



## FORENSIC AUDIT AND MITIGATION OF FINANCIAL CRIMES IN NIGERIA

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### Cite this article:

Appah E., Awuji C.E. (2023), Forensic Audit and Mitigation of Financial Crimes in Nigeria. African Journal of Accounting and Financial Research 3(1), 37-62. DOI: 10.52589/AJAFR-BGCL5EH4

### Manuscript History

Received: 4 Jan 2023

Accepted: 25 Jan 2023

Published: 22 Feb 2023

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**ABSTRACT:** *This study investigated the relationship between forensic audit and mitigation of financial crimes in Rivers and Bayelsa States of Nigeria. The study employed primary and secondary sources of data collection. The primary data were collected with a well-structured questionnaire with an average reliability of 0.87. The data collected were analyzed with statistical packages for social sciences using univariate, bivariate and multivariate analysis. The multivariate analysis revealed a positive and insignificant relationship between investigative review and safeguarding of assets misappropriation in MDAs in Nigeria; a positive and insignificant relationship between investigative review and control of occupational fraud in MDAs in Nigeria; a positive and insignificant relationship between investigative review and control of payroll fraud in MDAs in Nigeria; a positive and insignificant relationship between litigation support services and safeguarding of assets misappropriation in MDAs in Nigeria; a positive and insignificant relationship between litigation support services and control of occupational fraud in MDAs in Nigeria; and a positive and insignificant relationship between litigation support services and control of payroll fraud in MDAs in Nigeria. The study concluded that forensic audit mitigates financial fraud in Nigeria. On the basis of the conclusion, the following recommendations were made: Ministries, department and agencies should formulate others means of investigating financial crimes rather than proactive forensic audit because this study's finding indicated proactive forensic audit has negative and insignificant relationship with the measures of financial crimes; forensic audit practitioners in Nigeria should be aware that investigative review as technique of forensic audit has positive association with the measures of financial crimes. Hence, they should employ more investigative review when carrying out the forensic auditing process; forensic auditors should also apply litigation support services as a method of forensic audit in carrying out financial crimes investigation in government establishments because the results showed that litigation support has positive influence in mitigating financial crime amongst others.*

**KEYWORDS:** Forensic audit, Financial crimes, Payroll, Occupational fraud, Misappropriation.



## INTRODUCTION

The frightening rise in financial crimes around the world and Nigeria in particular has made forensic audits an important area of debate among scholars and stakeholders of different organizations. According to Mammen and Edakalathur (2019), the concept of forensic dates back to 1800s, it was not until the failure of large corporations, such as Enron, WorldCom, Tyco, Marconi, Swissair, Royal Arnold, Parmalat amongst others that some regulations like the Sarbanes Oxley and others globally was enacted, increasing the request for forensic audit. Noorhayati and Abdullahi (2015) stated that financial crime is seen as being the perplexing issue for organizations and that as a result, numerous examples of failure of big organizations have been observed worldwide in the recent past. The authors argued that the persistent failure to expose financial crimes and errors by external auditors has elevated much discussion and forensic audit has become a pronounced debate ground for research in an effort to mitigate financial crime that results from financial accounting. According to Udukeke and Ezenwafor (2019), financial crimes have infested the fabrics of several bureaucratic organizations in Nigeria. The authors further noted that financial crimes have now become a way of life among employees at all levels of bureaucratic entities in Nigeria. Inyada et al. (2019) noted that financial crimes have been in existence for several years and it increases on a daily basis due to the activities of man. Similarly, Ogutu and Ngahu (2016) suggested that financial crime has been on the rise in the 21st century and it is now a global concern. This is why Yar (2013) observed that financial crime incidents can be noted on a daily basis in the media. Udukeke and Ezenwafor (2019) noted that the occurrence of financial crimes in Nigeria has become common and persistent in public sector entities as shown by numerous reported and unreported cases of bribery, embezzlement, cash theft, inventory theft, cheque tampering, payroll scheme, swindle, forgery and kickbacks in recent times. According to Ogiriki and Appah (2018), financial crime is a subject that has received a lot of attention internationally. The authors noted that this interest has been heightened by several high profile cases of financial crimes involving several public sector entities.

Ukoma (2019) described financial crimes as the obtaining of financial gains due to deceit, through either a misrepresentation or concealment of material facts. Dada and Jimah (2020) stated that financial crime involves fraud or any other crime against property. Financial crimes include corruption, bribery, political donation, nepotism, kickbacks, artificial pricing and frauds of all kinds. According to Nipion (2015), financial crime usually takes place in different forms and can lead to several negative issues such as bankruptcy, inflation, unemployment, and can also affect the economic system of a country. Okoye et al. (2017) observed that financial crime is an intentional deception made for personal gain for unauthorized benefits in terms of money and property. They further noted that financial crimes entail the use of an individual's occupation for personal gains through deliberate misuse or application of employers' resources. According to Association of Certified Fraud Examiners (ACFE, 2014), financial crime is an action by an employee to use his or her office to enrich himself or herself through the misuse or misappropriation of government resources or assets. Therefore, forensic audits need to be adapted in the public service to mitigate the incidence of financial crimes (Onuorah & Appah, 2012).

Udukeke and Ezenwafor (2019) stated that forensic audits are utilized to identify and collect evidence to reveal how long a particular financial crime has been committed or how it was covered up by the perpetrators. Golden et al. (2015) noted that forensic audit techniques are



employed by the forensic auditors for the provision of evidence of financial crimes. They further stated that these techniques include proactive audit, litigation support services and investigative interview. Haron et al. (2014) stated that forensic audits are important for public sector organizations with the intention of reducing the number of financial crimes in ministries, departments and agencies. According to Othman et al. (2015), forensic auditors have the benefit to investigate beyond traditional auditing techniques. Eiya and Otalor (2013) reported that investigation is a tool for decreasing fraudulent activities where the forensic investigator is an expert witness that at all times uses his skill and competence to support his opinion on evidence. Albrecht et al. (2012) stated technology advances have derived proactive fraud detection techniques which analyze financial data and transactions to isolate fraud symptoms and other related anomalies. While et al. (2006) concluded that several techniques can be employed to combat fraud. Othman et al. (2015) noted that despite being effective, modern techniques are less often used by professionals as fraudulent practices reduction techniques. Appah and Inini (2021) further stated that financial crimes in ministries, departments and agencies (MDAs) could be reduced with the utilization of forensic auditing and techniques, such as continuous auditing, digital mining, computer assisted tools and techniques and financial ratio analysis. They further noted that these techniques could be applied to decrease the level of public sector financial crimes in Nigeria. Hence, the employment of forensic auditing techniques may be employed to reduce financial malfeasance in the Nigerian public sector.

Sorunke (2018) in Okoye et al. (2020) suggested that the absence of successful prosecution of high profile financial crimes is giving a serious cause of concern to the citizens of Nigeria. The onus therefore lies on how to effectively mitigate financial crimes in the public sector and successfully prosecute the perpetrators with the adoption of forensic auditing methods. However, it important to state that the prospect of forensic auditing has generated considerable research attention in Nigeria (Udukeke & Ezenwafor, 2019; Ogiriki & Appah, 2018; Akani & Ogbeide, 2017; Azih & Okoli, 2015; Adebisi & Gbegi, 2015; Akenbor & Ironkwe, 2014; Dada & Jimoh, 2020; Okoye et al., 2020; Appah & Inini, 2021). There has not been adequate emphasis on how forensic audit would mitigate financial crimes in Ministries, Departments and Agencies (MDAs) in Nigeria. Okoye and Gbegi's (2013) study of forensic accounting services and financial crimes revealed that forensic audit services mitigate financial crimes in public companies. Ofiafoh and Otalor (2013) maintained that forensic auditing is more all-encompassing because it centers on the materiality of the transactions. They further noted that for easy prosecution of the offenders, forensic auditing should be considered by the concerned anti-corruption bodies. The research of Oyedokun et al. (2018) revealed that the strength of the internal control jobs is attributed to the forensic accounting and auditing techniques included. Therefore, to the best of our knowledge, there are few studies on forensic auditing and financial crimes mitigation in Nigeria, particularly in the public sector. Hence, the focus of the research study is to investigate the relationship between forensic audit and financial crimes mitigation in ministries, departments and agencies (MDAs) in Nigeria. The specific objectives are to:

1. Determine the relationship between investigative review and safeguarding of assets misappropriation in MDAs in Nigeria;
2. Investigate the relationship between investigative review and control of occupational fraud in MDAs in Nigeria;



3. Investigate the relationship between investigative review and control of payroll fraud in MDAs in Nigeria;
4. Evaluate the relationship between litigation support services and safeguarding of assets misappropriation in MDAs in Nigeria;
5. Investigate the relationship between litigation support services and control of occupational fraud in MDAs in Nigeria; and to
6. Investigate the relationship between litigation support services and control of payroll fraud in MDAs in Nigeria.

The following research questions were analyzed in this study:

1. What is the relationship between investigative review and safeguarding of assets misappropriation in MDAs in Nigeria?
2. What is the relationship between investigative review and control of occupational fraud in MDAs in Nigeria?
3. What is the relationship between investigative review and control of payroll fraud in MDAs in Nigeria;
4. What is the relationship between litigation support services and safeguarding of assets misappropriation in MDAs in Nigeria?
5. What is the relationship between litigation support services and control of occupational fraud in MDAs in Nigeria?
6. What is the relationship between litigation support services and control of payroll fraud in MDAs in Nigeria.

The following research hypotheses were tested:

- H0<sub>1</sub>:** There is no significant relationship between investigative review and safeguarding of assets misappropriation in MDAs in Nigeria.
- H0<sub>2</sub>:** There is no significant relationship between investigative review and control of occupational fraud in MDAs in Nigeria.
- H0<sub>3</sub>:** There is no significant relationship between investigative review and control of payroll fraud in MDAs in Nigeria.
- H0<sub>4</sub>:** There is no significant relationship between litigation support services and safeguarding of assets misappropriation in MDAs in Nigeria.
- H0<sub>5</sub>:** There is no significant relationship between litigation support services and control of occupational fraud in MDAs in Nigeria.
- H0<sub>6</sub>:** There is no significant relationship between litigation support services and control of payroll fraud in MDAs in Nigeria.



## LITERATURE REVIEW

**Concept of Forensic Audit:** The Institute of Forensic Auditors (IFA) stated that forensic audit is an activity that involves the collection, verification, analysis and reporting of data with the purpose of collecting evidence to use in a court of law. Inyada et al. (2019) noted that forensic auditing is the systematic application of auditing skills to circumstances that have legal consequences. According to Dada et al. (2011), forensic audit involves the integration of accounting, investigative auditing, criminology and litigation services. Eyisi and Agbaeze (2014) stated that forensic auditors are experts in financial issues who are trained in detecting, investigating and preventing financial fraud and abuse which are to be presented to court of law for appropriate legal action. Knezevic (2015) asserts that forensic audit is the in-depth investigation, detection and prevention of fraudulent activities and the provision of litigation support services in a court of law. Similarly, Enofe et al. (2015) noted that forensic audit examines the detection, analysis and communication of evidence of fraudulent practices. Also Eze (2015) defined forensic audit as the use of accounting methods to track and collect forensic evidence for investigating and prosecuting fraudulent activities. It consists of procedures conducted in order to collect reliable and acceptable documentary evidence for anticipated disputes or litigation. Ukoma (2019) stated that forensic auditing involves the process of gathering, verifying, processing, analyzing and reporting of data so as to obtain documentary evidence to solve fraudulent practices. Eze (2015) stated that reactive forensic auditing investigates suspicion of fraudulent practices and once confirmed, the individual(s) involved are identified, and results of the investigation are supported with solid documentary evidence for criminal proceedings (Okoye et al., 2017). Proactive forensic auditing identifies mistakes and deviant financial transactions before they graduate into fraud. It revolves around a statutory audit, diagnostic tool and regulatory compliance.

**Investigative Review:** Aondoakaa and Chia (2018) describe investigative review as a careful search or systematic inquiry; to follow up or make research by patient inquiry, observation, and examination of facts. Investigation review activities obtain enough evidence and information to stop fraudulent activity, to obtain recovery of assets or restitution, and to provide information and support for the successful prosecution and conviction of the fraudster's (Azih & Okoli, 2015). Investigative review comprises three primary areas of activity: Internal Investigations, External Investigations and Law Enforcement Coordination. Investigative reviews include comprehensive and detailed case documentation, complete detailed descriptions of the activity, accurate and complete interview notes, extensive contact information, and high quality physical and digital evidence documentation and storage. Each case is investigated with the idea that it will be prosecuted (Akenbor & Ironkwe, 2014). The internal investigative review includes investigative review of employees, contractors, consultants, or vendors. External investigative review is conducted on customers (fraudulent claims), fraudsters (individual crooks), and organized groups (an association of criminals). Frequently fraud cases are neither exclusively internal nor external. In these situations, internal fraudsters and external fraudsters work in concert to commit fraud (Aondoakaa & Chia, 2018).

**Litigation Support Services:** Litigation is a term encompassing the use of court processes to resolve a dispute, in line with the rules in place in that jurisdiction. Litigation refers to the process of seeking a resolution of a dispute through a civil lawsuit in terms of preparing a case and finally, trial and enforcement (Harwood, 2016). Before litigation begins, various forms of preliminary investigations take place; also, various forms of alternative dispute resolution (ADR) are encouraged to be examined (Dada & Jimoh, 2020). Litigation support, therefore, is



all activities, usually within the law firm, that is designed to prepare a lawyer to try a case, including document review, interviewing witnesses, and case preparation. Litigation support involves using accounting and auditing techniques to quantify economic damages pursuant to existing or pending litigation. It provides assistance of an accounting nature in a matter involving existing or pending litigation (Bangura, 2017). It deals primarily with issues related to the quantification of economic damages. Indeed, it can be gathered that litigation support enhances effective intervention of the legal services to provide legislation, rules, and regulations to govern the proper conducts of the forensic accounting system and their techniques in carrying out these practices (Bassey, 2018). In preparing cases for litigation, claim forms and particulars of claims for both parties are drafted and served accordingly, this is usually followed by defense and counter claims and replies by the parties involved (Dada & Jimoh, 2020). Allocations and directions for future conducts of the case are done, presentation of documents, statements by witnesses, expert reports and meetings with experts all form part of the preparation of cases for litigations. This stage is now followed by the trial and enforcement stage as well as appeals by the parties involved.

**Concept of Financial Crimes:** Financial crimes involve frauds which are crimes against property. Eiya and Otalor (2013) argued that financial crimes involve the illegal conversion of the possession of assets belonging to another to one's use and advantage. Jung and Lee (2017) stated that financial crime is the practice of dishonesty for unlawful gain, usually comprising breach of trust, and some suppression of the correct nature of the actions, using the terms financial crime, white collar crime and fraud interchangeable. Financial crimes can be classified into fraud, corruption, theft and manipulation. Fraud is defined as an intentional misrepresentation of financial information by an individual or group of individuals. It entails the utilization of criminal deception to obtain an illegal advantage. The Economic and Financial Crime Commission (2004) defined fraud as the non-violent criminal and illicit activity committed with the objective of earning funds illegally either individually or in a group or organized manner thereby violating existing laws governing the economic and financial activities of the government. According to Okoye et al. (2017), fraud is an act of deceit or dishonest conduct involving acts of omission or making fraudulent statements with the aim of obtaining financial benefits. Fraud is a deliberate or intentional distortion of documents for the purpose of gaining an undue advantage. Ukoma (2019) noted that fraud consists of the acquisition of assets or economic benefit using deception, through either a misrepresentation or concealment.

**Safeguarding of Assets Misappropriation:** This is the theft or misuse of assets and accounts. Cash theft occurs in the form of fraudulent disbursements, cash skimming and cash larceny/stealing/theft (Eze, 2015). Fraudulent disbursement involves fraudulent billing schemes, cheque tampering, expense reimbursement, payroll schemes and register disbursement. Cash skimming is the act of diverting business receipts to an individual's personal use (Okoye et al., 2017). The Association of Certified Fraud Examiners (2002) states that asset misappropriation is the misuse of employee's property including theft and payroll fraud in an organization. This type of fraud accounted for 80% of all the cases reported in ACFE report (2012) and 85% in report (ACFE, 2014). The report stated that theft of cash; inventory and supplies are the common kinds of asset misappropriation (ACFE, 2012). It is observed that asset misappropriation involving theft, fraudulent disbursement are the most frequent scheme type represented in the frauds reports (ACFE, 2012) in Umah et al. (2015). Similarly, PriceWaterhouseCoopers (PWC)'s Global Economic Crime Survey suggests that



asset misappropriation accounted for 72% of the global crimes committed (PriceWaterhouseCoopers, 2014). Godknows and Charity (2021) classify assets misappropriation into three basic types, namely larceny, skimming and fraudulent disbursement.

**Occupational Fraud:** The Association of Certified Fraud Examiners (ACFE, 2014) stated that occupational fraud is when an individual uses his or her office to enrich himself or herself through the misuse or misappropriation of an organization's resources or assets. Eze (2015) noted that occupational fraud is the use of an individual's occupation or office through a deliberate misuse or misapplication of employers' resources. Okoye et al. (2017) stated that occupational fraud can be divided into asset misappropriation, management fraud and fraudulent statements. Shanikat et al. (2014) argued that occupational fraud comprises asset misappropriation (where an employee misapply an organization's resources), corruption (where an employee goes against the responsibility given to him by the employer for personal benefits), and financial statement fraud (where an employee intentionally causes a misstatement or omission of material information in the financial statements of an organization. Bassey's (2018) investigation disclosed that forensic investigation and litigation support affect the management of fraud in sampled microfinance institutions in Calabar, the Cross Rivers State. Madu-Chima et al. (2020) examination disclosed that litigation support services, forensic investigation, and expert consultancy improve the detection and prevention of fraud in the banking sector in Nigeria. Dada and Jimoh's (2020) investigation disclosed that litigation support service negatively and significantly affects financial crimes in the public sector of Nigeria. Madu-Chima et al. (2020) examination disclosed that litigation support services, forensic investigation, and expert consultancy improve the detection and prevention of fraud in the banking sector in Nigeria.

**Theoretical Framework:** This study is anchored on the fraud triangle. The theory was developed by Cassey (1919 – 1987). The theory explains that individuals who are trusted could violate the trust once they believe that having a financial problem that is non-shareable can be solved by violation of a position of financial trust. Hence, these individuals can use their position to change their perception and those of others on their actions. According to Eze (2015), this theory explains that every fraud has three things in common: pressure (motivation or incentives); knowledge or opportunity to commit crime; and rationalization.

- i. **Pressure (or incentive or motivation):** It is the financial force that pushes an individual towards committing fraud and abuse. According to Eze (2015), pressure is something that occurred in the personal life of the fraudster that establishes the need that motivates him to commit fraud. He further stated that pressure centers on financial strain, but it could be the symptoms. Adebisi and Gbegi (2015) stated the issues that may result from pressure to commit fraud include the relationship between employer and employee, physical isolation, personal failure of the individual, business reversals, gaining of status, among others. Okoye et al. (2015) opined that pressure relates to perceived need for assets and it is as a result of greed. It is important to note that the pressure needs only to be perceived in the mind of the perpetrator to motivate the commission of fraud. This perception needs not be visible to a third party observer. Pressures result from immediate needs not for cash or assets to support a lavish lifestyle, pay debts, or purchase necessities.



- ii. **Opportunity (Knowledge):** This is the chance and ability of an individual to commit fraud. Adebisi and Gbegi (2015) opined that an opportunity gives the person the chance to violate a position of trust he holds in the organization. Individuals commit fraud where they find the chance to commit the fraud and get away with it. The opportunity could be in the form of a weak internal control system and poor supervision in the entity. According to Eze (2015), opportunity not only means that chance exists, but either there is a lack of internal controls or the complexities related with the event are such that the fraudster examines the risk of being caught as very low. Okoye et al. (2015) noted that opportunity facilitates the ability to commit fraud. It is created by a weak internal control environment, poor management oversight, and/or the misuse of position. They further noted that failure to establish adequate procedures to detect fraudulent activity also increases the opportunity for fraud to occur.
- iii. **Rationalization:** This component of the fraud triangle theory explains the fraudsters' self-justification of his actions and silences his conscience (Adebisi & Gbegi, 2015). Eze (2015) stated that rationalization is reconciling unlawful or unethical behavior with the commonly accepted notions of decency and trust in his conscience or the one acceptable by members of the society. Okoye et al. (2015) stated that rationalization is an important element in most fraud. It occurs when an employee justifies why he or she committed or should commit a fraud. They further stated that rationalization is the reconciliation of an individual fraudulent behavior with the commonly accepted notions of decency and trust.

**Table 2.1 Empirical Review Summary**

S/N	Author/Years	Statement of Study	Methodology	Findings
1	Appah and Inini (2021)	Forensic investigation and fraud mitigation in the public sector of Bayelsa State, Nigeria.	The study employed quantitative research design, random sampling techniques. The study used primary and secondary data. The primary data consisted of a well-designed questionnaire after a reliability and validity test. The data obtained from the questionnaire were analyzed using descriptive and spearman	The result from the analysis revealed a negative and significant relationship between forensic investigation and occupational fraud in the Nigerian public sector. The study concluded that the application of forensic investigation would improve and minimize the level of occupational fraud in Nigeria.





			rank order coefficient.	
2	Adesina et al. (2020)	Forensic audit and fraud control of deposit money banks in Nigeria.	The study used primary and secondary sources of data collection. The primary data consisted of a well-designed questionnaire after content validity and reliability of data using CronbachAlpha coefficient of 79.5%. The data obtained from the questionnaire were analyzed using descriptive statistics, Analysis of Variance (ANOVA) and ordinary least squares method.	The result of their study suggested that forensic audit has significant effects on the control of financial fraud in deposit money banks in Nigeria; there is a significant relationship between skills of forensic auditors and knowledge on the timely mitigation of financial fraud in deposit money banks in Nigeria and the experience of forensic auditors has a significant influence on the control of financial fraud in deposit money banks in Nigeria.
3	Udukeek and Ezenwafor (2019)	Forensic accounting techniques and fraud detection in Nigeria.	The study employed descriptive survey design and the population consisted of two hundred and sixty with a sample of one hundred and sixty. Their study used questionnaires for the purpose of data collection and the data collected were analyzed with	The result suggested that the respondents lowly employed background investigation technique while investigative technique was moderately employed for fraud detection. Also their result revealed that the type and status of an entity in the Nigerian Stock Exchange does not significantly affect their ratings on the use of background investigation and investigative interview in detecting fraud. Therefore, their study concluded that



			mean and standard deviation for the purpose of homogeneity while t-test and analysis of variance (ANOVA) was employed for the purpose of hypotheses.	accounting professionals do not employ forensic investigation techniques for fraud investigation.
4	Nwadighoha (2017)	Fraud control mechanism on inventory fund in Nigeria	The study utilized a quantitative method of ex post facto research design. The study used secondary data from the published financial statements of sampled companies, The study analyzed the secondary data using descriptive and inferential statistics.	The result showed a direct and robust association between fraud control mechanisms on inventory, fund and other related assets of the sampled firms used in the study.
5	Inyada et al. (2019)	Forensic audit and bank fraud in Nigeria	Their study utilized survey research design, The study employed questionnaires as the primary source of data collection. The data obtained were analyzed with an ordinary least squares method of analysis.	The result revealed that forensic audit is an effective technique in bank fraud detection, prevention and reduction in Nigeria.



6	Ogotu and Ngalu (2016)	Forensic auditing skills in fraud mitigation in Kenya	Their study adopted the fraud triangle theory using descriptive research design. The study utilized questionnaires as the major source of primary data and the data obtained were analyzed with frequency distribution tables, bar graphs and pie charts.	Their study revealed that forensic accounting techniques are needed in the prevention and detection of fraud while their investigation further showed that forensic accountants should possess auditing, investigative, fraud and legal skills.
7	Ukuma (2019)	Forensic auditing and fraud reduction in Nigeria	The study employed survey research design with the use of questionnaires, interviews and secondary sources of data collection. The data obtained were analyzed with an ordinary least squares method.	The result obtained showed that forensic auditing was significantly related with internal control and cash management systems of banks but insignificantly related with loan processing and repayment systems.
8	Tapang and Ihendinuhu (2020)	Forensic accounting services and unethical practices in the banking sector in Nigeria.	The study used a quantitative research method of cross sectional research design.	The findings showed that forensic accounting services have a significant influence on cheque fraud, credit card fraud and mortgage fraud of sampled deposit money banks in Nigeria.
9	Henry and Ganiyu (2017)	Forensic accounting services and fraud reduction in the	The study employed the survey research design and	The results of the study suggested that forensic accounting services reduce banks.



		Nigerian banking sector.	questionnaire was used as the primary source of data and the data obtained were analyzed with correlation and regression models.	
10	Ogiriki and Appah (2018)	Forensic accounting and auditing techniques in public sector fraud in Nigeria.	The study employed ex post-facto research design with the assistance of questionnaires as the major source of primary data collection. The data obtained were analyzed using ordinary least squares.	The result suggested that forensic accounting and auditing techniques such as continuous audit, computer assisted audit tools, data mining, Bedford law and financial ratio analysis shows a significant and positive relationship with public sector fraud prevention and detection in Nigeria.
11	Abdulrahman (2019)	Forensic accounting and fraud prevention in the Nigerian public sector.	The study used content analysis from previous published studies on forensic accounting and fraud prevention using content analysis	The results from the content analysis revealed a significant positive relationship between forensic accounting techniques and fraud prevention in the Nigerian public sector. The study therefore opined that that more actions should be taken to ensure fraud prevention with the application of forensic accounting techniques.
12	Uniamikogbo et al. (2019)	Forensic audit on fraud detection and prevention of banks in Nigeria	The study adopted ex post facto research design. Secondary source of annual reports	The findings of their study suggested that forensic audit has negative and significant effects on the number of fraud cases in the Nigerian banking



			was used for data collection. The data were analyzed with charts, graphs, tables and regression.	sector. Also the study showed that forensic auditing has an insignificant effect on expected losses in the banking sector in Nigeria.
13	Bassey (2018)	Forensic accounting and management of fraud in microfinance institutions in Cross Rivers State, Nigeria.	The study employed a survey research design with the utilization of questionnaire, and other documentary evidence. The data collected was analyzed with the assistance of least squares technique.	The results revealed that forensic investigation and litigation support affects the management of fraud in sampled microfinance institutions in Calabar the Cross Rivers State. It was recommended that microfinance institutions need to utilize forensic accounting techniques in the investigation and monitoring of fraudulent practices.
14	Okoye et al. (2019)	forensic audit and financial performance of listed food and beverages firms in Nigeria	The study adopted a quantitative method of ex post facto research design, The data obtained from the punished financial statements were analyzed using correlation and multiple regression analysis.	The results indicated that forensic auditing positively and significantly affect return on assets, return on equity, and earning per share of food and beverage firms quoted on the Nigerian Stock Exchange
15	Eko et al (2020)	Forensic accounting techniques and fraud prevention and detection in the Nigerian banking sector.	The study employed a quantitative method of cross sectional survey research design, The study used	The results indicated that the use of forensic accounting techniques significantly improved detection/ prevention of banking in Nigeria. The study indicated the



			primary and secondary sources of data collection.	significance of ratio analysis and trend analysis techniques in fraud detection/prevention. The study also revealed the significance of commercial data mining software in fraud detection/prevention and the absence of capability and responsiveness of most staff of the mechanisms of data mining technology and trend analysis technique in detecting/preventing fraud in the sampled Nigerian banks.
16	Dada and Jimoh (2020)	Forensic accounting and financial crime in the public sector in Nigeria.	The study employed quantitative research methods and survey research design. The data collected from the questionnaire and interview conducted were analyzed using regression analysis.	The findings indicated that litigation support has a significant and negative effect on financial crimes in the Nigerian public sector. Consequently, the study recommended that forensic accounting professionals be engaged to conduct more litigation support services that will assist the law courts to reach a conclusion on problems which the court may not normally have the understanding to resolve, whereas additional forensic accountants be employed to decrease the rate of deceitful cases in the Nigerian public sector.

Source: Desk Research (2023)



## METHODOLOGY

This study investigated the relationship between forensic audit and mitigation of financial crimes in Nigeria. The study employed survey and correlational research designs. The population of this current study consists of Ministries, Departments and Agencies (MDAs) in Bayelsa and Rivers States of Nigeria. The respondents were randomly selected on the basis of the location of the respective Ministries, Departments and Agencies (MDAs) which consisted of five hundred and fifty (550) sample sizes of the respondents. The study used primary and secondary sources of data collection. The secondary sources of data included textbooks, journals, accounting professional pronouncements and magazines. The primary source of data was the questionnaire, which was carefully designed and administered to a sample of three hundred and seventy-five (375) respondents across the two states with the assistance of simple random sampling technique; therefore, responses of the respondents emanated from a five point Likert rating scale ranging from strongly disagree (1), disagree (2), neutral (3), agree (4) and strongly agree (5). The questionnaires were pre-tested using one hundred (100) respondents in Port Harcourt, Rivers State and a reliability test was done on the data collected using Cronbach Alpha model, to explore the internal consistency of the questionnaire (Appah, 2020). The result of the reliability test shows an average reliability of 0.87. The data obtained from respondents were presented and analyzed using statistical techniques such as univariate, bivariate and multivariate analysis. The multiple regression was guided by the model below:

$$\text{MITIGATION OF FINANCIAL CRIME} = f(\text{INR}, \text{LSS}) \quad (1)$$

Since mitigation of financial crime is represented by three proxies of *SAM*, *COF* and *CPF*, we recast Eqn. (1) by decomposing it as follows:

$$\text{SAM} = f(\text{INR}, \text{LSS}) \quad (2)$$

$$\text{FFS} = f(\text{INR}, \text{LSS}) \quad (3)$$

$$\text{MTF} = f(\text{INR}, \text{LSS}) \quad (4)$$

In their respective empirical forms (2), (3), (4) and are restated thus

$$\text{SAM} = \beta_0 + \beta_1 \text{INR} + \beta_3 \text{LSS} + U \quad (5)$$

$$\text{COF} = \beta_0 + \beta_1 \text{INR} + \beta_3 \text{LSS} + U \quad (6)$$

$$\text{CPF} = \beta_0 + \beta_1 \text{INR} + \beta_3 \text{LSS} + U \quad (7)$$



## RESULTS AND DISCUSSIONS

**Table 2: Descriptive Statistics Result**

	COF	LSS	INR	CPF	SAM
<b>Mean</b>	13.83	14.25	14.49	15.90	11.14
<b>Median</b>	14.00	14.00	14.00	15.00	12.00
<b>Maximum</b>	20.00	22.00	22.00	25.00	16.00
<b>Minimum</b>	10.00	8.00	8.00	6.00	6.00
<b>Std. Dev.</b>	2.69	2.91	3.19	4.71	2.34
<b>Skewness</b>	0.39	0.29	0.20	-0.32	-0.18
<b>Kurtosis</b>	2.24	2.40	2.39	2.80	2.27
<b>Jarque-Bera</b>	6.48	3.82	2.92	2.41	3.61
<b>Probability</b>	0.04	0.15	0.23	0.30	0.16
<b>Sum</b>	1826.00	1881.00	1913.00	2099.00	1470.00
<b>Sum Sq. Dev.</b>	950.33	1106.75	1330.99	2901.72	717.55
<b>Observations</b>	375	375	375	375	375

*Source: Author's Computation (using Eviews 10)*

From the Table above, Control of Occupational Fraud (COF) stood at 13.83 on the average and varies from a minimum of 10 to a maximum 20. Litigation support service (LSS) shows a mean of 14.25 and ranges from a minimum of 8 to a maximum of 22. Consequently, Investigative Review (INR) and Control of Payroll Fraud (MTF) have means of 14.49 and 15.9 and vary from a minimum of 8 and 6 to a maximum of 22 and 25 respectively. Safeguarding of assets/misappropriation (SAM) has a mean of 11.14 with minimum values of 6 and maximum of 16 respectively. The Jarque-Bera (JB) test statistic was employed to ascertain whether the selected measures follow the normal probability distribution and the result shows that all the measures are normally distributed apart from Control of Occupational Fraud whose probability value is 0.04 indicating that we reject the null hypothesis of not normal.

### Correlation Analysis

Correlation analysis was conducted to reveal the direction of association of the variables. Correlation is measured by (r) which ranges from -1.0 to 1.0. When r is negative, it means that the movement in one measure would cause a reduction in another. When r is zero, it means there is no relationship between the measures. The correlation analysis result is shown in Table 4.8 below



**Table 3: Correlation analysis on the relationship of SAM against INR and LSS**

		SAM	INR	LSS
SAM	Pearson Correlation	1	.093	.085
	Sig. (2-tailed)		.290	.335
	N	132	132	132
	Pearson Correlation	-.038	.620**	.561**
INR	Sig. (2-tailed)	.290		.000
	N	132	132	132
	Pearson Correlation	.085	.735**	1
LSS	Sig. (2-tailed)	.335	.000	
	N	375	375	375

*Source: SPSS Output of Field Survey (2022)*

Table 3 showed the result of Pearson Correlation Coefficient of relationship between safeguarding of assets misappropriation (SAM); investigative review (INR) and safeguarding of assets misappropriation (SAM); litigation support services (LSS) and safeguarding of assets misappropriation (SAM). The result also showed a correlation relationship coefficient of R-value =0.093 which indicated a weak positive correlation between investigative review (INR) and safeguarding of assets misappropriation (SAM). Finally, the result showed a correlation R-value of 0.085 which indicated weak positive correlation between litigation support services (LSS) and safeguarding of assets misappropriation (SAM).

**Table 4: Correlation analysis on the relationship of COF against INR and LSS**

		COF	INR	LSS
COF	Pearson Correlation	1	.039	.075
	Sig. (2-tailed)		.654	.390
	N	132	132	132
	Pearson Correlation	-.072	.620**	.561**
INR	Sig. (2-tailed)	.654		.000
	N	132	132	132
	Pearson Correlation	.075	.735**	1
LSS	Sig. (2-tailed)	.390	.000	
	N	132	132	132

*Source: SPSS Output of Field Survey (2022)*



Table 4 showed the result of Pearson Correlation Coefficient of relationship between Control of Occupational Fraud (COF); investigative review (INR) and Control of Occupational Fraud (COF); litigation support services (LSS) and Control of Occupational Fraud (COF). The result showed a correlation relationship coefficient of R-value =0.039 which indicated a weak positive correlation between investigative review (INR) and Control of Occupational Fraud (COF). Finally, result showed a correlation R-value of 0.075 which indicated weak positive correlation between litigation support services (LSS) and Control of Occupational Fraud (COF)

**Table 5: Correlation analysis on the relationship of CPF against, INR and LSS**

		MTF	INR	LSS
CPF	Pearson Correlation	1	.003	.095
	Sig. (2-tailed)		.972	.281
	N	132	132	132
	Pearson Correlation	-.005	.620**	.561**
INR	Sig. (2-tailed)	.972		.000
	N	132	132	132
	Pearson Correlation	.095	.735**	1
	LSS			
LSS	Sig. (2-tailed)	.281	.000	
	N	375	375	375

Source: SPSS Output of Field Survey (2022)

Table 5 showed the result of Pearson Correlation Coefficient of relationship between Control of Payroll fraud (CPF); investigative review (INR) and Control of Payroll fraud (CPF); litigation support services (LSS) and Control of Payroll fraud (CPF). The result also showed a correlation relationship coefficient of R-value =0.003 which indicated veryweak positive correlation between investigative review (INR) and Control of Payroll fraud (CPF). Finally, result showed a correlation R-value of 0.095 which indicated weak positive correlation between litigation support services (LSS) and Control of Payroll fraud (CPF).

## Multivariate Analysis

**Table 6: Model One Summary<sup>b</sup>**

Model	R	R Square	Adjusted Square	RStd. Error of the Estimate	Durbin-Watson
1	.884 <sup>a</sup>	.781	.776	.51427	1.430

a. Predictors: (Constant), LSS, INR

b. Dependent Variable: SAM

Source: SPSS Output of Field survey (2022)

The above model summary in Table 6 produced a correlation coefficient; R = 0.884 showed that there is a strong correlation between prompt dependent measure of safeguarding of assets misappropriation (SAM) and independent measures of investigative review (INR) and litigation support services (LSS). Our R<sup>2</sup> stood at 0.781 which implies that only 78.1% of



variations in the dependent variable (prompt safeguarding of assets misappropriation (SAM) is attributed to changes in the independent variables of investigative review (INR) and litigation support services (LSS). The Durbin-Watson  $d = 1.430$  which falls in between the two critical values of  $1.5 < d < 2.5$  and therefore we can assume that there is no first order linear auto-correlation in the data. Hence the model is of absolute good fit.

**Table 7: Model One ANOVA<sup>a</sup>**

Model		Sum Squares	ofdf	Mean Square	F	Sig.
1	Regression	26.023	3	8.674	1.126	.000 <sup>b</sup>
	Residual	985.697	128	7.701		
	Total	1011.720	131			

a. Dependent Variable: SAM

b. Predictors: (Constant), LSS, INR

Source: SPSS Output of Field survey (2022)

Table 7 gives a regression significant P-value of  $0.000 > F (1.126)$  and also less than 0.05 significant level implies that the overall model is statistically significant at 0.05 in proactive forensic audit (PFA); investigative review (INR) and litigation support services (LSS) and safeguarding of assets misappropriation (SAM) in mitigation of financial crime in Nigeria.

**Table 8: Model One Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	
	B	Std. Error	Beta			
	(Constant)	13.806	.906	15.232	.000	
	INR	.007	.007	.142	1.026	.307
	LSS	.004	.007	.074	.564	.574

a. Dependent Variable: SAM

Source: SPSS Output of Field survey (2022)

**Table 9: Model Two Summary<sup>b</sup>**

Model	R	R Square	Adjusted Square	RStd. Error of the Estimate	Durbin-Watson
1	.780 <sup>a</sup>	.733	.645	3.8402	1.973

a. Predictors: (Constant), LSS, PFA, INR

b. Dependent Variable: FFE

Source: SPSS Output of Field survey (2022)

The above model summary in Table 4.14 produced a correlation coefficient;  $R = 0.780$  showed that there is a strong correlation between prompt dependent measure of Control of Occupational Fraud (COF) and independent measures of investigative review (INR) and litigation support



services (LSS). Our  $R^2$  stood at 0.733 which implies that only 73.3% of variations in the dependent variable (Control of Occupational Fraud (COF)) is attributed to changes in the independent variables of investigative review (INR) and litigation support services (LSS). The Durbin-Watson  $d = 1.973$  falls in between the two critical values of  $1.5 < d < 2.5$  and therefore we can assume that there is no first order linear auto-correlation in the data. Hence the model is of absolute good fit.

**Table 10: Model Two ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.406	3	8.135	3.162	.000 <sup>b</sup>
	Residual	925.927	128	7.234		
	Total	950.333	131			

a. Dependent Variable: FFE

b. Predictors: (Constant), LSS, INR

Source: SPSS Output of Field survey (2021)

Table 10 gives a regression significant P-value of  $0.000 < F (3.162)$  and also less than 0.05 significant level implies that the overall model is statistically significant at 0.05 in Investigative Review (INR) and Litigation Support Services (LSS) and Control of Occupational Fraud (COF) in mitigation of financial crime in Nigeria.

**Table 11: Model Three Summary<sup>b</sup>**

Model	R	R Square	Adjusted Square	RStd. Error of the Estimate	of Durbin-Watson
1	.141 <sup>a</sup>	.020	-.003	2.65168	2.064

a. Predictors: (Constant), LSS, PFA, INR

b. Dependent Variable: MTF

Source: SPSS Output of Field survey (2021)

The above model summary in Table 11 produced a correlation coefficient;  $R = 0.141$  showed that there is a weak correlation between prompt dependent measure of Control of Payroll Fraud (CPF) and independent measures of investigative review (INR) and litigation support services (LSS). Our  $R^2$  stood at 0.020 which implies that only 2% of variations in the dependent variable Control of Payroll Fraud (CPF) is attributed to changes in the independent variables of investigative review (INR) and litigation support services (LSS). The Durbin-Watson  $d = 2.064$  falls in between the two critical values of  $1.5 < d < 2.5$  and therefore we can assume that there is no first order linear auto-correlation in the data. Hence the model is of absolute good fit.

**Table 12: Model Three ANOVA<sup>a</sup>**

Model	Sum of Squares	of Df	Mean Square	F	Sig.
1 Regression	18.223	3	6.074	.864	.462 <sup>b</sup>
Residual	900.020	128	7.031		
Total	918.242	131			

a. Dependent Variable: MTF

b. Predictors: (Constant), LSS, INR

Source: SPSS Output of Field survey (2021)

Table 12 gives a regression significant P-value of  $0.462 < F (0.864)$ ; and greater than 0.05 significant level implies that the overall model is not statistically significant at 0.05 in investigative review (INR) and litigation support services (LSS) and management fraud (MTF) in mitigation of financial crime in Nigeria.

**Table 13: Model Three Coefficient**

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
(Constant)	13.048	.866			15.065	.000
INR	-.006	.006	-.123		-.885	.378
LSS	.011	.007	.211		1.606	.111

a. Dependent Variable: MTF

Source: SPSS Output of Field survey (2022)

## DISCUSSION OF FINDINGS

**Forensic Audit and Control of Occupational Fraud:** The results showed that the relationship between forensic audit and fraudulent financial statement is negative and insignificant, thus the null hypothesis is accepted. These findings are in agreement with Okoye et al. (2020); their results suggested that there are no universally accepted forensic investigation techniques for the detection of public sector fraud and a positive and significant association between forensic accounting techniques and public sector fraud detection. The study's findings also agreed with Akenbor and Ironkwe (2014), Uniamikogbo et al. (2019), Dada and Jimoh (2020), Handoko et al. (2019). Their results revealed that proactive and reactive forensic auditing techniques have a negative and significant association with fraudulent practices in public institutions in Nigeria. However, these findings disagreed with Raymond et al. (2016), Kamau (2015), Oladejo and Oluwaseun (2015), Enofe et al. (2020) and Ebere and Manneh (2020). The findings from the various studies showed that forensic auditing assists in reducing financial crimes in the Nigerian public and banking sector. Finally, the findings congruence fraud triangle theory on pressure, the theory stated that it is the financial force that pushes an individual towards committing fraud and abuse. According to Eze (2015), pressure is something that occurred in the personal life of the fraudster that establishes the need that motivates him to commit fraud. He further stated that pressure centers on financial strain, but it could be the symptoms. Adebisi



and Gbegi (2015) also stated the issues that may result from pressure to commit fraud include the relationship between employer and employee, isolation physically, personal failure of the individual, business reversals, gaining of status, among others.

**Forensic Audit and Control of Payroll Fraud:** The results from the correlation and regression analysis showed that there is a positive and insignificant relationship between forensic audit and management fraud. This finding is in agreement with Dada and Jimoh (2020), Akenbor and Ironkwe (2014) and Uniamikogbo et al. (2019). The result disclosed that forensic auditing of litigation support services negatively and significantly affects management fraud in the public sector of Nigeria. However, this finding disagreed with Bassey (2018) whose result revealed that forensic investigation and litigation support affect the management of fraud in microfinance institutions. The findings further disagreed with Appah and Inini (2021), Tapang and Ihendinuhu (2020), Adesina et al. (2020), Ogutu and Ngalu (2016), and Abdulrahman (2019). Their findings from the different results analysis revealed a significant positive relationship between forensic auditing measures and fraud prevention in the Nigerian public sector.

## SUMMARY, CONCLUSION AND RECOMMENDATIONS

The study investigated the relationship between forensic audit and mitigation of financial issues in Nigeria. The study employed survey and correlational research designs. The study used three hundred and seventy-five (375) respondents from Ministries, Departments and Agencies (MDAs) in Bayelsa and Rivers State. Primary and secondary data were used while the responses from the questionnaire were analyzed using univariate, bivariate and multivariate analysis. The results from the multivariate analysis disclosed a positive and insignificant relationship between investigative review and safeguarding of assets misappropriation in MDAs in Nigeria; a positive and insignificant relationship between investigative review and control of occupational fraud in MDAs in Nigeria; a positive and insignificant relationship between investigative review and control of payroll fraud in MDAs in Nigeria; a positive and insignificant relationship between litigation support services and safeguarding of assets misappropriation in MDAs in Nigeria; a positive and insignificant relationship between litigation support services and control of occupational fraud in MDAs in Nigeria; and a positive and insignificant relationship between litigation support services and control of payroll fraud in MDAs in Nigeria. The study concluded that forensic audit mitigates financial fraud in Nigeria. On the basis of the conclusion, the following recommendations were made: Ministries, department and agencies should formulate others means of investigating financial crimes rather than proactive forensic audit because this study's finding indicated proactive forensic audit has negative and insignificant relationship with the measures of financial crimes; forensic audit practitioners in Nigeria should be aware that investigative review as technique of forensic audit has positive association with the measures of financial crimes. Hence, they should employ more of investigative review when carrying out forensic auditing process; forensic auditors should also apply litigation support services as method of forensic audit in carrying out financial crimes investigation in government establishment because the result show that litigation support has positive influence in mitigating financial crime; educational institutions in Nigeria, particularly the universities, should redesign their curriculum to replicate forensic audit concept at the undergraduate level in order to educate students about the important of forensic audit in mitigating against financial crimes; Ministries, departments and agencies (MDA) in the public



and private establishments should carry out forensic audit annually rather than waiting for government to carry out forensic audit when there is a financial crime issue. This would reduce the rate of financial crime in their MDAs and staff of the internal audit departments in ministries, departments and agencies (MDAs) should embark on regular training programs inclusive of forensic accounting and auditing techniques in other to enhance their skill in financial crime detection and prevention in carrying out their respective responsibilities as internal auditors and the government should review the strategic plans and strategies of public sector ministries, departments and agencies (MDAs) in order to capture forensic accounting and auditing in a digitalized business environment taking into consideration forensic software as support to enhance the investigation of financial crimes in Nigeria.

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