

## Forensic Accounting and Fraud Detection and Prevention in Nigerian Public Sector Using Federal Capital Territory, Abuja – Nigeria as Case Study

<sup>1</sup>Sulaiman T. H., <sup>2</sup>Ajiteru, **Abstract**

S. A. R. & <sup>3</sup>Abalaka, J. N.

<sup>1&3</sup>Crown University Intl  
Chartered Inc.

Faculty of Social Science, USA,

<sup>2</sup>Department of Political Science  
& International Relations

Achievers University,  
Owo, P.M.B.1030 Owo Ondo  
State Nigeria

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This paper examines the significant difference between forensic accounting and fraud identification in the Nigerian public sector. A research survey design was used for the purpose of this paper with a sample size of one hundred (100) respondents, which comprises auditors and accountants of four (4) ministries selected from FCT Abuja in Nigeria. The statistical tool used to test the hypotheses was Analysis of Variance (ANOVA). From the findings, it was found that the application of forensic accounting in Nigeria's public sector is effective in detecting fraud, there is a significant relationship between forensic accounting and litigation support services in Nigeria's courts, and lastly, the application of forensic accounting in the public sector is effective in preventing fraud. The paper recommended that public sector should build a continuous improvement in the internal control system and initiate effective and efficient internal checks; they should adopt a sound accounting system in principle and effective practices; forensic accountants should acquire proper training on forensic accounting skills and procedures; and officials in the public sector should embrace integrity, objectivity, fairness, and accountability as a moral duty to reduce the level of fraud.

Corresponding Author:

Sulaiman T. H.

### **Background to the Study**

The growing spate of fraud in different dimensions in the private and public sectors of the economy is on the increase in our contemporary times. Efiog (2017), states that financial fraud has been on the increase with a chain effect involving the parliamentarians, the top notch in the financial institutions, the civil and public servants, the teacher in the classroom setting, the law interpreter, and the one that enforces the law. This incidence has virtually brought many blue-chip organizations to their knees; a tidal wave that occurred in the first decade of the twenty-first century, leading to the liquidation of many corporate entities and monumental looting of the treasury in the public sector. The negative effect is incidental to the employees who were forced to join the army of the unemployed in the country where the successive governments have been unable to execute the programs already budgeted for in the public sector, which invariably exacerbate hardship with its attendant consequences on the entire system. In the private sector, frauds are multifarious as they involve many categories of employees, ranging from small amounts of cash misappropriation to huge amounts embezzled by those in the management cadre, and there is a high tendency to indulge in fraudulent financial reporting as a panacea to cover the white-collar act. It appears that the situation is becoming something that the nation is adjusting to, and this is certainly attracting both the already rich class and the poor to be involved in as many crimes and go unscathed. This seemingly unlimited freedom to steal and misappropriate financial reports has made many dubious officials in the public sector become rich overnight at the expense of the citizens and the development of the economy at large in (Sulaiman, 2021).

Fraud occurs everywhere in the world, especially with the present cutting-edge technology, where many employees who have the opportunity, by virtue of the platform they access, simply apply their knowledge and a colossal amount of money disappears. In the advanced economies of the world, greater use of forensic accounting increasingly reduces the incidence. It is a modern preventive and detection fraud technique that is an advancement over the traditional technique. Forensic accounting is a rapidly growing field of accounting that involves an investigative style of accounting employed to uncover the activities of individuals or corporate organizations and ascertain whether the individuals or organizations are involved in any illegal financial activities. As Professional forensic accountants may work for government or public accounting firms, it is pertinent that this new and enhanced technique be introduced in many private and public sector organizations in Nigeria.

### **Objectives of the study**

The main objective of this study is to examine the relationship between forensic Accounting and fraud detection and prevention in the Nigerian public sector. The specific objectives are to:

- i. Examine the effect of the use of forensic accounting service in detecting fraud and control in the Nigerian public sector.
- ii. Examine the relationship between forensic accounting and litigation support service in the Nigerian office of the accountant general of the federation.

- iii. Examine the effect of the use of forensic accounting service in preventing fraud in the Nigerian public sector.

### **Research Problem**

1. The following questions are postulated to address the research objectives:
2. To what extent does data mining technique detect/prevent fraudulent practices in MDAs.
3. To what degree does the use of ratio analysis technique (RAS) prevent/detect fraudulent schemes in MDAs.
4. To what magnitude does the use of trend analysis technique (TRD) detect/prevent fraudulent practices in MDAs.

### **The Research Questions**

The following are the research questions formulated to guide the study:

- i. What is the effect of the use of forensic accounting service in detecting fraud in the Nigerian public sector?
- ii. Does significant relationship exist between forensic accounting and litigation support service in the Nigerian office of the accountant general of the federation?
- i. What is the effect of forensic accounting service in preventing fraud in the Nigerian public sector?

### **Hypotheses of the Study**

Ho1: Use of forensic accounting service in public sector is not effective in detecting fraud Public Sector.

Ho2: There is no significant correlation between forensic accounting and legal action support service in Nigerian office of the accountant general of the federation.

Ho3: Use of forensic accounting service is not effective in preventing fraud in Public Sector.

### **Literature Review and Hypotheses Development**

The review of related literature in this work is sub-divided into three sections namely, the conceptual framework, theoretical and empirical framework.

#### **The Conceptual Framework**

A conceptual framework makes distinctions, organizes ideas and thoughts together in a manner that is understood by readers, and knits the descriptions being referred to. The conceptual framework in this research hinges on forensic accounting, forensic auditing, and forensic accounting and auditing for fraud detection, investigation, and prevention (Sulaiman, 2021).

#### **The Concept of Forensic Accounting**

Forensic accounting is the application of the laws of nature to the laws of man. This is normally carried out by forensic scientists as interpreters and examiners of facts and evidence in legal cases, who also give expert opinions concerning their findings in a court

of law. Fyनेface and Oseiweh (2017) affirm that forensic accounting is an essential investigative device for the detection of fraud. Mukoro, Yamusa, and Faboyede (2018) opined that forensic accounting helps introduce effective internal control and fraud prevention in an organization. He also described forensic accounting as a mixture of auditing and investigation skills. It is therefore the process of summarizing, interpreting, and presenting complicated financial issues clearly and factually in a court of law as an expert's view and witness. Al Samara, Al Afeef, and Al Ali (2017), define forensic accounting as the use of criminal methods and the incorporation of investigative accounting activities and law processes to investigate and detect financial crimes and other economic malpractices. Zysma (2016) views forensic accounting as a combination of auditing, accounting, and investigative skills. Forensic accounting is appropriate for legal matters, offering the highest rate of assurance (Blessing, 2015). Abdullahi and Mansor (2015) also described forensic accounting as the application of accounting and investigative skills to a level acceptable by the competent court to handle issues in contention in the context of both criminal and civil litigation. Fraud can be a theme in forensic accounting because it can include illegal property acquisition, concealment, or misrepresentation. Forensic accounting knowledge can assist the accountant in preparing valid evidence from the previous records and financial statements against the prosecutors in court (Nekede & Oko (2018)). Forensic accounting has, to a great extent, become a field of interest to accountants and auditors. A study carried out by Imoniana, Antunes, and Formigoni (2018) revealed that 42% of organizations have opined on the need for forensic accountants due to the rapid increase in fraudulent activities and related economic crimes. According to Popoola, Che-Ahmad, and Samsudin (2016), forensic accountants are trained to dig beyond the figures and deal with the realities of circumstances. He also noted that forensic accounting includes: investigating and examining financial evidence; developing computerized applications to support the analysis and presentation of financial evidence; communicating their findings in the form of reports, displays, and collected documents; and helping in legal proceedings, including attesting in court as an expert witness and setting up visual aids to support trial evidence.

Okafor and Agbiogwu (2016), itemize the classification of fraud based on the modes of perpetration, which include repression, outstripping, and embezzlement; tampering with reserves; fake payment; theft defalcation; insider abuses and forgeries; unauthorized lending; deceitful substitutions; lending money to ghost borrowers; kite flying and cross-firing; fictitious contracts; deceptive use of firm documents; and the rest. According to Othman, Aris, Mardziah, Zainan, and Amin (2015), there are two types of fraud committed in an organization. The first one is the use of business resources for personal gains, while the second one is the presentation of false financial statements. Research has revealed that the rate of losses in the public sector due to the fraudulent activities of political officeholders and employees is far higher than that recorded as a result of citizens negligence. About 60% of employees are disposed to engage in fraud, while 80% of political office holders might be inclined to use their power to commit fraud in a suitable condition (Ogundana, Okere, Ogunleye, & Oladapo, 2018). Obviously, the extensive spread of fraud in the Nigerian public sector has made conventional auditing and

investigation ineffective and inappropriate for detecting and preventing fraud. In 2009, researchers observed that level of fraud and other economic crimes has rapidly increased to about 70%, which has intimidated national development and turned conventional auditors weak, which necessitates the emergence of forensic accounting, an area that is meant to develop and improve techniques and skills for tackling these challenges with its accountants, who are experts in detecting and preventing fraud and presenting litigation support services in Nigerian courts (Umar, Samsudin, & Mohamed, 2017).

### **The role of Forensic Accounting**

The role of forensic accounting cannot be underestimated in detecting fraud in Nigeria's public sector. Owojori & Asaolu (2019) state that the role of a forensic accountant is different from that of a traditional auditor and is suitable for an organization. He also states that forensic accountants utilize accounting, auditing, and investigating skills while conducting investigations and are trained to look beyond disputes in a number of ways. They analyze, interpret, summarize, and present complex issues in an understandable and probably supported manner, which provides litigation support services in the court of law. Crumbley and Apostolou (2015) claimed that a professional forensic accountant has a single-minded focus on the detection and prevention of fraud. Forensic accounting often involves an exhaustive effort to penetrate concealment tactics (Krell, 2017). A forensic accountant specializes in fraud detection, documenting the exact evidence required for successful criminal prosecution, giving preliminary advice as an appraisal of the pleading and evidence available at the start of proceedings, reviewing and identifying key documents that should be available as evidence, preparing a detailed balance on quantum evidence that is understandable, reviewing expert accounting reports, and providing legal counsel on financial and accounting issues.

### **Description of the Nigerian Public Sector**

In the words of Adebisi and Gbegi (2015), public sectors are all organizations that are not established or operated by a private body and are run, financed, and managed by the government on behalf of the general public. The Nigerian Public Sector is being governed by the Federal, state, and Local Governments with the guidance of pronouncements and constitutions. Enofe, Ekpulu, and Ajala (2015) highlight the public sector regulatory framework, which includes the 1999 Constitution of the Federal Republic of Nigeria, the Finance Control and Management Act of 1958, the 1956 Audit Ordinance, the Financial Regulation, and the Revenue Allocation Laws. Looking at the endless number of government policies, it is sad to note that frauds of diverse forms are widespread in different public sectors. It is pertinent to note that most of the fraudulent acts and corruptions are being detected. However, the government must figure out how to avoid this stigma. Fraud prevention can save the government enormous investigation costs. Modugu and Anyaduba (2018) asserted that an environment that succeeds in preventing fraud can save huge investigation costs.

### **Forensic Auditing**

This is the application of accounting methods to track down and collect evidence for litigation and subsequent prosecution of criminal acts involving embezzlement, fraud, or

fraudulent activities. The Institute of Forensic Auditors, Belgium (2016), defines forensic auditing as an activity that consists of gathering, verifying, processing, analyzing, and reporting on data in order to obtain facts and evidence in a predefined context in the area of legal or financial disputes or irregularities and giving preventive advice. Eze (2015) defined forensic auditing as the application of accounting methods to the tracking and collection of forensic evidence for the investigation and prosecution of criminal acts such as embezzlement or fraud. Forensic accounting auditing can be conducted in order to prosecute a party for fraud, embezzlement, or other financial claims. This aligns with the definition by Greek (2021) that forensic auditing is an examination and evaluation of a firm's individual financial information for use as evidence in court. According to Chatteriji (2019), it is an examination and evaluation of a firm's or individual's financial information for use as evidence in court. The reports of forensic auditors are used to prepare legal defenses as well as prosecute a party for fraud, embezzlement, or other financial claims. Forensic auditing is the application of accounting, investigative, criminology, and litigation services skills for the purpose of identifying, analyzing, and communicating evidence of an underlying reporting event (Enofe, Omagbon,& Ehigiator, 2015).

### **The Fraud Triangle**

This is what the forensic accountants rely on to identify suspected fraud, the causes, and the weakness in the system that prompted the fraud. Based on the fraud triangle concept, the three factors that cumulate into the triangle are incentive, opportunity, and rationalization.

**Opportunity:** Employees use their position to commit fraud when internal controls are weak or where there is poor management oversight on internal control implementation. Most Employees who commit fraud do so because they have the opportunity to access assets and information that allows them to obscure their fraudulent deeds. It is true that employees need access to certain platforms to perform their jobs, but the same access can also provide the employee with the opportunity to commit fraud.

**Pressure/Incentive:** Pressure can make a staff commit fraud. Pressure does not only mean financial difficulty. Lister (2017) states that there are three types of motivation or pressure: Personal pressure to pay for lifestyle, employment pressure from continuous compensation structures or management's financial interest, and external pressure such as threats to the business's financial stability, financier covenants, and market expectations. The identified matters are the motivations that can influence fraud.

**Rationalization:** Rationalization is an attempt by an employee to justify why they commit fraud. For example, if an employee is having accommodation issues, this can be used to justify a fraudulent act. So, an employee who feels underpaid may also argue that it is a way of augmenting the payment received. As such, the rationalization is an act of an employee who commits fraud to justify his action. It is a way of covering up for the wrong done to the employer. By making the employers feel guilty about the circumstances,

forensic accounting relies on the fraud triangle to identify weak points in the business system and find possible suspects in cases of fraud. It consists of three core concepts that together create a situation ripe for fraud: incentive, opportunity, and rationalization. People must have the incentive and opportunity to commit financial fraud, as well as the ability to justify it (Sulaiman, 2021).

### **Fraud Diamond**

Eze (2015) stated that the diamond theory of fraud explains an individual's capability, personality traits, and abilities to play a major role in determining whether fraud may occur. According to Wolf and Hermanson (2004), Crumbley, Heitger, and Smith (2017), the perpetrator of fraud must have the necessary traits, abilities, or positional authority to pull off his crime. Eze (2015) further noted that while opportunities can open the doorways to fraud, incentives and rationalization will attract people to them, but such an individual must have the capability to recognize the open doorway as an opportunity and should be able to take undue advantage of the identified loopholes. By way of illustration, if someone does not understand how to make journal or ledger entries in the books of accounts, they will not know how to manipulate numbers no matter what the incentive or opportunity is (Rasey 2019).

### **White-collar crime**

This theory was coined by Sutherland (1919), as cited in Michael (2016), and attributed different characteristics and motives to a typical street criminal. In fact, this is a type of crime committed by a respected person of high social status in the course of his occupation. It is different from blue-collar street crimes such as arson, burglary, theft, assault, rape, and vandalism, which are most likely associated with psychological, associational, and structural factors. White-collar criminals are opportunists who, over time, learn how to take advantage of their circumstances to accumulate financial gain. They are educated, intelligent, and affluent individuals who are qualified enough to get a job that allows them unmonitored access to often large sums of money. The federal Bureau of Investigation (FBI) has adopted a narrow approach, defining white-collar crime as those illegal acts that are characterized by deceit, concealment, or violation of trust and are not dependent upon the application or threat of physical force or violence (Sulaiman, 2021).

Blue-collar crime will more often use physical force, whereas in the corporate world, the identification of a victim is less obvious, and the issuer of reporting is complicated by a culture of commercial confidentiality. Fredrichs (2017) stated that the only way one crime differs from another is in the backgrounds and characteristics of its perpetrators (Ajiteru, 2020). Almost all white-collar offenders are distinguished by lives of privilege, much of which has its origins in class inequality. It is estimated that a great deal of white-collar crime goes undetected or, if detected, is not reported. Because of the high status of the perpetrators of these crimes, the services of a highly trained and experienced examiner or investigator like a Professional Forensic Accountant are needed to obviate the occurrence of such high-profile fraud.



### **Forensic Accounting and Auditing on Fraud Identification, Investigation and Control**

Fraud prevention entails enacting measures that would prevent fraud from occurring in the first place. Fraud detection arises when it becomes difficult to prevent fraud from occurring. In the opinion of Bolton and Hand (2022) the detection of frauds follows simultaneously with the commitment and must go on as it occurs. It has been observed that a fraud matter requires a sophisticated approach from its preventive stage to its detection. According to Okafor (2004), it is necessary because human ingenuity devises diverse ways to gain an advantage over other individuals or organizations. It also involves the falsification of accounting records and other creative accounting techniques. According to Karwai, (2017); Ajie and Ezi, (2020); Anyanwu, (1993); Okafor, (2004) and Adeniji, (2016), various methods are devised on a daily basis which are but not limited to defalcation, suppression, outright theft and embezzlement, tampering with reserves, insider abuses and forgeries, fraudulent substitutions, unauthorized, unauthorized lending, lending to ghost borrowers, kite flying and cross firing, unofficial borrowing, impersonation, teeming and lading, fake payment, fraudulent use of the firms documents, fictitious accounts, false proceeds of collection, manipulation of vouchers, dry posting, over invoicing, inflation of statistical data, ledger accounts manipulation, fictitious contracts, duplication cheque books, computer fraud etc. In the view of Arokiasamy and Cristal (2009), civil and criminal lawsuits are the end point of all this. Forensic accounting is one of the modern approaches that can be employed from the fraud prevention stage to the fraud detection stage.

Baird and Zelin (2019,) stated that forensic accounting remains an important investigative tool for the detection of fraud. This was corroborated by Curtis (2018), who described forensic accounting as essential to the legal system by providing expert services such as fake invoices, suspicious bankruptcy valuations, and the analysis of financial documents in fraud schemes. Kasum (2019) asserts that the services of forensic accountants are more required in the public sector than in the private sector. In the opinion of Ramaswamy (2015), the emergence of fraud cases is partly attributed to poor corporate governance and accounting failures, which give loopholes to the fraudsters in organizations. Cases of global crimes have been reported by Price Waterhouse and Coopers (PWC 2003) to be on the increase, leading to organizational failure. The report calls for the need to embrace forensic accounting and education.

At present, Computer forensics remains the investigator's best tool in the detection and implementation of white-collar investigations. Degboro and Olofinsola (2017), described forensic accounting as the application of criminality methods and the integration of accounting investigative activities and legal measures to detect and investigate financial crimes and related accounting misdeeds. According to Dhar and Sarkar (2020), forensic accounting, also called investigative accounting or fraud audit, is a combination of forensic science and accounting. In the words of Crumbley (2018), forensic science is the application of the laws of nature to the laws of man. He described forensic scientists as examiners and interpreters of evidence and facts in legal cases who also offer expert opinions regarding their conclusions in court of law (Ajiteru, 2020). Baird and Zelin (2019)



stated that forensic accounting is an important investigative tool for the detection of fraud. Gray (2018) reported that the forensic accountants' investigation includes identification fraud. Gottschalk (2020) affirmed that the focus of forensic accounting is on evidence revealed by the examination of financial documents. The evidence collected or prepared by a forensic accountant may be applied in different contexts. According to Curtis (2018), forensic accountants are essential to the legal system, providing expert services such as fake invoicing valuations, suspicious bankruptcy valuations, and analysis of financial documents in fraud schemes. Hopwood, Young, and Leiner (2018) acknowledged that fraud investigation is the systematic process of gathering and reviewing evidence for the purpose of documenting the presence or absence of fraud. It involves processes ranging from engagement, evidence collection, reporting, and loss recovery, respectively. Albrecht and Albrecht (2021) described forensic investigations as the deployment of specialized investigative skills in carrying out an inquiry conducted in such a manner that the outcome will have application to the court of law.

### **Theoretical Framework**

Fraud is defined by different authors in different ways according to their circumstances. While some define fraud as a trick with intent to obtain someone else's assets, the Black's Law Dictionary defines fraud as ...all multifarious means which human ingenuity can devise, and which are resorted to by one individual to get an advantage over another by false suggestions or suppression of the truth. It includes all surprise, trick, cunning, or dissembling, and any unfair way by which another is cheated, Sulaiman (2021).

It thus involves deception, confidence, and trickery. The study is based on the Fraud Diamond Theory and the Fraud Triangle Theory.

### **The Fraud Diamond Theory**

The Fraud Diamond Theory is an offshoot of the fraud triangle theory. David Wolfe and Dana Hermanson (2019) fused 'the element of capability, personal traits, and abilities' that play a major role in determining if fraud will actually happen or not. The theory propounded by Wolfe and Hermanson (2016) considered the four perceptions as triggering elements that must be contemporaneous for fraud to occur. The fraud theory model that was propounded by Cressey highlighted certain elements or features that increase the probability of fraud occurring in any given situation, but the theory didn't provide perfect guidance. The fraud diamond theory therefore is an improvement over the fraud triangle theory to address the other precipitating factors not addressed by the fraud triangle model. This is the introduction of a fourth perceived element (capability) that must exist in the system for fraud to occur. Thus, in addition to addressing incentive, opportunity, and rationalization, Wolfe and Hermanson added the individual capability or capacity of the fraudster as an essential ingredient that can propel fraud to occur. They reasoned that although there may be opportunity, pressure, and rationalization for fraud to occur, without the right capabilities of the fraudster in place, the fraud will not occur.

### **Fraud Triangle Theory**

The classic fraud theory elucidates the motives behind fraud as a triangle of perceived opportunity, pressure, and rationalization. The term 'fraud Triangle' is credited to Edwin Sutherland, who in his book *White Collar Crime* in 1949 is credited with having coined the term 'fraud Triangle'. He is thus adjudged to be the primary contributor to the model. Cressey (2018), in his attempt to render an explanation as to what causes, entices, or motivates people to commit fraud or crime, propounded the theory. Based on extensive talk with convicted swindlers in prisons, he discovered that for every fraud to occur, three elements must be present: motivation or pressure, rationalization, and opportunity. He observed that deception or crime will take place only when the individual is under pressure or there is a motivating factor for the fraudster. This factor may be great financial need, unrealistic targets for an employee from the organization, or organizations' reward systems like performance bonuses or penalties for individuals not achieving set targets. Nevertheless, even with the pressure to commit fraud, without the presence of the enabling environment—opportunity—the fraud will not occur. Therefore, a clear opportunity like weak internal control, the absence of proper accountability, or a lack of supervision for the swindler to gain access to or control over the resources to be defrauded must be present. Also weighing the disproportionality between the cost or repercussion of the fraudster being caught and the benefit accruable from the crime, although there may be pressure and opportunity for fraud to occur, the theory postulates that without rationalization, which is justification for a given action, fraud will not materialize. Rationalization finalizes the precipitating factors that must be contemporaneous for fraud to occur. This is self-justification for deviant behavior, like justifying criminality by advancing probable reason(s) why the action(s) is necessary and justifiable as being acceptable or normal.

### **Review of Empirical Prior Studies**

In the course of reviewing different related papers and studies written on the subject matter, diverse contributions and suggestions were made. Umar, Samsudin, and Mohamed (2016) write on government revenue control and government expenditure authorization. The study pointed out the elements of revenue control through which useful financial control can be achieved in the public sector. These include: periodic supervision; scrutinizing the system of revenue administration so that services are not executed without charges; appropriate submission of demand notices and follow-up actions to tract the debts; timely submission of controlled forms and documents together with records of receipt; prompt deposit of excess funds into the bank account; establishment of authority limits and cash limits; and installation of an efficient internal control system (Ajiteru, 2020). Popoola, Che-Ahmad, and Samsudin (2016) agreed with the findings of the above study conducted by Adams Umar, Samsudin, and Mohamed (2016) and added to the major control mechanisms, specifically the office of the Auditor General of the Federation and the public accounts committee. This indicates that the government, particularly in Nigeria, has put up remarkable standards and financial regulations to avert various forms of fraud, such as misappropriation of assets and other resources, corruption, and other financial statement fraud.

Baz, Samsudin, Che-Ahmad, and Opoola (2016), measured the roles of forensic auditors in fighting fraudulent activities, the difference between forensic and statutory auditors, the features of forensic auditors, and the impact of forensic auditors on Nigerian corporate governance. The study concludes that forensic auditors have enhanced management responsibility and reinforced external auditors' independence. Ajiteru (2020). Masoyi, Dadi, and Ogere (2016), examined the efficiency of forensic auditing in detecting and preventing bank frauds in Harare, Zimbabwe. The study used questionnaires, documentary reviews, and personal interviews to acquire information from respondents in 13 commercial banks, 4 building societies, and 4 audit firms. The study showed that although forensic auditing has a significant positive effect on organizational performance, the forensic auditing department lacked relevant resources and technical know-how. Modugu and Anyaduba (2018), examined forensic accounting and financial fraud in Nigeria. The study used a survey design utilizing a sample size of 143, comprising practicing auditors, accountants, stakeholders, and management staff. The authors used the binomial test for data analysis and determined that there is significant consensus amongst the stakeholders on the effectiveness of forensic accounting in fraud prevention and control, internal control quality, and financial reporting.

Akkeren and Tarr (2016), employed Chi-square in their study and used a statistical package for social science to empirically appraise forensic accounting as a remedy to economic and financial crimes in the Nigerian public sector. By testing four hypotheses, their study showed that forensic accounting is a financial strategy used to detect and prevent economic and financial misappropriation in the Nigerian economy. Adebisi, Matthew, and Emmanuel (2016) used the mean and standard deviation in assessing a forensic accountant's ability to plan fraud detection procedures. They also employed multivariate analysis of variance and analysis of variance ANOVA to compare their study with that of Agbiboa (2017). The researchers identified that forensic accountants efficiently transform the level and nature of audit tests when management fraud is high. They also suggest that forensic accountants should be engaged in the risk of management fraud appraisal process rather than consulting them. Suleiman and Othman (2016) disclose that forensic accountants are required in the Nigerian banking sector. Forensic accounting is a useful tool for addressing financial crimes in the banking system. Consequently, conventional accounting techniques are not effective in preventing financial crimes. They concluded that the view that frauds have been least detected by auditors is valid as auditors are more sufficiently qualified to detect frauds rather than emphasizing the traditional separation of duties and protection of assets. Most of the studies reviewed have explored studies on forensic accounting and collected data in their individual states. However, there is a need to examine the wider scope by extending it to an adequate number of Federal Government Ministries that are mostly the battlegrounds of fraud and corruption, as mentioned in the problem statement. This will assist in obtaining relevant data that is capable of revealing appropriate and dependable findings.

### Methodology

For the purpose of this study, a research survey design was adopted with a population of four (4) ministries out of the entire ministries in Nigeria and a sample size of about one hundred (100) respondents, which comprises auditors and accountants from the four ministries selected from FCT Abuja. The source of data for this study was obtained from two sources. The data was sourced from primary and secondary sources, with the primary source being the major source, which consisted of structured questionnaires that were administered to respondents in the various ministries. The study used a well-structured questionnaire to generate data from respondents. They were administered to respondents from four ministries in the office of the accountant general of the federation, and fifty questionnaires were filled out and returned.

### Data Analysis and Interpretation

The data collected from the questionnaires was analyzed using Analysis of Variance (ANOVA). The choice of ANOVA for this study is based on the fact that it determines the extent of variance in dependent variables that is caused by independent variables and is also used in comparing the variation in more than two independent samples that are drawn from a population with the same variance. The decision Rule states that the null hypothesis should be rejected if the calculated value of f-ratio is greater than the critical value of f, i.e., ( $f_{t,1, N-t}$ ).

Otherwise, it stands accepted.

### Test of Hypotheses

$H_1$ : The application of forensic accounting service in public sector is not effective in detecting fraud.

Table 1.

Variables	Question 2	Question 8	Question 11	Total
Agree	6	14	10	30
Strongly agree	37	30	25	92
Disagree	4	5	5	14
strongly disagree	3	1	10	14
<b>Total</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>150</b>

**Table 2:** Anova Summary

Source	Sum of square	Degree of freedom	Mean square	F ratio
Between	1510	3	503.3	28.16
Within	143	8	17.875	
<b>Total</b>	<b>1653</b>	<b>11</b>		

Critical value of 5% level of significance with degree of freedom 3 to 8 is 4.07

**Decision Rule**

Since the calculated value is 28.16, it is greater than the critical value of 4.07. The alternative hypothesis ( $H_A$ ) is accepted, and the null hypothesis ( $H_0$ ) is rejected. Therefore, the application of forensic accounting services in the public sector is effective in detecting fraud.

$H_2$ : There is no significant relationship between forensic accounting and litigation support services in Nigeria's courts.

**Table 3.**

Variables	Question 3	Question 6	Question 10	Total
Agree	10	10	6	26
Strongly agree	35	35	30	100
Disagree	5	5	7	17
Strongly disagree	-	-	7	7
<b>Total</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>150</b>

**Table 4:** Anova Summary

Sources	Sum of square	Degree of freedom	Mean square	F ratio
Between	1774	3	591.33	80.7
Within	44	6	7.33	
<b>Total</b>	<b>1818</b>	<b>9</b>		

Critical value 5% level of significant with degree of freedom 3 to 6 is 4.76

**Decision Rule**

Since the calculated value of 80.7 is greater than the critical value of 4.76, The alternative

hypothesis ( $H_A$ ) is accepted, and the null hypothesis ( $H_0$ ) is rejected. Therefore, there is a significant relationship between forensic accounting and litigation support services in the Nigerian office of the accountant general of the federation.

$H_3$ : The application of forensic accounting is effective in preventing fraud in the public sector.

**Table 5.**

Variables	Question 5	Question 7	Question 9	Total
Agree	8	12	10	30
Strongly agree	32	28	34	94
Disagree Strongly disagree	6	3	5	14
	4	7	1	12
<b>Total</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>150</b>

**Table 6: Anova Summary**

Source	Sum of square	Degree of freedom	Mean square	F ratio
Between	1524	3	508	108
Within	33	7	4.7	
<b>Total</b>	<b>1557</b>	<b>10</b>		

Critical value at 5% level of significance with degree of freedom 3 to 7 is 4.35.

#### **Decision Rule**

Since the calculated value of 108 is greater than the critical value of 4.35, the alternative hypothesis ( $H_A$ ) is accepted and the null hypothesis ( $H_0$ ) is rejected. Therefore, we can conclude that the application of forensic accounting in the public sector is effective in preventing fraud.

#### **Discussion of Findings**

Based on the analysis of variance (ANOVA) used to test hypotheses one, two, and three, the findings are stated below.

In the test of hypothesis 1, 122 respondents agreed while 28 disagreed, making 150 respondents. This revealed that the application of forensic accounting in Nigeria's public sector is effective in detecting fraud. This finding is in line with the works of Ranaswany (2015) and Arzova (2018).



In the second test of hypothesis 2, 129 respondents agreed, while 21 disagreed. This revealed that there is a significant relationship between forensic accounting and litigation support services in Nigeria's courts. Manning (2017) and Cutis (2018) share the same opinion about this finding.

In the test of hypothesis three, 126 respondents agreed while 24 disagreed. This revealed that the application of forensic accounting is effective in preventing fraud in Nigeria's public Sector. This is in line with the works of Gray (2018) and Dada et al. (2018).

### **Conclusion and Recommendations**

The study tried to present a detailed investigation of the effects of forensic accounting and fraud detection and prevention in the Nigerian public sector using four ministries in Imo state civil service as case study. This study disclosed that forensic accounting merges auditing, accounting and investigating skills in detecting, preventing and presenting valid evidence being used against prosecutors in the Nigerian courts. The study also disclosed that fraud being committed by public sector staff and political offices holders can be prevented or reduced through the roles of forensic accountants. Forensic accountants also required forensic accounting skills to enable them significantly contribute, their quota in the economic development and protecting the image of the Nigerian Public Sector. The public sector organization should embrace the forensic accounting technique especially in the current cutting-edge technology with its attendant high level of fraud. The Economic and Financial Crimes Commission (EFCC) and the Independent Corrupt Practices and other related offenses Commission (ICPC) should encourage the implementation of forensic accounting through adequate training of their staff and ensure that the top-level employees of the anti-graft agency are committed to the program. Where prosecution is needed, proper forensic accounting mechanism should be put in place to gather all available evidence surrounding any fraud. Nigerian Public Sector should build a consistent internal control system and instigate efficient and effective internal check; public sector should also adopt a good accounting system in valuable and effective practices; the range of Nigerian anti-corruption agencies such as EFCC, ICPC should be reorganized by the government for achieving better performance; professional accounting bodies in Nigeria should make sure that more forensic accountant are produced and are well trained with current skills of forensic accounting processes; Financial Reporting Council (FRC) should also ensure the best standard, regulations and guidelines are established to ensure service delivery and best practice. Finally, Nigerian public sector needs to invest in building human capacity to recover the internal auditors' quality. Nigerians should also hold the character of accountability, integrity, equality, impartiality as a moral duty to eliminate or reduce the altitude of fraud in the Nigerian public sector. Further research on forensic accounting and fraud prevention should exploit other variables such as, relative size factor (RSF), relational trend analysis and Benford's law technique. Government agencies and departments should be equipped with latest IT infrastructure and software programmes laced with data-mining capabilities. Public sector MDAs should recruit multi-task professional accountants with good knowledge in information technology as part of the faculty members in both the accounts and audit departments.

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