeks to investigate the impact of forensic accounting procedures on fraud detection in the Nigerian manufacturing sector.

Despite the implementation of regulatory reforms and the increasing emphasis on corporate governance practices in Nigeria, financial fraud continues to be a widespread challenge, particularly in the manufacturing sector. The sector has consistently reported various forms of financial irregularities, including but not limited to falsified financial statements, inflated operational expenses, payroll fraud, procurement scams, and deliberate misappropriation of assets (Okoye & Gbegi, 2013). These fraudulent activities often occur internally and are sometimes orchestrated by those in positions of financial trust, making them difficult to detect through routine financial reviews.

One of the primary concerns is that traditional auditing approaches, while still relevant and widely practiced, have proven insufficient in detecting complex fraud schemes. These conventional audits focus primarily on compliance with accounting standards and financial reporting accuracy, rather than actively seeking out intentional deception or criminal behavior (Modugu & Anyaduba, 2013). This gap in audit functionality means that financial fraud especially when carefully planned or collusively executed often remains undetected until long after the damage has been done.

Moreover, the persistence of fraud is further aggravated by managerial collusion, which allows perpetrators to override controls, bypass checks, and suppress internal investigations (Rezaee & Riley, 2010). In environments where top-level executives are either complicit or turn a blind eye, even the most rigorous traditional audits are rendered ineffective. The situation is worsened by the presence of outdated accounting systems, weak regulatory enforcement, and the general lack of internal control frameworks in many Nigerian manufacturing firms. These systemic deficiencies contribute to an organizational environment where fraud can flourish with little resistance.

It is also worth noting that the discovery of financial fraud is often delayed, and by the time it is detected, organizations may have suffered significant financial losses or reputational damage. In some cases, key evidence may have already been altered, lost, or destroyed making recovery and legal redress difficult or impossible. This reactive approach to fraud detection has been identified as one of the core weaknesses in Nigeria's corporate financial governance landscape (Chukwujioke, Onuoha, & Okoye, 2015).

In light of these issues, there is a growing recognition of the need for more proactive and investigative tools, such as forensic accounting, which combines auditing expertise with investigative and legal skills to detect, analyze, and present evidence of fraud. Forensic accounting goes beyond surface-level financial reviews and aims to uncover intentional misconduct using techniques such as digital forensics, data mining, ratio analysis, and Benford's Law.However, despite the demonstrated value of forensic accounting, its adoption in the Nigerian manufacturing sector remains limited. Challenges such as a lack of awareness, the high cost of forensic technologies, and a shortage of trained forensic professionals continue to hinder its widespread implementation (Eiya & Otalor, 2013). Many organizations still rely heavily on traditional auditing processes and are reluctant to invest in more rigorous forensic approaches unless compelled by regulatory bodies or significant financial losses.

Therefore, the central problem this study seeks to address is whether forensic accounting procedures significantly enhance the detection of financial fraud in the Nigerian manufacturing industry. Additionally, it investigates the extent to which these procedures can be effectively integrated into organizational frameworks to combat fraudulent practices and improve financial accountability across the sector.

Objectives of the Study

i. Examine the effect of forensic accounting procedures on financial fraud detection.
ii. Assess the role of investigative methods in litigation support.
iii. Evaluate the influence of digital forensic tools and accountant expertise.

Research Questions

i. Do forensic accounting procedures improve financial fraud detection?
ii. What role do forensic methods play in litigation support?
iii. How do digital forensic tools and professional expertise contribute to fraud detection?

Hypotheses

In line with the research objectives and questions, this study is guided by a testable hypothesis framework aimed at examining the relationship between forensic accounting procedures and financial fraud detection in Nigeria's manufacturing sector. The hypotheses are formulated based on prior theoretical assumptions and empirical evidence suggesting that forensic accounting may contribute significantly to uncovering and preventing fraudulent practices within corporate settings.To assess the impact of forensic accounting on fraud detection, the following null and alternative hypotheses were developed:

H_{01}: Forensic accounting procedures have no significant effect on financial fraud detection in manufacturing companies in Nigeria.

This hypothesis posits that the use of forensic techniques such as investigative accounting, litigation support, and digital forensic tools does not result in measurable improvements in identifying or preventing financial fraud within the selected organizations. Acceptance of the null hypothesis would suggest that forensic accounting does not offer added value beyond traditional audit procedures in detecting corporate fraud.

H_1: Forensic accounting procedures significantly affect financial fraud detection in manufacturing companies in Nigeria.

The alternative hypothesis asserts that forensic accounting has a statistically significant and positive influence on the ability of organizations to detect and respond to fraudulent activities. This includes uncovering concealed financial irregularities, supporting litigation processes, and strengthening internal controls. Rejection of the null hypothesis in favour of the alternative would validate the effectiveness of forensic accounting techniques as essential tools for detecting fraud and promoting organizational transparency.

These hypotheses will be empirically tested using statistical tools such as regression analysis and ANOVA, based on data collected from financial professionals in the Nigerian manufacturing sector. The results will determine whether forensic accounting serves as a critical intervention in combating financial fraud and whether it should be more widely adopted as a core component of financial oversight systems.

The scope of this study is geographically and contextually defined to focus on manufacturing companies located in Lagos and Ogun States, Nigeria. These two states were purposefully selected due to their economic significance and high concentration of industrial and manufacturing firms. Lagos State, known as the commercial nerve center of Nigeria, hosts a large number of both local and multinational manufacturing companies across various sectors, including food processing, textiles, chemicals, and building materials. Similarly, Ogun State has emerged in recent years as a major industrial hub, housing several manufacturing clusters due to its proximity to Lagos and its industrial-friendly policies.

By focusing on these two states, the study captures a broad spectrum of financial management practices, fraud risks, and the potential application of forensic accounting procedures within a realistic, high-risk corporate environment. This geographical limitation allows for an in-depth exploration of forensic accounting's practical relevance, while ensuring that the findings are grounded in the actual experiences of financial professionals operating within Nigeria's key manufacturing regions.

Contextually, the study is limited to the assessment of forensic accounting procedures as tools for financial fraud detection. It does not delve deeply into legal prosecution outcomes, tax fraud, or forensic applications outside the financial domain. The primary emphasis is on the internal application of forensic accounting by auditors, financial managers, and accountants within corporate governance frameworks. Furthermore, the study focuses on employees in finance-

related roles, as they are most directly involved in fraud prevention, detection, and reporting activities.

This study holds substantial significance for multiple stakeholders, including regulatory authorities, professional accounting bodies, corporate managers, internal auditors, policymakers, and academic researchers. In an era where corporate fraud continues to pose a serious threat to financial stability and investor confidence in Nigeria, this research contributes to the growing body of knowledge on the strategic role of forensic accounting in promoting financial integrity and transparency.

For regulatory agencies such as the Economic and Financial Crimes Commission (EFCC), Independent Corrupt Practices Commission (ICPC), and the Financial Reporting Council of Nigeria, the findings offer empirical evidence that can guide the formulation and enforcement of policies aimed at curbing financial fraud through forensic audit mandates. Professional accounting bodies such as the Institute of Chartered Accountants of Nigeria (ICAN) and the Association of National Accountants of Nigeria (ANAN) can also benefit by incorporating forensic modules into their training and certification curricula, thereby producing more capable forensic professionals.

For corporate managers and board members, the research emphasizes the importance of integrating forensic accounting procedures into their internal control systems to improve fraud detection and minimize financial loss. The insights presented in the study can assist them in making informed decisions about resource allocation for fraud prevention technologies, staff training, and audit reforms.Moreover, the study is academically relevant as it provides a foundation for future research and scholarly discourse on the role of forensic accounting in emerging economies. It highlights current challenges in its implementation, such as cost, awareness, and skills gaps, thereby opening avenues for further investigation and policy dialogue.Ultimately, the study reinforces the notion that forensic accounting is not just a reactive tool for uncovering fraud after it has occurred, but a proactive instrument for preventing fraud, strengthening internal controls, and ensuring sustainable financial governance in Nigeria's manufacturing sector.

2.0 Literature Review

Forensic accounting is a specialized field that combines elements of accounting, auditing, and investigative techniques to examine financial discrepancies and uncover fraudulent activities. It is often applied in situations where there is suspicion of financial wrongdoing, especially in corporate settings, and it plays a crucial role in both civil and criminal litigation. According to Bologna and Lindquist (1995), forensic accounting encompasses the detailed examination of financial records with the intention of using the results in a court of law. It goes beyond the routine audit process by not only assessing financial accuracy but also identifying, investigating, and documenting instances of financial misconduct or irregularities. The process may involve analyzing financial statements, tracing hidden assets, interviewing suspects or witnesses, reconstructing incomplete records, and preparing reports that are admissible as legal evidence (Crumbley, Heitger & Smith, 2017).

Unlike traditional accounting, which focuses on recording and reporting financial data, forensic accounting is investigative and forward-looking. It is particularly useful in uncovering complex fraud schemes, embezzlement, corruption, money laundering, and financial statement manipulation. The increasing cases of white-collar crimes and corporate fraud, especially in developing economies like Nigeria, have further highlighted the importance of forensic accountants in detecting and preventing fraud, strengthening internal controls, and enhancing organizational transparency (Modugu & Anyaduba, 2013). With the advancement of digital technologies and the sophistication of fraud schemes, forensic accountants now leverage computer-assisted audit tools, data analytics, and cyber forensic techniques to detect anomalies that would otherwise go unnoticed using traditional auditing approaches.

On the other hand, financial fraud refers to the deliberate act of misrepresenting financial information to deceive stakeholders or gain unlawful financial benefits. It is a serious white-collar crime that typically involves manipulation or falsification of accounting records, misstatement of revenues or expenses, asset misappropriation, and intentional omissions or disclosures in financial statements (Albrecht et al., 2008). Financial fraud can be perpetrated by individuals within the organization, such as employees or top executives, or by external actors such as vendors or contractors in collusion with insiders. The main objective of financial fraud is to distort the true financial position of an organization, thereby misleading investors, regulators, lenders, and other stakeholders (Mbatuegwu, Osongbule, &Agim (2025).

The consequences of financial fraud are often severe, including financial losses, reputational damage, legal sanctions, and loss of stakeholder confidence. In many instances, organizations fail to detect fraud early due to weak internal controls or overreliance on traditional audits, which may not be equipped to uncover well-concealed fraudulent activities. This underscores the need for robust fraud detection mechanisms such as forensic accounting. As noted by Rezaee and Riley (2010), the integration of forensic accounting into organizational processes enhances the capability to detect fraud, mitigate risks, and support legal proceedings against perpetrators. In summary, while financial fraud threatens the integrity and stability of organizations, forensic accounting serves as a proactive and reactive tool for its detection, investigation, and resolution.

Empirical Review

Several empirical studies have affirmed the superiority and effectiveness of forensic accounting procedures over traditional auditing methods in the detection and prevention of financial fraud, particularly within corporate and public institutions. Notably, Okoye and Gbegi (2013) conducted a pioneering study that compared forensic audits to conventional audits, with a focus on public sector organizations in Nigeria. Their findings revealed that forensic audits significantly outperform traditional audits in identifying fraudulent activities and irregularities. The researchers argued that while traditional audits primarily focus on compliance and accuracy in financial reporting, forensic audits go beyond routine checks to critically analyze financial records, trace anomalies, and investigate suspicious transactions using specialized investigative and legal tools. Their study also found that forensic accounting instilled greater fear of detection among potential fraud perpetrators, thereby serving not only a corrective but also a deterrent role within organizations.

In a similar vein, Modugu and Anyaduba (2013) highlighted the growing relevance of digital forensic tools in contemporary fraud detection. Their research emphasized that as financial transactions increasingly migrate to digital platforms, the complexity and sophistication of fraudulent schemes have also escalated. Consequently, the adoption of digital forensic techniques, including data mining, electronic evidence retrieval, and cyber-audit tools, has become essential in uncovering hidden or encrypted transactions that are often invisible to conventional audit procedures. Their study concluded that digital forensic accounting does not only improve detection capacity but also enhances the efficiency and responsiveness of financial investigations, particularly in environments where cyber fraud is prevalent.

Furthermore, Chukwujioke, Onuoha, and Okoye (2015) explored the impact of forensic accounting on early fraud detection and the promotion of sound corporate governance practices. Their empirical investigation found that the integration of forensic techniques into routine financial oversight mechanisms enables early identification of red flags, manipulation schemes, and collusive behaviors that could escalate into significant financial loss if left unchecked. They posited that forensic accounting helps to bridge gaps left by internal audit systems by proactively identifying vulnerabilities in internal controls and recommending remedial actions. The study emphasized that early fraud detection made possible through forensic methods not only preserves organizational resources but also reinforces accountability, transparency, and stakeholder confidence, (Mbatuegwu, 2021).Together, these studies establish a strong empirical foundation supporting the application of forensic accounting in mitigating financial fraud and enhancing corporate governance. They underscore the need for organizations, especially in fraud-prone sectors such as manufacturing, to embrace forensic accounting as a strategic tool for fraud prevention and financial integrity.

Theoretical Framework

The theoretical foundation for this study is anchored on two widely recognized theories in accounting and financial crime literature: the Fraud Triangle Theory and the Agency Theory. These theories provide insight into the motivations behind fraudulent behavior and the mechanisms through which forensic accounting can mitigate fraud risks.

Fraud Triangle Theory

Developed by Donald R. Cressey (1973), the Fraud Triangle Theory remains one of the most influential frameworks for understanding why individuals commit fraud. According to the theory, three key elements pressure, opportunity, and rationalization must simultaneously exist for occupational fraud to occur.

i. Pressure refers to a perceived financial or personal burden that motivates an individual to commit fraud. This could stem from debt, family obligations, addiction, or performance expectations.
ii. Opportunity arises when there are weaknesses in internal control systems, lack of oversight, or inadequate audit mechanisms that enable fraudulent activities to go undetected.

iii. Rationalization involves the internal justification the fraudster uses to legitimize their unethical actions, such as believing they are underpaid or that the organization "owes" them.

The Fraud Triangle underscores the importance of strengthening internal control systems, ethical climate, and surveillance mechanisms to reduce the opportunity and rationalization for fraud. Forensic accounting directly responds to these elements by implementing investigative procedures that detect red flags early, analyze patterns of financial anomalies, and promote a culture of accountability. By doing so, it limits the avenues through which fraud can occur and deters potential offenders.

Agency Theory

The Agency Theory, proposed by Jensen and Meckling (1976), explores the conflict of interest between principals (owners or shareholders) and agents (managers or executives) who are tasked with managing resources on their behalf. In many organizations, agents may act in their own self-interest rather than in the best interest of the principals, especially when there is an information asymmetry a situation where the agent has more knowledge about the financial state of the firm than the principal.This divergence in interests can lead to moral hazards, such as asset misappropriation, earnings manipulation, and unauthorized expenditures. The theory assumes that unless properly monitored, agents may exploit their control over corporate resources for personal gain.

Forensic accounting plays a vital role in mitigating agency conflicts by enhancing financial transparency and ensuring that financial reports reflect the true state of the organization. Through detailed investigative procedures, forensic accountants can uncover discrepancies, expose fraudulent schemes, and provide reliable evidence for legal or disciplinary action. By holding agents accountable and ensuring that fraudulent behavior is detectable and punishable, forensic accounting aligns managerial behavior with the interests of shareholders.

In summary, both the Fraud Triangle Theory and Agency Theory provide a strong theoretical basis for understanding how and why fraud occurs in organizations, and how forensic accounting procedures can be strategically employed to reduce fraud risks, enhance governance, and promote financial integrity in the manufacturing sector.

3.0 Methodology

This study adopted a descriptive survey research design, which is suitable for studies aimed at collecting data to describe the characteristics, opinions, behaviors, or attitudes of a population. A descriptive design was appropriate because it allowed for the collection of firsthand data from respondents in their natural work settings without manipulation of variables. The choice of this design enabled the researcher to examine the relationship between forensic accounting procedures and financial fraud detection in Nigerian manufacturing companies using both quantitative and qualitative methods. It also facilitated the investigation of patterns, trends, and associations between forensic accounting tools and the effectiveness of fraud detection and prevention mechanisms.

The target population for this study comprised financial managers, internal auditors, and professional accountants working within selected manufacturing companies in Nigeria, specifically those located in Lagos and Ogun States. These two states were chosen because they host a high concentration of manufacturing firms, making them ideal for studying financial control and fraud detection practices. A stratified random sampling technique was employed to ensure adequate representation across different professional categories and organizational levels. The population was divided into three strata: financial managers, internal auditors, and accountants. From these strata, a total of 200 respondents were randomly selected. This approach minimized sampling bias and ensured that insights were drawn from diverse perspectives within the financial management ecosystem.
Primary data were collected through the administration of structured questionnaires designed to capture respondents' knowledge, perceptions, and experiences related to forensic accounting procedures and fraud detection. The questionnaire included both closed-ended and open-ended questions to enable quantitative measurement and qualitative insights.

Before the main data collection exercise, a pilot study was conducted to test the reliability and clarity of the questionnaire. The pilot study involved a small group of respondents (not included in the final sample), and the internal consistency of the questionnaire items was assessed using Cronbach's Alpha coefficient. The results showed an acceptable reliability threshold of greater than 0.70, confirming that the questionnaire was suitable for the larger study. Expert review from academic and professional auditors was also obtained to ensure content validity.

The study utilized both quantitative and qualitative data analysis techniques to achieve a comprehensive understanding of the research problem. Quantitative data derived from the structured sections of the questionnaire were analyzed using the Statistical Package for Social Sciences (SPSS). Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to summarize the data. To test the research hypotheses, inferential statistical tools including correlation analysis, regression analysis, Analysis of Variance (ANOVA), and chi-square tests were employed.

In addition to the statistical analysis, qualitative data obtained from open-ended responses were analyzed using thematic content analysis, facilitated by NVivo software. This approach enabled the identification of recurring themes, patterns, and insights related to the practical implementation of forensic accounting procedures in fraud detection. The combination of both methods ensured that the findings were robust, reliable, and grounded in empirical evidence from the field.

4.0 Data Presentation and Analysis

The quantitative analysis was conducted using data collected from 200 respondents comprising financial managers, internal auditors, and accountants from selected manufacturing firms in Lagos and Ogun States. The data were processed using SPSS, and various statistical tools were applied to evaluate the relationship between forensic accounting procedures and financial fraud detection.

Descriptive Statistics Table

Table 4.1:

Descriptive Statistics of Key Variables (n = 200)

Variable	Mean	Std. Deviation	Minimum	Maximum
Use of forensic accounting procedures	4.12	0.73	2.00	5.00
Investigative accounting effectiveness	4.08	0.79	2.00	5.00
Use of digital forensic tools	3.91	0.84	1.00	5.00
Frequency of fraud detection	4.20	0.67	2.00	5.00
Internal control efficiency	3.85	0.76	2.00	5.00
Organizational readiness for forensic adoption	3.45	0.88	1.00	5.00
Cost of forensic accounting implementation	3.98	0.81	2.00	5.00
Resistance to forensic auditing	3.30	1.02	1.00	5.00

Source: Authors compilation, 2026.

The descriptive statistics indicate that respondents generally agreed on the relevance and effectiveness of forensic accounting procedures, as reflected by mean scores exceeding 3.50 for most variables. The highest mean score (4.20) recorded for fraud detection frequency suggests a strong perception that forensic accounting enhances fraud detection. Additionally, the standard deviation values reveal moderate variability in respondents' opinions, although responses relating to resistance to forensic auditing exhibited relatively greater variation.

Descriptive statistics indicated a high level of agreement among respondents regarding the effectiveness of forensic accounting in fraud detection. Respondents rated investigative accounting, litigation support, and digital forensic tools as highly impactful. The regression analysis showed a positive and statistically significant relationship between forensic accounting procedures (independent variable) and fraud detection (dependent variable), with a p-value of < 0.05, suggesting that the use of forensic techniques significantly contributes to uncovering and preventing financial fraud.

Regression Analysis

To examine the effect of forensic accounting procedures on financial fraud detection, a linear regression analysis was conducted. The model tested whether forensic accounting practices (independent variable) significantly predict the effectiveness of fraud detection (dependent variable) in Nigerian manufacturing companies.

Table 4.2:
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.738	0.545	0.539	0.611

Source: Authors compilation, 2026.

The model summary shows that the R value of 0.738 indicates a strong positive correlation between forensic accounting procedures and fraud detection. The R Square value of 0.545 implies that approximately 54.5% of the variation in fraud detection effectiveness can be explained by the forensic accounting practices implemented in these firms.

Table 4.3:
ANOVA Summary

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	45.812	1	45.812	122.76	0.000
Residual	38.328	198	0.194		
Total	**84.140**	**199**			

Source: Authors compilation, 2026.

The ANOVA test indicates that the model is statistically significant with an F-value of 122.76 and a p-value (Sig.) of 0.000, which is less than the threshold of 0.05. This confirms that the relationship between forensic accounting procedures and fraud detection is significant.

Table 4.4:
Coefficients Table

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
(Constant)	0.842	0.185		4.554	0.000
Forensic Procedures (X)	0.765	0.069	0.738	11.079	0.000

Source: Authors compilation, 2026.

The regression coefficient (B = 0.765) indicates that a one-unit increase in the implementation of forensic accounting procedures leads to a 0.765 increase in fraud detection effectiveness, holding other factors constant. The t-value of 11.079 and significance value of 0.000 confirm that this effect is statistically significant. The regression analysis supports the rejection of the null hypothesis (H_0), affirming that forensic accounting procedures have a significant positive effect on financial fraud detection in manufacturing companies in Nigeria. These findings underscore

the importance of integrating forensic practices into financial oversight frameworks to strengthen corporate governance and fraud prevention systems. Additionally, the Analysis of Variance (ANOVA) revealed that there were significant differences in fraud detection effectiveness depending on the type of forensic accounting procedure employed. For instance, digital forensics and data analytics yielded higher fraud detection rates compared to traditional investigative techniques. This finding emphasizes the need for modern technological tools in the forensic accounting process, especially in detecting complex or concealed financial misconduct.

Qualitative Insights

In addition to the quantitative analysis, qualitative data were obtained through open-ended responses included in the survey questionnaire and analyzed using thematic analysis with NVivo software. This approach provided deeper insights into respondents' experiences and perceptions regarding the application of forensic accounting in detecting financial fraud within Nigerian manufacturing companies. The qualitative findings complemented the statistical results by highlighting practical fraud patterns and organizational challenges encountered by financial professionals.The thematic analysis identified several recurring forms of financial fraud across the sampled manufacturing firms. Respondents frequently reported practices such as duplicate expense claims, where employees repeatedly submitted the same receipts or travel expenses for reimbursement, the use of missing or falsified supporting documents to conceal unauthorized expenditures, and unauthorized payments to shell companies or fictitious vendors established to divert organizational funds through fraudulent procurement transactions.

A notable case reported by respondents involved collusion between a mid-level employee (Code: E124) and a senior manager (Code: MGR-789), who manipulated supplier invoices by inflating contract values in exchange for personal kickbacks. The fraudulent scheme remained undetected until forensic accountants applied Benford's Law to analyze invoice data, revealing abnormal first-digit patterns that triggered a detailed investigation. The subsequent forensic examination exposed the fraudulent transactions, demonstrating the effectiveness of forensic accounting techniques in uncovering sophisticated financial fraud schemes that conventional audit procedures may fail to detect.

Discussion

The findings of this study, drawn from both quantitative and qualitative evidence, strongly support the argument that forensic accounting procedures significantly enhance an organization’s capacity to detect and prevent financial fraud. Forensic tools ranging from investigative accounting to digital analytics contribute meaningfully to identifying fraudulent schemes, tracing financial irregularities, and facilitating legal prosecution. The positive correlation observed in the regression and ANOVA analyses aligns with the qualitative evidence that forensic accounting strengthens internal controls and uncovers cases of fraud that evade traditional auditing systems.Moreover, forensic procedures such as Benford’s Law, data mining, and pattern recognition are particularly effective in the context of manufacturing companies, where fraud often involves complex billing, procurement, and payroll systems. These tools not only improve fraud detection but also serve as a deterrent by increasing the likelihood of uncovering illicit activity.Despite these strengths, the research identified critical barriers that hinder the broader application of forensic accounting in the Nigerian manufacturing industry. Key among them is

the high cost of implementation, particularly the acquisition of forensic software, the training of personnel, and the integration of digital infrastructure. Additionally, the shortage of trained forensic accountants in many organizations limits the application of advanced investigative techniques. Another significant obstacle is resistance to change, especially among management and accounting teams who are accustomed to traditional processes. In some cases, this resistance stems from fear of being exposed or from organizational cultures that downplay accountability.

In conclusion, while forensic accounting presents a highly effective mechanism for fraud detection and financial governance, its successful implementation requires a strategic and holistic approach. Organizations must invest in human capital, embrace forensic technologies, and foster a culture of transparency. Without these, the full potential of forensic accounting will remain untapped in the battle against corporate financial fraud in Nigeria's manufacturing sector.

5.0 Summary, Conclusion and Recommendations

This study explored the impact of forensic accounting procedures on financial fraud detection in Nigeria's manufacturing sector. Based on empirical and theoretical analyses, it was found that forensic accounting plays a critical role in enhancing the accuracy of financial reporting, uncovering fraudulent practices, and reinforcing internal control mechanisms. The integration of investigative tools, litigation support services, and digital forensic technologies significantly improves the effectiveness of fraud detection and legal resolution processes. Specifically, statistical evidence from regression and ANOVA tests indicated a strong, positive relationship between the application of forensic procedures and the rate at which fraud is detected and prevented.

Furthermore, qualitative insights revealed common fraudulent schemes such as duplicate claims, missing receipts, and collusion between staff and management issues that were only uncovered through forensic techniques like Benford's Law and tratracing. Despite these benefits, the study also identified several organizational limitations that hinder the full-scale adoption of forensic accounting in the sector. These include high implementation costs, a shortage of skilled forensic professionals, resistance to change, and inadequate awareness of forensic accounting's value. Therefore, while forensic accounting is effective, its potential remains underutilized due to infrastructural, institutional, and cultural constraints, which was in support of Mbatuegwu, Akpan., & Tamunonimim, 2023) and against the work of Lawal, & Mbatuegwu, (2022).

In conclusion, forensic accounting emerges as a vital mechanism for improving financial governance, detecting fraud, and ensuring transparency in Nigeria's manufacturing industry. By bridging the gap between conventional auditing and investigative financial analysis, forensic accounting strengthens accountability systems and fosters a culture of ethical compliance. The findings of this research underscore the necessity for companies, regulatory bodies, and policymakers to incorporate forensic practices into their financial oversight structures. Without such proactive measures, organizations remain vulnerable to increasingly sophisticated fraud schemes that threaten their financial health and reputation. Therefore, adopting forensic accounting is not merely a reactive tool but a strategic necessity for ensuring financial integrity in a fraud-prone business environment.Based on the findings of this study, the following

recommendations are proposed to enhance the implementation and impact of forensic accounting in manufacturing companies:

i. Training and Capacity Building: Organizations should invest in continuous professional development through workshops, certifications, and seminars to build a pool of competent forensic accountants capable of handling complex fraud cases.
ii. Regulatory Enforcement: Government agencies and industry regulators should mandate forensic audits, especially in high-risk sectors like manufacturing, to strengthen financial reporting and fraud prevention systems.
iii. Technology Integration: Firms should adopt modern forensic tools such as data analytics, artificial intelligence, and machine learning to analyze large volumes of transactional data and identify anomalies indicative of fraud.
iv. Whistleblower Protection: Strong policies should be put in place to protect whistleblowers and encourage the reporting of fraudulent activities without fear of retaliation. Anonymous reporting channels and anti-retaliation laws must be enforced.
v. Internal Control Practices: Organizations should implement robust internal control measures, including routine and surprise audits, segregation of duties, staff rotation, automated receipt verification, and fraud detection systems to deter internal fraud.

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