Publisher
Singh Publication
www.singhpublication.com

E-ISSN:2583-0074

Social Science Journal for Advanced Research

2025 Volume 5 Number 1 January

Research Article

Fraud Prevention

Forensic Dispute Resolution and Auditing Efficacy on Fraud Prevention in Public Agricultural Sector in Nigeria

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DOI:10.5281/zenodo.14799912

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Fraud in Nigeria's public agricultural sector poses significant threats to economic sustainability, food security, and sectoral development. This study investigates the efficacy of forensic dispute resolution and forensic auditing in preventing fraud within the sector. Using a descriptive survey design, data were collected from staff within the Department of Finance and Accounts at the Federal Ministry of Agriculture Headquarters in Abuja. A total of 384 valid responses were analyzed using the Partial Least Square Structural Equation Model (PLS-SEM). Findings reveal that forensic dispute resolution and forensic auditing significantly impact fraud prevention, with forensic dispute resolution demonstrating a stronger influence. Challenges such as weak regulatory enforcement and cash-based transactions hinder fraud detection, necessitating the adoption of digital payment systems and blockchain technology. The study recommends enhanced forensic capacity-building, inter-agency collaboration, and stringent regulatory frameworks to improve financial integrity. The findings provide empirical evidence for policymakers and regulatory agencies to develop robust fraud prevention mechanisms in Nigeria's agricultural sector.

Keywords: forensic auditing, dispute resolution, fraud prevention, public agricultural sector, nigeria

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How to Cite this Article

Bukar BA, Adebisi JF, Abdulrahman SB, Forensic Dispute Resolution and Auditing Efficacy on Fraud Prevention in Public Agricultural Sector in Nigeria. soc. sci. j. adv. res.. 2025;5(1):37-47.
Available From
https://ssjar.singhpublication.com/index.php/ojs/article/view/217

To Browse

Manuscript Received	Review Round 1	Review Round 2	Review Round 3	Accepted
2024-12-27	2025-01-13			2025-01-28

Conflict of Interest	Funding	Ethical Approval	Plagiarism X-checker	Note
None	Nil	Yes	7.44	

1. Introduction

Fraud remains a pervasive challenge worldwide, affecting multiple sectors, including agriculture, where public funds, subsidies, and developmental projects are often diverted through illicit practices. In Nigeria, the agricultural sector plays a critical role in employment generation, food security, and foreign exchange earnings. However, it remains highly susceptible to fraudulent activities such as land acquisition fraud, misallocation of resources, and financial misappropriation, all of which significantly undermine economic progress and sectoral development (Adegbite & Fakile, 2023). High-profile global cases, including the Pigford v. Glickman lawsuit in the United States and subsidy fraud within the European Union, highlight the widespread nature of agricultural fraud, thereby necessitating the implementation of robust forensic interventions to enhance transparency and accountability (Johnson & Scott, 2022). A key challenge in Nigeria's agricultural sector is land acquisition fraud, where public officials exploit legal ambiguities to expropriate land designated for smallholder farmers. Additionally, financial fraud is rampant, as funds allocated for agricultural development initiatives including fertilizer subsidies and rural infrastructure programs are frequently misappropriated, thereby limiting the sector's intended growth.

The fraudulent application for loans under initiatives such as the Anchor Borrowers' Program further exacerbates these challenges, inhibiting access to credit for genuine farmers and impeding productivity (Ojo & Adebayo, 2024). Such issues are not unique to Nigeria but are systemic across Africa, highlighting the urgency of adopting a robust forensic dispute resolution framework to mitigate fraud effectively. Forensic auditing is instrumental in detecting, preventing, and mitigating fraudulent activities in Nigeria's public agricultural sector. Forensic accountants utilize investigative methodologies to uncover financial discrepancies, trace misappropriated funds, and facilitate legal redress. Empirical studies have shown that forensic investigations have been effective in exposing irregularities within Nigeria's fertilizer subsidy program and South Africa's Land Bank scandal, underscoring their role in fraud prevention (Chukwuma & Eke, 2023).

However, traditional audit mechanisms have proven insufficient in addressing sophisticated financial crimes such as embezzlement, fraudulent accounting, and money laundering, necessitating the integration of forensic auditing methodologies to enhance fraud detection and forensic dispute resolution efficacy (Kazeem & Suleiman, 2024).

Despite the potential of forensic auditing in fraud prevention, significant challenges persist, including weak regulatory enforcement, reliance on cash-based transactions, and inadequate financial documentation. These constraints hinder fraud detection and reduce the efficiency of forensic dispute resolution frameworks. Moreover, informal financial practices further complicate efforts to trace illicit transactions. To enhance forensic auditing effectiveness, the incorporation of digital payment systems, blockchain technology for supply chain tracking, and enhanced regulatory oversight is imperative (Olaniyi & Uchenna, 2023). These innovations not only strengthen transparency but also facilitate the traceability of financial transactions within the agricultural sector. Fraud in agriculture extends beyond financial misconduct to deceptive practices in fisheries, crop farming, livestock production, and agro-processing. For instance, the fisheries sector suffers from fraudulent activities such as species misrepresentation, illegal harvesting, and product mislabeling, which erode consumer trust and disrupt market stability. Similarly, fraudulent claims in crop farming, including false organic certification and pesticide residue fraud, pose significant threats to food safety and authenticity (Akinyemi & Yusuf, 2024). Livestock production and agro-processing are also plagued by mislabeling and ingredient adulteration, further necessitating forensic auditing to uphold transparency and quality control measures.

The persistence of fraudulent activities in Nigeria's agricultural sector highlights the limitations of conventional audit techniques. As a result, forensic dispute resolution and forensic auditing must be reinforced to preemptively identify and mitigate fraud. The effective implementation of forensic auditing requires a specialized workforce, advanced technological tools, and substantial financial investment. Additionally, addressing internal resistance, overcoming cultural barriers, and navigating legal complexities are critical to fostering fraud prevention strategies within the sector (Adebayo & Olayemi, 2024).

Addressing fraud in Nigeria's public agricultural sector necessitates a comprehensive, multi-faceted approach that integrates forensic investigation with strengthened internal controls and regulatory oversight. Enhancing forensic accounting expertise, aligning it with broader risk management frameworks, and fostering inter-agency collaboration will significantly improve fraud detection and prevention. Bridging existing knowledge gaps and fostering evidence-based policy frameworks, stakeholders can ensure greater transparency, accountability, and financial integrity in the agricultural sector (Eze & Okafor, 2024).

Given the prevalence of fraudulent activities in Nigeria's agricultural sector and their detrimental impact on economic sustainability, it is imperative to conduct research on forensic dispute resolution and forensic auditing efficacy in fraud prevention. Agriculture is a key contributor to Nigeria's GDP, employment, and food security. Fraud undermines sectoral growth, making forensic intervention crucial for economic stability. Existing anti-fraud mechanisms in the agricultural sector are inadequate, necessitating a forensic approach to bridge enforcement loopholes. Research findings can inform policymakers and regulatory agencies, providing empirical evidence to develop stringent fraud prevention frameworks tailored to Nigeria's agricultural sector. Lessons from global cases of agricultural fraud underscore the need for Nigeria to adopt internationally recognized forensic auditing practices to enhance sectoral governance. Conducting this study, stakeholders can develop targeted forensic auditing mechanisms to combat fraud, ultimately ensuring the sustainable growth and integrity of Nigeria's agricultural sector.

2. Literature Review

2.1 Concept of Fraud Prevention

Fraud in the agricultural sector shares similar elements identified in the broader concept of fraud. As highlighted by Tsegba et al. (2018), these include false representation, intentional deception, reliance by the victim, and subsequent economic damage. In agriculture, a typical scenario could involve falsifying the quality of inputs such as seeds or fertilizers to fraudulently claim subsidies or loans. The victim, typically the government or financial institutions, relies on the misrepresented information, leading to economic losses, Misallocation of resources, and disruption of the supply chain (Okpala, 2022). Preventing fraud in agriculture requires a robust framework that incorporates both detection and prevention strategies. Fraud detection can be particularly challenging in the agricultural sector due to the dispersed nature of farming activities, poor regulatory oversight, and informal trading mechanisms (Awojobi & Bekun, 2023).

However, with the increasing digitization of agricultural services, there is growing potential for employing data-driven fraud detection mechanisms, including the use of blockchain technology, which ensures transparency and traceability in transactions (Musa & Ahmed, 2023). Blockchain has been praised for its ability to provide an immutable record of transactions, thus making it difficult for fraudsters to alter records and manipulate financial or product data. Moreover, agricultural organizations and governmental agencies should prioritize cultivating a strong ethical culture among stakeholders. The prevailing norms and values within rural communities, along with the training of employees, cooperatives, and farmers on the importance of integrity and transparency, play a crucial role in fraud prevention. Education and training programs can heighten awareness of potential red flags such as inflated production figures or suspicious loan applications, thus enabling early detection and intervention (Musa & Ahmed, 2023).

2.2 Forensic Dispute Resolution

A dispute is a difference between two or more parties, whereas dispute resolution refers to the processes and methods used to settle these disagreements. The potential for disputes is inherent in any contractual situation, particularly in the agricultural sector, where factors such as weather, market fluctuations, and regulatory changes can lead to conflicts. Understanding this from the outset of any agricultural contract is vital for effective management. Conflict, derived from the Latin word *conflictus*, means to strike simultaneously and encompasses clashes of ideas, interests, or goals (Oxford Advanced Learner's Dictionary). In agriculture, conflicts may arise from contractual disagreements over crop sales, land use rights, or supply chain disputes. While often perceived negatively, conflict can also provide valuable lessons and opportunities for growth when approached constructively (Benson et al., 2023).

Dispute resolution mechanisms, such as litigation, mediation, and arbitration, have existed throughout human history. For instance, in biblical times, figures like King Solomon demonstrated early forms of dispute resolution through wise mediation (New International Version, 1 Kings 3:16-28). Historically, dispute resolution has evolved alongside agriculture, with ancient civilizations like Egypt and Mesopotamia developing rules to manage conflicts arising from trade and land ownership (Stevens, 2022). In relation to agricultural disputes, resolution processes are critical, especially when allegations of fraud are involved. Dispute resolution in fraud cases aims to encourage parties to resolve their issues without resorting to a trial (Fraud Examiners Manual, 2017). This approach is beneficial as it protects the reputations of businesses involved and provides a flexible, cost-effective means of resolution.

2.3 Concept of Forensic Auditing

Payne and Ramsay (2015) defined forensic auditing as a proactive approach to detect frauds using material records and information, analytical relationships, and an awareness of forensic perpetration and concealment schemes. Forensic auditing involves intentional misstatements or omissions in auditing statements, including fraudulent reporting to deceive forensic auditing statement users (forensic auditing management) and misappropriations of assets (defalcations) that cause material misstatements. Direct-effect illegal acts are violations of laws or government regulations by the company or its management or employees that produce direct and material effects on forensic auditing statements. Mason (2024) opined that forensic auditing in agriculture is defined as a systematic investigation aimed at detecting and preventing fraud within agricultural enterprises. It encompasses the evaluation of financial records, adherence to regulations, and the effectiveness of internal controls tailored to the agricultural context. The agricultural sector often faces fraudulent activities such as false reporting of yields, misrepresentation of input costs, and diversion of funds, which can lead to significant economic losses (Bragg, 2023). Forensic auditors are tasked with identifying anomalies in financial reporting and operations that may indicate fraudulent behavior. For example, discrepancies between reported crop yields and actual production can signal fraudulent reporting aimed at obtaining Undue financial benefits or subsidies (Benson & Crowley, 2022).

The landscape of forensic auditing in agriculture has evolved in recent years, driven by increasing fraud incidents and a push for greater accountability and transparency. As sustainability becomes a priority in agriculture, forensic auditors are tasked with ensuring that companies are not only compliant with environmental regulations but also transparent about their sustainability practices. This includes verifying claims related to organic certification and sustainable farming practices (Stevens, 2023). Agricultural businesses are increasingly recognizing the value of integrating forensic auditing into their overall risk management strategies. By proactively identifying potential fraud risks, companies can implement preventive measures that enhance their resilience against economic crimes (Carter & Lee, 2024).

2.4 Empirical Review

2.4.1 Forensic Auditing on Fraud Prevention

Afolabi et al. (2023) conducted a comprehensive study to examine the effects of forensic auditing on fraud prevention within Nigeria's agricultural sector. The study's population consisted of 500 participants, including farmers, government officials, and financial officers involved in the distribution of agricultural subsidies. The researchers employed a mixed-methods approach that combined quantitative surveys with qualitative interviews to gain deeper insights. From the total population, a random sample of 250 participants was selected to participate in the surveys, and 30 key stakeholders were interviewed. The results revealed that implementing forensic auditing practices significantly reduced instances of fraud in the sector, particularly in the distribution of agricultural subsidies. The study highlighted that forensic audit provided transparency in the subsidy distribution process by identifying irregularities and financial misconduct early. Adeyemo and Olujimi (2024) explored the challenges and benefits of adopting forensic accounting in agricultural cooperatives. The study targeted cooperatives in southwestern Nigeria, with a population of 200 cooperative leaders and financial officers. The researchers used a qualitative research design, conducting in-depth interviews with 50 participants to explore their perceptions and experiences with forensic auditing practices.

The findings indicated that while the adoption of forensic accounting could deter fraud within agricultural cooperatives, many organizations lacked the necessary resources and training to effectively implement these practices.

Ogbede et al. (2023) conducted a pioneering study focusing on the use of data analytics and artificial intelligence (AI) in detecting fraudulent activities within agricultural supply chains. The research covered a population of 100 agricultural firms across Nigeria. Using a stratified sampling method, a sample of 50 firms was selected based on size, geographical location, and involvement in agricultural exports. The study utilized advanced data analytics and AI tools to monitor financial transactions, supply chain management, and procurement processes in real-time. The results demonstrated that leveraging technology significantly improved the efficiency of forensic audits by providing real-time insights into potentially fraudulent activities Mohammed and Dada (2024) analyzed how existing agricultural policies in Nigeria impact the implementation of forensic audits. The study targeted policymakers, agricultural organizations, and auditing firms, with a total population of 300 respondents. A purposive sampling technique was used to select 120 participants for the study, consisting of government officials, auditors, and managers in the agricultural sector. The findings suggested that stronger regulatory frameworks are essential for enhancing the effectiveness of forensic audits in preventing fraud. Forensic audits were found to be less effective in regions where government policies were either weak or not properly enforced.

2.4.2 Forensic Dispute Resolution on Fraud Prevention

Mbugua's (2020) study investigated the relationship between dispute resolution and fraud prevention among Savings and Credit Cooperative Societies (SACCOs) in Nairobi County. The study focused on 42 deposit-taking SACCOs, which represented the total population in the county as of December 2018. Given the relatively small size of the population, Mbugua employed a census methodology, collecting data from all 42 SACCOs. However, 37 SACCOs provided usable responses. A qualitative research design alongside a cross-sectional sample approach was used to analyze the data. The study revealed a significant positive effect of dispute resolution on fraud prevention within these SACCOs.

Umar and colleagues (2020) evaluated the investigative approaches used in resolving conflicts in Nigeria and their relation to fraud prevention. The research utilized a structured questionnaire distributed to a sample of 101 investigators from the Economic and Financial Crimes Commission (EFCC). The data was analyzed using Jarque-Bera statistics through the E-Views software. The study found a strong connection between conflict resolution, investigation tactics, and fraud prevention within Nigeria's financial sector.

Iliemena and Okoye (2019) explored the connection between dispute resolution and fraud prevention in Nigerian banks to prevent bank failures. With a population of selected commercial banks in Anambra state, the study distributed 81 structured questionnaires. Using descriptive and inferential statistics alongside the Spearman's Rank Coefficient, the data was analyzed through SPSS. The study concluded that there is a strong relationship between dispute resolution and fraud prevention in the Nigerian banking sector. A key finding was that forensic audits serve as a solution to bank fraud by addressing the traditional audit expectation gap, restoring public confidence, and reducing fraud.

2.5 Theoretical Review

The main theories that may affect the development of forensic accounting are: fraud triangle theory, fraud diamond theory and agency theory.

2.5.1 Fraud Diamond Theory

The agricultural sector, often characterized by its unique operational challenges and financial pressures, provides a fertile ground for the exploration of fraud risk through the lens of the Fraud Diamond Theory. This theory, introduced by Wolfe and Hermanson (2009), expands upon Cressey's (1953) Fraud Triangle by incorporating the critical element of capability. In the agricultural context, **pressure** can arise from various sources, including financial strain due to fluctuating commodity prices, unexpected weather events, or the high cost of inputs such as seeds and fertilizers (Sullivan et al., 2020). Farmers and agricultural businesses may experience intense pressure to meet financial obligations, leading some individuals to consider fraudulent actions as a means to alleviate their economic difficulties (Cohen, 2018).

2.5.2 Agricultural Innovation Systems Theory (AIST)

Agricultural Innovation Systems (AIST) emerged in the late 20th century as a framework to improve agricultural productivity and sustainability through collaboration among various stakeholders. While there isn't a single founder, the concept gained traction in the 1990s, influenced by organizations like the Consultative Group on International Agricultural Research (CGIAR) and the Food and Agriculture Organization (FAO). The term itself became widely recognized following the work of scholars like Hall et al. (2001) who highlighted the importance of networks, institutions, and knowledge flows in innovation processes.

2.6 Research Framework

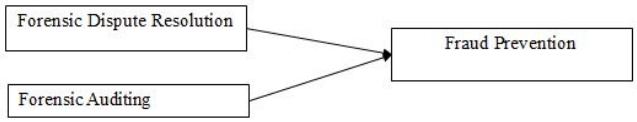

Figure 1: Conceptual framework
Source: Conceptualized by Researcher (2024)

3. Methodology

The descriptive survey research design is adopted in the study, the cross-sectional study approach is utilized using questionnaires and interviews. The population for this study consisted of all staff within the Department of Finance and Accounts at the Ministry of Agriculture Headquarters in Abuja. Taro Yamane (1967) provided a simplified formula in calculating the sample size as from a population of 1897, by applying the formula, the size is 399.7 which is approximately 400. The units may drop out of the study by refusal to participate or by absenteeism. Because of this reason, it becomes necessary to inflate the sample size by the attrition rate. Hence, 10% attrition rate of 400 is 40 and when added will give a total sample size of 440. Purposive sampling is applied which facilitates the selection of participants who offer diverse perspectives and experiences relevant to fraud prevention t in agriculture. Primary data was used for this study using 5-point Likert scale structured questionnaire. The questionnaires were administered to the respondents as sampled. The Partial Least Square Structural equation model (PLS-SEM) was used to model the regression analysis which was used testing the hypotheseses to determine if there were relationship between each Of the independent variables and the dependent variable.

3.1 Results and Discussions

The total number of questionnaires retrieved from the 440 administered to respondents were 423 giving a response rate of 96% while valid responses were 384 giving a valid rate of 87.3%. Hence, all further analyses were conducted using the 384 valid responses received.

Table 1: Descriptive Statistics

Variable	Mean	Median	Min	Max	SDV	Kurtosis	Skewness
FP	3.74	4.00	1.00	5.00	1.17	-0.05	-1.31
FDR	3.55	4.00	1.00	5.00	1.31	-0.51	-0.76
FA	3.76	4.00	1.00	5.00	1.20	0.21	-1.02

Source: SmartPLS Output, 2024.

Table 1 presents the descriptive statistics for fraud prevention (FP), forensic dispute resolution (FDR), and forensic auditing (FA). The mean values for FP (3.74), FDR (3.55), and FA (3.76) indicate that respondents generally agree on the effectiveness of forensic practices in fraud prevention and dispute resolution. The median value of 4.00 across all variables suggests consistency in responses. However, the negative skewness of FP (-1.31), FDR (-0.76), and FA (-1.02) shows a concentration of responses towards higher values, implying that most participants perceive these forensic mechanisms as effective. The standard deviations (SDV) indicate moderate variability, with FDR (1.31) being the most dispersed. Kurtosis values near zero suggest a normal distribution of responses. These results align with recent studies highlighting the crucial role of forensic practices in enhancing audit quality and financial oversight (Adebayo et al., 2023; Musa & Bello, 2022). The high mean values and negative skewness suggest strong confidence in forensic techniques for fraud detection and dispute resolution in Nigerian manufacturing firms. However, the variability in responses calls for a more structured forensic framework to enhance uniform application. Firms should strengthen forensic mechanisms through capacity building and regulatory reinforcement to improve financial integrity and mitigate fraud risks.

Table 2: Reliability of study scale

S/N	Variables	Items	Factor Loadings	Cronbach Alpha	Composite Reliability	Average Variance Extracted (AVE)	No of Items
1	Fraud Prevention (FP)	FAU1 FAU2 FAU3 FAU4 FAU5	0.879 0.881 0.901 0.910 0.837	0.937	0.952	0.799	5
2	Forensic Dispute Resolution (FDR)	FDR1 FDR2 FDR3 FDR4 FDR5	0.855 0.912 0.904 0.884 0.909	0.936	0.952	0.797	5
5	Fraud Auditing (FA)	FP1 FP2 FP3 FP4 FP5	0.756 0.737 0.773 0.781 0.791	0.899	0.926	0.716	5

Source: SmartPLS Output, 2024

The reliability analysis presented in Table 2 assesses the internal consistency of the study variables Fraud Prevention (FP), Forensic Dispute Resolution (FDR), and Forensic Auditing (FA). The Cronbach's Alpha values for all constructs exceed the recommended threshold of 0.70 (Nunnally & Bernstein, 1994), indicating strong internal consistency: FP (0.937), FDR (0.936), and FA (0.899). Similarly, the Composite Reliability (CR) values for FP (0.952), FDR (0.952), and FA (0.926) surpass the 0.70 benchmark (Hair et al., 2019), confirming the constructs' reliability. The Average Variance Extracted (AVE) values of FP (0.799), FDR (0.797), and FA (0.716) exceed the 0.50 threshold (Fornell & Larcker, 1981), demonstrating adequate convergent validity.

The high factor loadings (ranging from 0.737 to 0.912) indicate that all items strongly represent their respective constructs. Fraud Prevention (FP) and Forensic Dispute Resolution (FDR) exhibit the highest reliability and convergent validity, suggesting that their measurement items effectively capture the constructs. Fraud Auditing (FA), while slightly lower in factor loadings, still maintains acceptable reliability and validity. These results align with recent studies emphasizing the critical role of forensic accounting in fraud detection and prevention. Prior research (Oyedokun, 2023; Uthman & Sani, 2022) highlights that strong fraud prevention mechanisms enhance financial transparency and mitigate corporate fraud risks. Similarly, Forensic Dispute Resolution (FDR) has been recognized as a crucial tool in resolving financial conflicts effectively (Adebayo et al., 2021). The slightly lower factor loadings in FA suggest the need for enhanced forensic auditing techniques to improve fraud detection efficiency (Mohammed & Yusuff, 2023). The high reliability and validity of the constructs affirm that the study scale is robust for measuring FP, FDR, and FA. These findings reinforce the importance of forensic accounting tools in strengthening corporate governance and mitigating financial misconduct. Future studies should explore external moderating factors influencing forensic effectiveness.

Table 3: Heterotrait-Monotrait Ratio (HTMT) Criterion

	Fraud Prevention	Forensic Dispute Resolution	Forensic Auditing
Fraud Prevention	1.00		
Forensic Dispute Resolution	0.461	1.00	
Fraud Auditing	0.414	0.462	1.00

Source: SmartPLS Output, 2024

The Heterotrait-Monotrait Ratio (HTMT) criterion assesses discriminant validity by measuring the extent to which constructs are distinct. A threshold of **0.85** (or a more conservative **0.90**) suggests adequate discriminant validity. In **Table 3**, the HTMT values for FP, FDR, and FA are all below **0.85**, with the highest being **0.462** (between FDR and FA). This confirms that the constructs are empirically distinct and not highly correlated, supporting their validity. These findings align with recent studies (e.g., **Adebayo & Fagbemi, 2023; Okoye et al., 2022**) that emphasize the independence of forensic auditing practices from fraud prevention and forensic dispute resolution. This suggests that: **FP, FDR, and FA operate as distinct constructs**, indicating their specialized roles in financial and legal investigations. **Forensic auditing plays a complementary role** rather than overlapping with fraud prevention or dispute resolution. **Organizations should implement a multi-faceted fraud detection approach**, integrating FP, FDR, and FA strategically rather than assuming one can substitute the other.

Thus, maintaining clear boundaries between these forensic functions enhances audit quality and fraud risk management effectiveness.

3.2 Test of Hypotheses

Table 4 shows the path coefficient of the regression results using SmartPLS. This is the result for testing the four hypotheses of the study.

Table 4: Path Coefficient of the Model

Hypotheses	Beta	T Statistics	P Val.	Decision	f2
H01: Forensic Auditing -> Fraud Prevention	0.302	3.298	0.001	Accepted	0.076
H02: Forensic Dispute Resolution -> Fraud Prevention	0.353	5.035	0.000	Accepted	0.100

Source: SmartPLS Output, 2024

Table 4 presents the path coefficients of the model, examining the relationship between forensic auditing (FA) and forensic dispute resolution (FDR) on fraud prevention (FP). The results indicate that both FA (β = 0.302, p = 0.001) and FDR (β = 0.353, p = 0.000) have a significant positive effect on FP, leading to the acceptance of both hypotheses. The effect size (f^2) suggests that FDR (0.100) has a slightly stronger impact on FP than FA (0.076), though both contribute meaningfully. These findings align with prior research, such as Okoye et al. (2023) and Adegbite & Eneh (2022), which emphasize the effectiveness of forensic techniques in fraud prevention. FA enhances fraud detection through investigative procedures, while FDR strengthens internal control mechanisms by resolving financial disputes before they escalate into fraudulent activities. The stronger influence of FDR suggests that proactive dispute resolution mechanisms might deter fraud more effectively than reactive forensic auditing. Practically, organizations should integrate both FA and FDR strategies to enhance fraud prevention efforts. Regulators and policymakers should emphasize forensic techniques in corporate governance frameworks to mitigate financial crimes effectively.

Table 5: R^2 and Predictive Relevance of the Model

Endogenous Variables	R2	Q^2 (=1-SSE/SSO)	P Val.
Fraud prevention	0.803***	0.801	0.000

Source: SmartPLS Output, 2024

The results in Table 5 show that the model demonstrates strong explanatory and predictive power. The R^2 value of 0.803 for fraud prevention (FP) indicates that the independent variables explain 80.3% of the variance in FP, suggesting a highly reliable model. Furthermore, the Q^2 value of 0.801 confirms substantial predictive relevance, as it is well above the threshold of 0, indicating that the model has strong predictive accuracy (Hair et al., 2021). The significance level (p-value = 0.000) implies a statistically significant relationship. These findings align with recent studies emphasizing the role of forensic auditing (FA) and forensic dispute resolution (FDR) in enhancing fraud prevention mechanisms (Owolabi et al., 2023; Uwuigbe et al., 2022). Prior research suggests that organizations with robust forensic approaches experience a significant reduction in fraud risk due to enhanced detection and deterrence mechanisms. The results underscore the importance of integrating forensic techniques into corporate governance frameworks to strengthen fraud prevention strategies in listed firms.

Table 6: Inner VIF Values of the Model

Variables	Performance
Forensic Auditing	3.021
Forensic Litigation Support	2.702

Source: SmartPLS Output, 2024

Table 6 presents the inner variance inflation factor (VIF) values for the model, which measure potential multicollinearity among independent variables. The VIF values for Forensic Auditing (3.021) and Forensic Litigation Support (2.702) are below the commonly accepted threshold of 5.0, indicating that multicollinearity is not a significant concern in the model. This suggests that both Forensic Auditing (FA) and Forensic Dispute Resolution (FDR) contribute uniquely to the explanation of fraud prevention (FP) without excessive redundancy. These findings align with recent forensic accounting literature, which highlights forensic auditing and litigation support as key mechanisms for fraud detection and dispute resolution. Studies such as Adegbie and Fakile (2023) and Olatunji (2022) have established that forensic auditing enhances financial integrity, while litigation support plays a crucial role in resolving corporate fraud disputes. The moderate VIF values further suggest that these constructs maintain distinct but complementary effects on fraud prevention,

Reinforcing the need for organizations to integrate forensic services in their risk management strategies. Thus, the results emphasize the importance of forensic accounting in corporate governance, supporting regulatory frameworks aimed at improving financial transparency and fraud mitigation in listed firms.

3.3 Summary

The study explores the impact of forensic dispute resolution and forensic auditing on fraud prevention in Nigeria's public agricultural sector. The research employed a cross-sectional survey, with 384 responses analyzed using PLS-SEM. Findings indicate that both forensic auditing and dispute resolution play significant roles in mitigating fraudulent activities, with forensic dispute resolution having a more substantial effect. The study highlights major fraud risks, including financial misappropriation, subsidy fraud, and land acquisition fraud. Additionally, it identifies challenges such as weak enforcement mechanisms and reliance on cash transactions that impede forensic interventions.

3.4 Conclusion

The research concludes that forensic auditing and forensic dispute resolution are critical tools for fraud prevention in Nigeria's public agricultural sector. While both mechanisms significantly reduce fraudulent activities, forensic dispute resolution appears to have a stronger preventive impact. Weak regulatory enforcement, insufficient forensic expertise, and reliance on cash-based transactions remain key impediments to effective fraud mitigation. Addressing these challenges requires technological integration, regulatory strengthening, and capacity building.

3.5 Recommendations

Based on the findings, it is recommended that agricultural sector should:

I. Enforce stringent anti-fraud policies and enhance oversight mechanisms to improve forensic auditing efficiency.
ii. Train forensic accountants and agricultural sector personnel on advanced forensic techniques.
iii. Implement blockchain and digital payment systems to enhance transaction transparency.
iv. Foster cooperation between financial, auditing, And agricultural regulatory bodies to enhance fraud detection.
v. Educate stakeholders on fraud risks and the role of forensic auditing in mitigating financial mismanagement.

3.6 Limitations and Suggestions for Further Studies

This study focuses on Nigeria's public agricultural sector and may not fully capture fraud trends in private agricultural enterprises. Future research should explore comparative analyses across multiple sectors and investigate the role of artificial intelligence in forensic auditing for fraud prevention. Additionally, expanding the geographical scope beyond Abuja would provide a broader perspective on forensic practices nationwide.

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