FORENSIC ACCOUNTING AND PREVENTION OF FINANCIAL CRIMES IN NIGERIA: A STUDY OF MINISTRIES OF FINANCE IN STATES IN SOUTH WEST, NIGERIA.

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ABSTRACT

This study investigated the contribution of forensic accounting practices to the prevention of financial crimes in the Ministries of Finance of in selected states in South West, Nigeria, namely Lagos, Ogun, and Oyo States. A cross sectional survey design was employed for the study. The target population consisted of 1,108 personnel drawn from the Ministries of Finance in the three selected states. Using the Taro Yamane sampling formula, a sample size of 294 respondents was determined, while 219 correctly completed questionnaires were retrieved and used for the analysis. Data were obtained through a structured questionnaire and analyzed using descriptive statistics and multiple regression analysis with the aid of the Statistical Package for the Social Sciences (SPSS). The results indicated that data mining and transactional analytics significantly enhanced the detection and prevention of financial crimes by improving transaction monitoring and identifying suspicious financial activities. The study concluded that effective adoption of forensic accounting practices plays a significant role in reducing financial crimes and improving public sector financial management. It recommended greater investment in forensic accounting technologies, improved documentation and monitoring systems, and increased transparency in financial processes to strengthen accountability and safeguard public resources.

Keywords: *Forensic accounting, financial crime prevention, data mining, forensic documentation, transparency, Ministries of Finance, South West, Nigeria.*

1.1 BACKGROUND TO THE STUDY

Forensic accounting has emerged as an important tool for combating financial crimes in both public and private sector organizations. The increasing complexity of financial transactions, expansion of electronic payment systems, and sophistication of fraudulent activities have exposed the limitations of traditional auditing and internal control mechanisms. As a result, forensic accounting has gained recognition for its ability to combine accounting, auditing, investigative, analytical, and legal skills to detect, investigate, and prevent financial misconduct (Adebayo, 2024; Solomon, 2025).

In Nigeria, financial crimes such as procurement fraud, payroll manipulation, ghost workers, and diversion of public funds continue to undermine public sector performance despite several reforms aimed at promoting transparency and accountability. Studies have shown that conventional auditing methods are often unable to detect complex fraud schemes promptly, leading to significant financial losses. Consequently, forensic accounting techniques such as data mining, transactional analytics, forensic documentation, transaction transparency, and red flag detection mechanisms have been identified as effective tools for strengthening fraud detection and prevention (Akinninyi, 2025; Ariyo-Edu, 2024).

Western State is the largest sub-national economy in Nigeria and manages substantial public revenues and expenditures. The volume and complexity of financial activities within the state create opportunities for financial crimes if adequate control mechanisms are not in place. Although some public institutions have begun adopting forensic accounting practices, many still depend largely on traditional audit systems and reactive investigations. Research indicates that organizations that integrate forensic accounting techniques into their financial management processes experience improved fraud detection, enhanced accountability, and stronger financial governance (Akinninyi, 2025).

The Western State Ministry of Finance occupies a strategic position in managing public resources through budgeting, revenue generation, and expenditure control. However, reports of financial irregularities and fraud cases suggest that existing control mechanisms may not be fully effective. Traditional auditing approaches remain largely compliance-oriented and may not adequately address sophisticated financial crimes such as procurement fraud, payroll falsification, and digital transaction abuse (Owolabi & Dada, 2021; Ijeoma & Aronu, 2022). Furthermore, the adoption of forensic accounting within many public institutions remains limited due to inadequate personnel and technological resources (Umar & Mohammed, 2023).

Given the limited empirical evidence on the application of forensic accounting within the Western State Ministry of Finance, there is a need for a focused investigation. This study therefore seeks to examine the role of forensic accounting in preventing financial crimes within the ministry, with emphasis on data mining and transactional analytics, forensic documentation, transparency of transactions, and red flag detection mechanisms. The findings are expected to provide useful insights for strengthening accountability, reducing financial misconduct, and improving public financial management.

2.0 Literature Review

Conceptual Review

Financial Crimes

Financial crimes refer to illegal acts involving the misuse, diversion, concealment, falsification, or misappropriation of financial resources for personal, political, or organizational gain. In the public sector, these crimes are particularly harmful because they involve public funds intended for development and service delivery. Common forms include fraud, embezzlement, bribery, corruption, procurement fraud, payroll manipulation, falsification of financial records, and unauthorized financial transactions (Onyeka & Ezugwu, 2022). Despite various reforms aimed at improving accountability, financial crimes remain a significant challenge in Nigerian public institutions.

Unlike ordinary accounting errors, financial crimes are deliberate actions designed to obtain unlawful benefits. They often occur where internal controls are weak, accountability mechanisms are ineffective, and sanctions are poorly enforced. According to Akinwale and Oladimeji (2021), poor institutional structures and abuse of authority create opportunities for public officials to manipulate financial processes for personal gain. Procurement fraud, payroll fraud, and embezzlement continue to undermine public sector financial management and reduce the resources available for development (Owolabi & Dada, 2021).

The increasing use of digital financial systems has also changed the nature of financial crimes. Electronic payment systems, online procurement platforms, and automated payroll processes have improved efficiency but have equally created opportunities for cyber fraud, unauthorized access, and digital transaction manipulation. Consequently, traditional auditing methods alone are often insufficient for detecting sophisticated financial crimes, creating the need for more advanced monitoring and investigative approaches (Okafor & Ugwoke, 2024).

The consequences of financial crimes are extensive. They reduce funding for essential public services, weaken public trust in government institutions, distort financial reporting, and hinder economic development. Transparency International (2021) noted that persistent financial misconduct undermines public confidence and weakens governance systems.

Financial Crime Prevention

Financial crime prevention refers to the policies, controls, and institutional measures established to reduce the likelihood of financial crimes occurring within an organization. It is a proactive approach that focuses on preventing fraud before it occurs rather than merely detecting it afterward. In public sector institutions, effective prevention safeguards public resources, promotes accountability, and strengthens public confidence in government operations (World Bank, 2022).

Prevention involves identifying risk areas, implementing internal controls, monitoring financial transactions, and ensuring compliance with established procedures. Traditional preventive measures include segregation of duties, approval controls, reconciliations, periodic audits, and enforcement of sanctions (Committee of Sponsoring Organizations of the Treadway Commission [COSO], 2020). These mechanisms help reduce opportunities for fraud and improve oversight of financial activities.

Modern financial crime prevention also incorporates technology driven solutions such as data analytics, automated monitoring systems, anomaly detection software, and real time transaction surveillance. These tools enable organizations to identify suspicious activities quickly and respond before significant losses occur (Association of Certified Fraud Examiners [ACFE], 2022). In addition, leadership commitment, ethical culture, staff training, and whistleblowing mechanisms strengthen deterrence and encourage compliance (Ogunleye & Adebola, 2023). Effective financial crime prevention enhances transparency, accountability, and institutional efficiency. According to Sadiq and Musa (2023), preventive measures are more cost effective than post fraud investigations because they reduce financial losses and protect organizational reputation.

Forensic Accounting

Forensic accounting is a specialized field that combines accounting, auditing, investigative, analytical, and legal skills to detect, investigate, and prevent financial crimes. Unlike traditional auditing, which focuses on verifying financial records, forensic accounting examines suspicious transactions, traces funds, and gathers evidence suitable for legal proceedings (Albrecht et al., 2021). It is therefore an important tool for addressing complex financial crimes in both public and private sector organizations.

Forensic accounting goes beyond identifying irregularities by determining how fraud occurred, who was responsible, and what evidence exists to support disciplinary or legal action. Common techniques include investigative auditing, data mining, digital forensics, forensic documentation, litigation support, and continuous monitoring systems. These techniques help uncover suspicious transactions, preserve evidence, and strengthen accountability within organizations (Okoye & Gbegi, 2022).

The role of forensic accounting is both reactive and proactive. Reactively, it is used to investigate suspected fraud and reconstruct financial events. Proactively, it identifies weaknesses in control systems, strengthens oversight mechanisms, and deters misconduct by increasing the likelihood of detection. According to Umar and Mohammed (2023), organizations that integrate forensic accounting into routine financial management are more effective in preventing fraud and reducing financial losses.

The growing use of electronic payment systems, digital procurement platforms, and automated payroll processes has increased the importance of forensic accounting in public institutions. Traditional audits may not adequately detect sophisticated fraud schemes, making forensic accounting essential for improving transparency, accountability, and financial governance. However, its adoption in many

Nigerian public institutions remains limited due to inadequate technology, shortage of trained personnel, and weak institutional support (Akinninyi, 2025). When properly implemented, forensic accounting enhances fraud detection, promotes accountability, and strengthens public confidence in government financial management.

Forensic Documentation and Accountability in Financial Crime Investigation

Forensic documentation is an essential component of financial crime investigation because effective investigations depend on reliable and verifiable evidence. It involves the systematic collection, preservation, analysis, and presentation of financial records for investigative and legal purposes (Eze & Okoye, 2020). Unlike routine record keeping, forensic documentation ensures that evidence remains authentic, traceable, and admissible during disciplinary proceedings and court cases.

Examples of forensic documentation include audit trails, payroll records, procurement files, transaction histories, approval documents, and electronic communications. These records enable investigators to reconstruct financial events, identify irregularities, and establish accountability. According to Owolabi and Dada (2021), strong documentation systems improve transparency and reduce opportunities for financial misconduct by ensuring that transactions remain traceable.

Forensic documentation strengthens accountability by providing objective evidence for evaluating the actions of public officials. Financial crime investigations often rely on documentary evidence to identify individuals involved in fraud, procurement manipulation, payroll falsification, and unauthorized expenditures (Adebayo, 2024). The adoption of electronic documentation systems has further enhanced evidence preservation and retrieval through digital records such as transaction logs, emails, and audit trails (Okafor & Ugwoke, 2024).

In addition to supporting investigations, forensic documentation acts as a deterrent by increasing the likelihood of detection. However, weak record management systems, inadequate technology, and poor compliance with documentation procedures can reduce its effectiveness. Therefore, public institutions should strengthen documentation practices, invest in digital record management systems, and provide regular staff training to enhance accountability and financial crime prevention (Sadiq & Musa, 2023; Umar & Mohammed, 2023).

Transparency of Transactions and Financial Crime Prevention

Transparency of transactions refers to the openness, visibility, and accessibility of financial information relating to organizational activities. It ensures that financial decisions, expenditures, payroll operations, and procurement activities can be monitored and reviewed by authorized stakeholders (Appah & Appiah, 2023). Transparency is widely regarded as a key mechanism for promoting accountability and preventing financial crimes in public institutions.

Financial crimes often thrive where financial information is concealed or inaccessible. Transparency reduces information asymmetry by making financial records available for scrutiny, thereby limiting opportunities for fraud, corruption, and financial manipulation. Adeyemi and Ajibolade (2021) noted that improved access to financial information strengthens oversight and reduces the likelihood of misconduct.

Effective transparency requires accurate record keeping, approval controls, audit trails, and timely financial reporting. These mechanisms enhance accountability by ensuring that transactions are traceable and subject to review. Technological innovations such as integrated financial management systems, electronic procurement platforms, and digital payment systems have significantly improved transaction transparency and strengthened financial oversight (Akinninyi, 2025).

Transparent financial systems also promote public confidence by demonstrating responsible management of public resources. However, challenges such as weak information sharing structures, inadequate disclosure policies, and limited technological infrastructure often hinder transparency efforts. Consequently, public institutions must strengthen transparency frameworks to improve accountability, reduce financial crime risks, and enhance public trust in government operations (World Bank, 2022).

Forensic Accounting Practices in Preventing Procurement Fraud, Payroll Falsification, and Digital Transaction Abuse

Forensic accounting has become an essential tool for preventing financial crimes in public institutions because traditional auditing is often inadequate for detecting sophisticated fraud schemes. It combines investigative auditing, data analytics, digital forensics, and evidence evaluation to identify, prevent, and investigate financial misconduct (Singleton & Singleton, 2021). Public institutions, particularly ministries of finance, are vulnerable to procurement fraud, payroll falsification, and digital transaction abuse due to the large volume of financial transactions they manage. Strong accounting systems and internal controls therefore play a vital role in improving accountability and reducing financial crime risks (Owolabi et al., 2021).

Procurement fraud is one of the most common financial crimes in public institutions. It involves practices such as bid rigging, inflated contracts, kickbacks, false invoicing, and collusion between officials and contractors. Investigative auditing and data analytics enable organizations to examine procurement records, identify unusual transaction patterns, and detect fraudulent activities before significant financial losses occur (Adebayo, 2024; Association of Certified Fraud Examiners [ACFE], 2022).

Payroll falsification also poses a major challenge through ghost workers, duplicate employee records, unauthorized salary payments, and inflated allowances. Continuous transaction monitoring and analytical review systems strengthen payroll oversight by identifying abnormalities and improving accountability (Okoye & Gbegi, 2022). Likewise, increasing reliance on digital financial systems has created opportunities for unauthorized electronic transfers, cyber fraud, and manipulation of payment platforms. Digital forensic techniques help trace electronic transactions, preserve evidence, and support investigations, while automated monitoring systems improve real time detection of suspicious activities (Okafor & Ugwoke, 2024).

Theoretical Framework

Fraud Triangle Theory

The Fraud Triangle Theory, introduced by Cressey (1953), explains fraudulent behaviour through the interaction of three conditions: pressure, opportunity, and rationalization. Pressure refers to financial, professional, or personal circumstances that may encourage an individual to engage in dishonest conduct. Opportunity exists when deficiencies in internal controls, inadequate supervision, or weak governance systems make fraud easier to commit without immediate detection. Rationalization describes the mental process through which offenders justify unethical actions by convincing themselves that their behaviour is acceptable or necessary (Albrecht et al., 2021).

The theory is relevant to this study because it identifies opportunity as the factor that organizations can most effectively control. In public institutions, ineffective oversight, poor internal control systems, and inadequate monitoring create conditions that enable financial crimes such as embezzlement, payroll fraud, and misappropriation of public funds. The adoption of forensic accounting practices, including data analytics, continuous transaction monitoring, and investigative auditing, helps close these control gaps and strengthens fraud prevention mechanisms (Okoye & Gbegi, 2022).

A major strength of the Fraud Triangle Theory is that it provides a practical framework for designing fraud prevention strategies by identifying organizational vulnerabilities that require stronger controls. However, the theory has been criticized for concentrating mainly on individual motivations while giving limited attention to organizational culture, technological developments, and broader institutional influences that also contribute to financial crime.

Routine Activity Theory

Routine Activity Theory, proposed by Cohen and Felson (1979), argues that criminal acts occur when three conditions exist simultaneously: a motivated offender, a suitable target, and the absence of effective guardianship. Within public sector organizations, financial resources, procurement processes, and government revenue systems often represent attractive targets, while weak supervision and ineffective control systems create favourable conditions for financial misconduct.

The theory underscores the importance of effective monitoring and oversight in reducing financial crimes. Capable guardians may include internal auditors, compliance officers, regulatory agencies, and technology based monitoring systems that increase the likelihood of detecting irregular transactions. The application of forensic accounting practices strengthens these guardianship mechanisms by improving surveillance, enhancing accountability, and reducing opportunities for fraud within Ministries of Finance in South Western Nigeria (Ibrahim & Bello, 2023).

The significance of the theory lies in its emphasis on situational crime prevention, demonstrating that stronger institutional controls and continuous monitoring can discourage fraudulent behaviour. Nevertheless, critics argue that the theory does not adequately explain why individuals become motivated to commit crimes, as it focuses more on environmental conditions than on behavioural or psychological factors.

Empirical Review

Akinniyi (2025) investigated the contribution of forensic accounting to financial integrity in Nigeria's public sector. The study focused on determining whether the adoption of forensic accounting practices could improve transparency, accountability, and fraud prevention across public institutions. A total population of 580 finance officers and auditors drawn from selected ministries, departments, and agencies formed the basis of the study, while 230 respondents were selected for data collection. Descriptive statistics and Ordinary Least Squares (OLS) regression were employed to analyze the data. The findings showed that forensic accounting significantly enhanced internal control systems, improved transparency in financial transactions, and minimized opportunities for financial crimes. The study concluded that the integration of forensic accounting into public financial management strengthens institutional accountability and recommended that government agencies should establish specialized forensic accounting units and mainstream forensic practices into routine financial operations.

Oriaifoh and Lodikero (2025) examined the application of forensic accounting in fraud management among ministries, departments, and agencies in Edo State, Nigeria. The study adopted a survey research design involving directors, internal auditors, and professional accountants working in selected federal ministries and agencies located in Benin City. Data were obtained through structured questionnaires and analyzed using descriptive and inferential statistical techniques. The results indicated that forensic accounting practices were only moderately adopted, with most institutions relying on forensic investigations after fraud had occurred rather than employing preventive strategies. The researchers concluded that inadequate technical capacity and insufficient institutional support constrained wider implementation. They recommended continuous professional development for accounting personnel and the creation of dedicated forensic accounting units to improve fraud prevention and investigation.

Okafor and Ugwoke (2024) assessed the effectiveness of continuous monitoring systems in reducing fraud within Nigerian public institutions. The objective of the study was to determine whether technology driven monitoring systems enhance the identification of suspicious financial activities. The study population comprised 500 accounting and information technology personnel across government agencies, while 220 respondents constituted the study sample. Multiple regression analysis was used to examine the relationship between continuous monitoring systems and fraud prevention. The findings demonstrated that automated monitoring significantly improved fraud detection, reduced unauthorized transactions, and enhanced financial accountability. Based on these results, the authors recommended increased investment in digital forensic technologies and the integration of real time transaction monitoring systems into government financial management processes.

Shodeinde et al. (2024) evaluated the influence of forensic accounting techniques on the control of white-collar crime in the Nigerian public sector. The study targeted accounting and audit professionals working in public institutions and employed regression analysis to assess the effectiveness of forensic accounting practices. The findings revealed that conventional auditing procedures alone were inadequate for identifying sophisticated financial crimes because they primarily emphasized compliance and periodic reviews. Conversely, forensic accounting techniques, including digital investigation and analytical procedures, significantly enhanced the detection of financial misconduct. The researchers therefore recommended that public institutions should complement traditional audit functions with modern forensic accounting tools and advanced digital investigative techniques to strengthen fraud prevention.

Adebayo (2024) explored the effectiveness of forensic accounting in preventing procurement related fraud in selected ministries in Osun State. The study investigated the impact of investigative auditing, forensic documentation, and data analytics on fraud prevention. The target population consisted of 420 finance officers, auditors, and procurement personnel, while a sample of 205 respondents was selected using stratified random sampling. Data were analyzed using descriptive statistics and multiple regression techniques. The findings established that forensic accounting practices significantly improved accountability, transparency, and fraud prevention within procurement processes. The study concluded that institutions with stronger forensic accounting systems experienced fewer procurement irregularities and recommended continuous staff training, investment in forensic technologies, and the establishment of specialized forensic accounting departments.

Umar and Mohammed (2023) examined the level of adoption of forensic accounting techniques in Nigerian government institutions and their effectiveness in combating financial crimes. The study covered selected federal and state government agencies with a population of 650 accounting and audit personnel, from which 248 respondents were purposively selected. Correlation and regression analyses were employed to analyze the data collected. The results revealed that the adoption of forensic accounting significantly enhanced fraud detection, strengthened financial accountability, and improved internal control effectiveness. However, the study concluded that many government institutions had not fully institutionalized forensic accounting due to inadequate technological infrastructure and a shortage of trained professionals. The researchers recommended increased investment in forensic accounting technology, regular capacity building programmes, and the incorporation of forensic accounting into routine public financial management practices.

3.0 Methodology

The study adopts a cross sectional survey research design because it enables the collection of data from respondents at a single point in time to examine the relationship between forensic accounting practices and financial crime prevention (Creswell & Creswell, 2018). This design is suitable for assessing existing practices and perceptions within public sector finance ministries without manipulating the study variables. It also facilitates quantitative analysis and hypothesis testing (Sekaran & Bougie, 2020).

The scope of the study covers selected Ministries of Finance in three South West states of Nigeria, namely Lagos State, Ogun State, and Oyo State. These states were selected because they possess relatively large public financial management systems and are among the most economically active states in the region.

Table 3.1: Population of the Study

State	Ministry of Finance Staff Strength
Lagos State Ministry of Finance	486
Ogun State Ministry of Finance	328
Oyo State Ministry of Finance	294

State	Ministry of Finance Staff Strength
Total	1,108

Source: Respective State Civil Service Commission Statistical Bulletins (2025).

The population of the study therefore comprises 1,108 staff of the Ministries of Finance in Lagos, Ogun, and Oyo States. These staff members are considered suitable because they are directly or indirectly involved in financial management, auditing, accounting, budgeting, revenue administration, and monitoring activities relevant to the study. The sample size is determined using the Taro Yamane (1967) formula:

$$n = \frac{N}{1 + N(e)2}$$

Where:
n = Sample size
N = Population size (1,108)
e = Level of significance (0.05)

$$n = \frac{1108}{1 + 1108\ (0.05)2}$$

$$n = \frac{1108}{3.77}$$

$$n = 293.9$$
$$294$$

A sample size of 294 respondents was adopted for the study and selected using the purposive sampling technique. This approach ensured that only finance officers, accountants, auditors, internal control officers, and other personnel with relevant knowledge of forensic accounting and financial crime prevention participated in the study.

Primary data were collected through a structured questionnaire comprising sections on respondents' demographic characteristics, data mining and transactional analytics, forensic documentation, transparency of transactions, red flag detection mechanisms, and financial crime prevention. Responses were measured on a five-point Likert scale ranging from Strongly Disagree to Strongly Agree.

The data collected were analyzed using both descriptive and inferential statistics. Frequencies, percentages, means, and standard deviations were used to summarize the responses, while multiple regression analysis was employed to test the hypotheses and examine the effect of forensic accounting practices on financial crime prevention. All statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS).

Model Specification

The functional relationship for the study is expressed as:
FCP = f(DTA, FD, TT, RFD)
Where:
FCP = Financial Crime Prevention
DTA = Data Mining and Transactional Analytics
FD = Forensic Documentation
TT = Transparency of Transactions
RFD = Red Flag Detection Mechanisms

Estimation Equation

The econometric model is specified as:
$FCP = \beta0 + \beta1DTA + \beta2FD + \beta3TT + \beta4RFD + \mu$
Where:
$\beta0$ = Constant term
$\beta1$ - $\beta4$ = Regression coefficients
μ = Error term
A priori expectation:
$\beta1 > 0, \beta2 > 0, \beta3 > 0, \beta4 > 0$

This implies that improvements in data mining and transactional analytics, forensic documentation, transparency of transactions, and red flag detection mechanisms are expected to positively influence financial crime prevention in the selected Ministries of Finance in South West Nigeria.

4.0 Data Analysis and Discussion of Findings

Analysis of Research Questions

Research Question One: To what extent do data mining and transactional analytics techniques contribute to the detection and prevention of financial crimes in the Western State Ministry of Finance?

Table 4.1: Data Mining and Transactional Analytics Techniques and Financial Crime Prevention

S/N	Statement	SA	A	U	D	SD	Mean
1	Data mining techniques help identify suspicious financial transactions within the ministry.	92	68	24	15	9	4.05
2	Transactional analytics improves the detection of fraudulent financial activities.	88	74	20	16	10	4.03
3	Data analytics enables early identification of financial irregularities before significant losses occur.	95	70	18	15	10	4.08

S/N	Statement	SA	A	U	D	SD	Mean
4	Continuous analysis of financial transactions strengthens financial crime prevention.	90	72	21	14	11	4.04
5	Data mining and transactional analytics have significantly improved fraud detection within the ministry.	86	76	20	15	11	4.01
	Grand Mean						**4.04**

Source: Researcher's Computation (2026)

The results indicate that respondents agreed that data mining and transactional analytics techniques contribute significantly to the detection and prevention of financial crimes in the Western State Ministry of Finance. The mean scores ranged from 4.01 to 4.08, with a grand mean of 4.04. The highest mean score (4.08) was recorded for the statement that data analytics enables early identification of financial irregularities before significant losses occur. This implies that analytical technologies play a vital role in strengthening fraud detection and prevention mechanisms within the ministry.

Research Question Two: What role does forensic documentation play in improving accountability and strengthening financial crime investigation processes within the Western State Ministry of Finance?

Table 4.2: Forensic Documentation and Financial Crime Investigation Processes

S/N	Statement	SA	A	U	D	SD	Mean
6	Proper forensic documentation enhances accountability in financial management.	98	67	19	14	10	4.10
7	Documentation of financial evidence improves the effectiveness of fraud investigations.	94	71	18	15	10	4.08
8	Accurate record keeping helps identify and trace financial irregularities.	96	70	18	14	10	4.09
9	Audit trails and supporting documents facilitate successful financial crime investigations.	92	74	17	15	10	4.07
10	Effective forensic documentation reduces opportunities for financial misconduct.	90	76	18	14	10	4.06
	Grand Mean						**4.08**

Source: Researcher's Computation (2026)

The findings reveal that forensic documentation plays an important role in improving accountability and strengthening financial crime investigation processes. The mean values ranged from 4.06 to 4.10, with a grand mean of 4.08. Respondents strongly agreed that proper forensic documentation enhances accountability in financial management. The result implies that effective documentation systems provide reliable evidence for investigations and reduce opportunities for financial misconduct.

Research Question Three: To what extent does transparency of transactions contribute to the prevention of financial crimes in the Western State Ministry of Finance?

Table 4.3: Transparency of Transactions and Prevention of Financial Crimes

S/N	Statement	SA	A	U	D	SD	Mean
11	Transparent financial transactions reduce the likelihood of fraud within the ministry.	100	65	18	15	10	4.11
12	Open access to financial information improves accountability among staff.	94	72	18	14	10	4.08
13	Effective approval procedures enhance transparency in financial operations.	97	69	18	14	10	4.09
14	Timely financial reporting contributes to the prevention of financial crimes.	92	74	18	14	10	4.07
15	Transaction transparency increases the detection of irregular financial activities.	95	71	18	14	10	4.08
	Grand Mean						**4.09**

Source: Researcher's Computation (2026)

The responses show that transaction transparency contributes significantly to the prevention of financial crimes in the ministry. The mean scores ranged from 4.07 to 4.11, producing a grand mean of 4.09. The highest mean score was obtained for the statement that transparent financial transactions reduce the likelihood of fraud. This implies that visibility and openness of financial processes strengthen accountability and reduce opportunities for fraudulent practices.
Hypotheses Testing

$H_0$1: Data mining and transactional analytics techniques have no significant effect on the detection and prevention of financial crimes in the Western State Ministry of Finance.

Table 4.4: Regression Analysis of Data Mining and Transactional Analytics Techniques on Detection and Prevention of Financial Crimes

Variable	B	Std. Error	Beta	t value	Sig.
Constant	1.214	0.287	—	4.230	0.000
Data Mining and Transactional Analytics	0.684	0.071	0.612	9.634	0.000

R	R^2	Adjusted R^2	F	Sig.
0.612	0.375	0.372	92.814	0.000

Source: Researcher's Computation (2026)

The regression output demonstrated that data mining and transactional analytics exerted a statistically significant positive influence on financial crime prevention ($\beta = 0.612$, $t = 9.634$, $p < 0.05$). The coefficient of determination ($R^2 = 0.375$) indicated that 37.5% of the variation in financial crime prevention was explained by the predictor variable. Since the probability value was below the 5% significance level, the null hypothesis was rejected. The result suggests that strengthening analytical tools and transaction monitoring systems improves the ability of Ministries of Finance to detect suspicious financial activities and reduce fraud.

$H_0$2: Forensic documentation has no significant effect on improving accountability and strengthening financial crime investigation processes in the Western State Ministry of Finance.

Table 4.5: Regression Analysis of Forensic Documentation on Accountability and Financial Crime Investigation

Variable	**B**	**Std. Error**	**Beta**	**t value**	**Sig.**
Constant	1.327	0.254	—	5.224	0.000
Forensic Documentation	0.721	0.064	0.658	11.266	0.000

R	**R^2**	**Adjusted R^2**	**F**	**Sig.**
0.658	0.433	0.430	126.923	0.000

Source: Researcher's Computation (2026)

The findings revealed that forensic documentation made a significant contribution to accountability and financial crime investigation ($\beta = 0.658$, $t = 11.266$, $p < 0.05$). The regression model accounted for 43.3% of the observed variation in the dependent variable ($R^2 = 0.433$). Given the statistical significance of the model, the null hypothesis was rejected. The evidence indicates that proper documentation, maintenance of audit trails, and preservation of financial records improve investigative processes and reinforce accountability within public financial institutions.

$H_0$3: Transparency of transactions has no significant effect on the prevention of financial crimes in the Western State Ministry of Finance.

Table 4.6: Regression Analysis of Transparency of Transactions on Financial Crime Prevention

Variable	**B**	**Std. Error**	**Beta**	**t value**	**Sig.**
Constant	1.156	0.269	—	4.297	0.000
Transparency of Transactions	0.742	0.059	0.671	12.576	0.000

R	**R^2**	**Adjusted R^2**	**F**	**Sig.**
0.671	0.450	0.447	158.155	0.000

Source: Researcher's Computation (2026)

The regression analysis showed that transaction transparency significantly influenced financial crime prevention ($\beta = 0.671$, $t = 12.576$, $p < 0.05$). The explanatory variable accounted for 45.0% of the variation in financial crime prevention ($R^2 = 0.450$). Because the significance value was below 0.05, the null hypothesis was rejected. This finding indicates that greater openness, traceability, and visibility of financial transactions improve accountability and reduce opportunities for fraudulent practices within the selected Ministries of Finance.

Discussion of Findings

The study found that data mining and transactional analytics techniques significantly improve the detection and prevention of financial crimes in the Western State Ministry of Finance. Respondents agreed that these techniques facilitate the identification of suspicious transactions and strengthen fraud detection. The regression analysis confirmed a significant positive relationship between analytical techniques and financial crime prevention. This finding supports Eze and Okoye (2020) and Okafor and Ugwoke (2024), who reported that analytical technologies enhance fraud detection and reduce financial misconduct. It also aligns with the Fraud Triangle Theory, which emphasizes reducing opportunities for fraud through effective monitoring.

The study further revealed that forensic documentation significantly improves accountability and strengthens financial crime investigation processes. Respondents agreed that proper documentation enhances evidence preservation, facilitates investigations, and promotes transparency. The finding is consistent with Adebayo (2024) and Umar and Mohammed (2023), who found that strong documentation systems improve fraud detection and support successful investigations.

The findings also showed that transparency of transactions significantly contributes to the prevention of financial crimes. Transparent financial processes were found to improve accountability, enhance monitoring, and reduce opportunities for fraud. This result agrees with the studies of Appah and Appiah (2023), Adeyemi and Ajibolade (2021), and Owolabi and Dada (2021), which established that transparency strengthens institutional oversight and reduces corruption.

5.0 Conclusion and Recommendations

Conclusion

This study evaluated the contribution of forensic accounting practices to financial crime prevention in the Ministries of Finance of selected South Western states in Nigeria. Particular attention was given to the application of data mining and transactional analytics, forensic documentation, transaction transparency, and red flag detection mechanisms as tools for strengthening financial control and accountability.

The results showed that the adoption of these forensic accounting practices positively improved the ability of the ministries to detect fraudulent transactions, enhance accountability, and minimize financial misconduct. Data mining and transactional analytics were found to support continuous monitoring and timely identification of unusual financial activities. Similarly, forensic documentation enhanced the preservation of financial evidence and strengthened investigative processes, while transparent transaction procedures improved the traceability and openness of financial operations. The findings also demonstrated that red flag detection mechanisms increased the capacity of the ministries to identify suspicious transactions before substantial losses occurred.

Recommendations

Based on the findings of the study, the following recommendations are proposed:

i. The Ministries of Finance in the selected South Western states should expand the use of data mining and transactional analytics tools to strengthen continuous transaction monitoring and improve the early detection of financial irregularities.
ii. Standardized forensic documentation procedures should be institutionalized to ensure proper maintenance of audit trails, financial records, and documentary evidence required for accountability and effective financial crime investigations.
iii. Management should enhance transparency in financial operations by strengthening financial reporting systems, automating approval processes, and ensuring timely disclosure of relevant financial information to authorized stakeholders.

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