

The Effect of Forensic Audit Services on Tax Fraud in South-South, Nigeria

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Abstract

The need to address tax fraud has increasingly been attracted to the state authorities' administrators, decision-makers, scholars, and investigators in Nigeria. Although various efforts have been made to alleviate it for effective revenue generation, mobilization through taxation is still low. Consequently, this study examined Forensic Audit Services and Tax Fraud in South-South Nigeria. To this end, a cross-sectional research design with a survey research strategy was used. Copies of questionnaire, reflecting the research questions, were distributed to a sample size of 228 staff in the Nigerian Federal Inland Revenue Service in the South-South States with a target population (of 530) and a sampling error of 5% at a 95% confidence interval. To assess the study's hypotheses, the Robust Least Squares Estimation technique was used. Findings revealed that Forensic Audit Investigation Services disaggregated into Background Investigation, Investigative Interview, and Analytical Procedures exert a negative and significant effect on Tax Fraud. It was also revealed that the explanatory power of Litigation Support Services in the form of Pre-trial Support and Expert Witnessing negatively and significantly affected Tax Fraud. The implications of these findings suggest that forensic audit services mitigate the occurrence of tax fraud in Nigeria, thereby improving compliance and tax revenue generation. On the premise of the foregoing, we recommend that tax investigating agencies, such as the federal Inland Revenue Service and its counterparts in the states (all in Nigeria) should employ background investigation techniques including surveillance, undercover operations and database searches as a routine procedure to proactively search for indicators of fraud. Besides, tax officials should be well trained on the usefulness and application of analytical procedures, ranging from simple ratio analysis, data mining techniques, Bedford's Law, and Beneish model during an investigation, to help in their audit efficiency.

Keywords: forensic audit services, tax fraud, Nigeria

1. Introduction

The issue of tax fraud has increasingly dominated the front burner of world governments. Taxation is a potent and revenue-generating tool used by sensibly responsible governments to maintain a sustainable level of economic growth and development. This is mainly achieved through national and sub-regional budgets.

The Nigerian national budget is divided into two parts: oil revenue and non-oil revenue. Until recently, oil revenue realised from the sale of crude oil and gas resources accounted for about 80% of the total fiscal revenue (Agbaeze et al., 2015). This revenue, though forced to increase as a result of the Russian-Ukraine war fell at a time, following the abrupt crash in the oil price due to the Covid-19 pandemic in the good part of 2020. Consequent upon the oscillations in the oil prices, the revenue-generating efforts shifted to taxation which is acknowledged as a potentially powerful alternative, when properly and fiscally harnessed, to contribute immeasurably to the economic growth and development of Nigeria. However, the use of tax has been limited due to the level of non-compliance in the tax system (Amos et al., 2017), and given that the tax compliance rate, today, in Nigeria is low, below 10% (Deloitte,

2021), with about fifteen billion dollars or the equivalent lost annually to fraudulent tax practices (Okwe, 2019). Uninterestingly, this loss finds many expressions in the government's inability to meet the social-economic needs of the citizenry (Nyenke & Amadi, 2019), thereby significantly fuelling the poverty level of Nigerians. Today, about 133 million Nigerians of the population of 200 million Nigerians are multi-dimensionally poor {National Bureau of Statistics (NGS, 2022)}. Some (Adegbite et al., 2018; Omodero, 2015) have argued that earnings through tax are filtered away through tax fraud. Generally, the effect of tax fraud is seen in the gross reduction of government revenue, and dealing with this has become a thorn for the government and tax authorities.

Causal factors of tax fraud are identified as responsible (Ibadin & Embele, 2020) but subsisting efforts to address it, beyond the consideration of the elements of a fraud triangle, have yielded little success (Aimienrovbiye & Ibadin, 2015). In the main, the Federal Government of Nigeria has made efforts at curtailing the menace of tax fraud, through several measures, including the implementation of the voluntary asset and income declaration scheme (VAIDS, 2017). VAIDS was designed in 2017 to encourage taxpayers to voluntarily pay taxes owed. The implementation of VAIDS confirmed the exposure of several cases of tax avoidance and tax evasion. Through VAIDS, over N30 billion naira was recovered from taxpayers who at various times had abused the voluntary tax system and misrepresented their tax returns (Reuters, 2018). Despite the VAIDS, the compliance rate is still low (Deloitte, 2021).

Other measures to shore up tax compliance in Nigeria included payment of administrative fines and criminal prosecution where there are breaches. Furthermore, agreements have been reached with other countries through tax administration exchanges; strict rules on voluntary disclosures, fiscal information and investigations, among other measures are used. All of these measures are designed to shore up revenue and address the vexatious tax fraud. Various statistics in Nigeria have revealed useful indications of the amount lost to tax fraud and other non-compliant behaviours. In 2018, the tax revenue obtained in Nigeria constituted about 6% of GDP which is remarkably low compared unfavourably to countries, like India, Ghana, and South Africa whose tax-to-GDP stood at 16%, 15.6%, and 27% respectively (Adekunle & Disu, 2018). The Federal Inland Revenue Service (FIRS, 2020) in Nigeria revealed a tax shortfall of about N3.54 trillion in 2019 against the N1.4 trillion recorded in 2018. Tonuchi et al. (2020) found that Nigeria lost about 56% of her potential tax revenue annually to the informal sector with an estimated loss being around N3.5 trillion in 2018. Given the significance of these estimates, one can say that a lot is yet to be done towards fighting tax fraud in Nigeria.

Though these measures are not completely irrelevant, some of the schemes cannot completely be exposed except with the deployment of appropriate accounting techniques, the forensic audit services. Consequently, Omodero (2015) suggested holistic, multi-faceted and multi-pronged forensic audit services to deal with tax fraud. The inference drawn from this submission is that such services will enhance the effective prosecution of tax fraud cases when they are timely understood and deployed.

On the premise of the foregoing, notwithstanding the theoretical appeal of subsisting evaluations of forensic audit services, it is worth noting that there are shreds of limited empirical evidence to support the utilitarian value of forensic audit services. The knowledge gap created by limited empirical appeals to data largely informed this study. The study's findings will be used as a reference point for researchers who wish to expand the body of knowledge in the area of forensic audit services and tax fraud as well as other related financial crimes.

2. Related Literature Reviews

Tax fraud has varied perspectives: specifically, it is a revenue-related financial statement fraud, where a taxpayer, through intentional tax avoidance, understates their net income through aggressive tax behaviours to pay lower income taxes (Albrecht et al., 2012; Saxunova et al., 2017).

In general usage, tax fraud includes the criminal output of all efforts by individuals, firms, and other entities directed towards evading taxes to reduce one's tax liability (Adegbite et al., 2018). It is a moral burden where it is seen as a tax avoidance act even though the act is not a direct violation of the tax law but has some perceived acts of non-compliance against the spirit of the law {Statement of Taxation Standard (STS No. 9)}

From the tax fraud concept of legislative perspective, the Economic and Financial Crimes Commission (Establishment) Act, Section 46 (EFCC, 2004, Section 46) described tax fraud as a financial crime which is characterised by a non-violent, criminal and illicit activity committed to earn wealth illegally in a manner that violates the law. Lenz (2017) described it as the intentional manipulation of tax data to benefit the taxpayer and deprive the government of money. When stretched further, tax fraud connotes any arrangement premeditated to reduce tax payable (Institute of Chartered Accountants of Nigeria (ICAN, 2019a) and collusion to avoid or lower the

amount of tax payable (Ogbueghu, 2016) or to decrease tax authorities' misuse of tax funds {Organisation of Economic Cooperation Development (OECD, 2017a)}. From the foregoing, tax fraud encompasses the application of deception and the use of illegal methods towards the reduction of tax liability.

Several circumstantial shreds of evidence are themselves indicators of tax fraud. Notwithstanding, tax authorities through these shreds of evidence can establish either a negligent act by a taxpayer or a taxpayer's uncertainty about their legal duty to pay tax (Albrecht et al., 2012). Despite the limited subsisting techniques, including statutory provisions to deal with tax fraud, the incidence and prevalence of tax fraud remain a cause for concern. Against this backdrop, and in the light of previous literature (Ibadin et al., 2019) for an appeal to forensic accounting tools, this study is undertaken to relate forensic audit services to addressing the vexed issues of tax fraud.

2.1 Forensic Audit Services

Forensic audit services are largely targeted at uncovering fraudulent acts of some sort and malfeasance (Omodero, 2015). These services include investigation and litigation support (Okiro & Abdi, 2018 Predrag et al., 2015). A forensic investigation is an essential aspect of a forensic audit. Conducted when there is a predication that points to the occurrence of fraud (Clayton, 2011). A forensic investigation is undertaken rigorously to identify culprits and co-conspirators (Smith & Crumbley, 2009). Forensic audit and forensic investigation are however intertwined.

Forensic audit services employ various techniques, the least being data analysis, transaction testing, and review of financial processes. These techniques enable the detection of fraudulent tax transactions, unreported income, and hidden assets that are used to evade taxes. Furthermore, forensic audit services can also provide recommendations for improving a company's internal control system and reducing the risk of tax fraud.

Forensic audit services are found to reduce tax fraud by detecting fraudulent schemes such as revenue recognition fraud, tax evasion, and money laundering. Additionally, such forensic audit services can help in recovering misappropriated assets and by identifying and analysing financial irregularities, conducting investigations, and providing evidence in legal proceedings against fraudulent individuals. Besides, forensic audit services enhance the efficiency and effectiveness of tax compliance programs. To this end, forensic audit can be in distinct parts: For instance, Golden and Dyer (2006, 2011) identified background investigation, investigative interviews, analytical procedure, and criminal prosecuting techniques as investigation services offered during a fraud investigation. All or any of these services can be deployed to reflect the type of investigation undertaken (Bassey, 2018; Omodero, 2015; Udukeke, 2019).

2.1.1 Background Investigation

Background investigation (BI) focuses on criminal records, commercial records, and financial records and the gathering of facts from publicly available records relating to an individual or organisation (Gerry, 2014) to clearly understand their profile in a fraud act (Udukeke, 2019). The first-step examination is discreetly undertaken to determine the merit or otherwise of any case (Gillespie, 2014). The BI should be tactical (Albrecht, 2012) with the surveillance-type BI used to seek direct evidence of fraud (Silverstone et al., 2012), and to identify an investigation that leads or locates an interviewee (Jonny & Schaffer, 2006).

As part of BI, surveillance can be by observations of a suspect's activity or being stationary (Wells, 2014) in which case an investigator surreptitiously watches a suspect at a fixed base. Surveillance can also be non-stationary where an investigator follows a suspect around (Albrecht et al., 2012). Therefore well-conducted surveillance can expose tax fraud-related information about the fraudsters {(Organisation of Economic Cooperation Development (OECD, 2017b)}. All of these may readily be visible to the naked eye and invisible in a paper trail (Silverstone et al., 2012). In some instances, some covert operations may be used to gather evidence covering a fraud act (Albrecht et al., 2012; Wells, 2014).

2.1.2 Litigation Support Service

Beyond BI is Litigation which is a process taken to resolve a matter through negotiation (Bassey, 2018). A litigation support service (LSS) is a process of settling disputes or hearing disputes between parties in a court of law. The forensic auditor may be engaged during prosecution to support lawyers, judges or the prosecution team in their quest to effectively prosecute a fraudster. To this extent, there may be a need for consultation and support services to attorneys regarding current and pending cases (Oyedokun, 2013). Similarly, LSS can be deployed in the areas of quantification of economic damages and the calculation of economic loss, resulting from a breach of contract or other legal duties (Owojori & Asaolu, 2009). LSS is a part of the forensic accountant's compass, involving tax fraud-related issues, such as quantification of losses, contested business valuation, loss of earnings, insurance claims, and intellectual property conflicts, among other things (Aribaba, 2013). In sum, the LSS, thus, is rendered by a

professional expert to help the court form an opinion of issues under litigation and requiring critical analysis of issues, obtaining key documents as evidence, review of relevant documents in the initial assessment of a case to identify possible and probable areas of loss; briefing counsel on the financial and accounting aspect of the case during the pre-trial preparation; advising lawyers during trial, especially in respect to cross-examinations and assisting in settlement discussion and negotiation (Okoye & Akamobi, 2009). However, LSS can be pre-trial support and expert witnessing (Singleton & Singleton, 2010).

2.1.3 Investigative Interview

An investigative interview (INVI) is a method of communication used to acquire information and, in certain situations, admit wrongdoing (Golden & Dyer, 2006, 2011). In such an interview, victims are questioned and witnesses cross-examined to obtain testimonies and evidence as proof of significant omissions (Albrecht et al.2012). This technique can transform an unwilling person into a source of valuable information, can form scope for further analysis, and identify areas to be investigated more thoroughly (McGimsey, 2015). It is employed after sufficient and competent data have been collected, assessed and reasoned (Singleton & Singleton, 2010)), beginning with a background investigation of the interviewees (Albrecht et al., 2012). By so doing, investigators can obtain sufficient information that provides a lead in a case to gather enough supporting evidence to question suspected fraudsters and obtain an admission of guilt. The interview can be in the form of a meeting to interrogate broad issues before going into detailed questioning of witnesses (Albrecht et al. 2012). The questions used might be introductory, informational, and opening remarks (Bobitan & Dumitrescu, 2015).In this context, the success of the interview lies in the forensic investigators' ability to craft a more persuasive argument than just a precise set of questions (Golden & Dyer, 2006, 2011).

2.1.4 Analytical Procedures

Analytical procedures (ANAPs) allow the comparison of the relationship between two or more measures to establish reasonableness (Crumbley et al., 2015). They identify unexpected relationships as a result of outliers (Corbett & Clayton, 2011). The basic assumption behind the ANAPs is that the relationship and trends in financial information are expected to follow a historical and logical pattern. ANAPs reveal an investigation of fluctuations and relationships that are consistent with or differ from expected values by a significant amount (Chukwu et al., 2019). On this basis, forensic auditors look out for what should be provided rather than what was provided (Eiya & Otor, 2013). Thus, it can take the form of vertical analysis, horizontal analysis, financial ratio analysis and data mining that help find unusual trends, relationships, errors or fraud in given financial information (Silverstone et al.,2012).

Horizontal and vertical analyses translate changes into percentages to highlight areas of top concerns (Udukeke, 2019), and ratio analysis may be used to detect fraud (Noor et al., 2012; Ola, 2018; Friday & Micah, 2019). Many professionals have relied on ratio analysis to gain a better understanding of a business condition and to detect red flags during a fraud investigation (Kenyon & Tilton, 2011). Ratios also predict management's incentives to overstate revenue and understate expenses when the target is to fictitiously show improved financial health (Omoye & Eragbhe, 2014) or reduce revenue and overstate expenses when the target is to reduce taxable income (Friday & Micah, 2019). Ratios may not reflect a true test for reliability, but can, however, be used to indicate the preference for additional tests (Ola, 2018).

Given the preceding limitations, Beneish in 1999 modelled five statistically significant ratios to reveal the likelihood of earnings manipulation. This model was found viable for predicting the incidence of fraud and other earnings manipulation (Gianluna & Medioli, 2019). Another model is Frank Bedford's (1883-1948) law designed to determine whether variables under study are a result of fraud or unintentional error. Benfords' Law applies a frequency distribution that permits data mining and is used for the determination and detection of accounting fraud (Gianluna & Medioli, 2019) and has also been used to indicate fraud in taxation via data mining (Nigrini,1994). Beyond the components of analytical procedures, the net worth is worth noting.

The net-worth analysis is found in three parts; it examines the change in the taxpayer's net worth over some time (Ola, 2018). The net worth method juxtaposes the taxpayer's net worth with the amount of income reported by them to assess the reasonableness of their incomes. The cash expenditure analysis compares the taxpayer's known sources of income against his spending habits and assumes that every expenditure must have its respective source. The method of bank deposit analysis reconstructs income by analysing the periodic or regular bank deposits by taxpayers who have an income-producing business. Using this indirect method of proof, prosecutors can show either through the increase in net worth, an increase in bank deposits or the prevalence of cash expenditure that a taxpayer's wealth grew.

2.1.5 Pre-trial Support

Through pre-trial support service, an attorney on either side of a dispute engages a professional consultant to conduct affairs, and provide professional advice, education and strong working knowledge on any legal issue or matter under litigation (Crumbley et al., 2015). Essentially, the professional consultant obtains documents, examines relevant materials to establish an initial appraisal of a case; and assists with the understanding of the financial issues to formulate additional questions to be asked during the examination and cross-examination. The professional consultant gathers and interprets facts and evidence, prepares analyses, and provides advice and strategies on pending or actual litigation, amongst others. Lawyers can further consult with the professional consultant on the standard of care desired and the tenets of Generally Accepted Accounting (or forensic accounting) Principles to be followed (Silverstone et al., 2012); consult with their expertise in tax fraud cases (Muehlmann et al., 2012) and the preparation of demonstrative aids or exhibits that can help the court understand the processes and the schemes used by the tax fraudster to conceal the fraud act (Oyedokun, 2013).

2.1.6 Control Variable-Whistleblowing

Whistle-blowing Policy introduced in 2016 in Nigeria is an anti-corruption programme that encourages people to voluntarily disclose information about fraud, bribery, and looted government funds, among others {Whistle-blowing Policy (WBP, 2016)}. Given that tax fraud is criminal and illegal, whistleblowing discloses an illegal, immoral or illegitimate crime. Whistle-blowing can be internal or external (Anya & Iwanger, 2019) to call attention (Adetula & Amupitan, 2018). It can be reported formally, informally, and anonymously (Onakoya & Moses, 2016) out of a genuine concern about the crime (Emeka-Nwokeji & Okeke, 2019) Whistle-blowing must have the existence of communication of hotlines, putting in place channels and ensuring that the process guarantees that every reported information is considered and be in place{Association of Certified Fraud Examiners (ACFE, 2018)}.

Whistleblowing has been found useful to anti-graft agencies (Adetula & Amupitan, 2018; Anya & Iwanger, 2019) and tax fraud cases (Widuri & Handiwikarsa, 2019). However, advised that whistle-blowers are protected against the fear of reprisals and negative publicity (Onakoya & Moses, 2016) with the right mechanisms for tax fraud (Suprana & Muhammad, 2020).

2.2 Some Related Empirical Reviews

The literature has documented some empirical studies which support the 'forensic audit services and tax fraud' linkage.

2.2.1 Background Investigation

In a study, using bank fraud as the impact variable, Inyada et al. (2019) investigated the impact of forensic audits on bank fraud in Nigeria. The study drew a sample of 128 people. They employed a survey research design, using questionnaire as a research instrument. Data retrieved were analysed using the Ordinary Least Square (OLS) estimation technique. Findings revealed that forensic audits measured by bank fraud detection and bank fraud prevention exert a significant influence on bank fraud. This suggests that the application of forensic audit as a tool for fraud detection and prevention can significantly reduce the level of bank fraud in the banking industry. The study concludes that a forensic audit is an effective tool for addressing financial crimes where conventional accounting techniques are ineffective.

Similarly, Okoye and Ndah (2019) investigated the relationship between forensic accounting practices and the prevention of fraud in Nigerian manufacturing companies; and they found that investigation and litigation practices have a significant effect on and positive relationship with the prevention of fraud in the manufacturing industry. The study recommends that manufacturing companies in Nigeria should step up the application of forensic accounting practices to deter fraud. In Rivers State, Nigeria, Akenbor and Ironkwe (2014) examined the relationship between forensic auditing and fraudulent practices in Nigerian public institutions. The population of the study consisted of 12 public institutions in the State. A survey research design was used, with questionnaire employed as the primary source of data collection. Data retrieved were analysed using the Pearson Product Moment Correlation (PPMC), using the SPSS version 17. Findings from the analysis revealed that both proactive and reactive forensic auditing techniques have a negative relationship with fraudulent practices in Nigeria's public institutions.

2.2.2 Investigative Interview

Okoye et al. (2019) examined forensic accounting and financial fraud detection in selected federal ministries in Enugu state, Nigeria. The descriptive survey research design was adopted with questionnaire distributed to respondents. A sample size of four hundred and two was used. Responses were analysed, using Analysis of Variance

(ANOVA). It was suggested that investigative interview is an essential activity for a forensic accountant, with strong experience. Furthermore, Udukeke (2019) carried out a study on the utilisation of forensic auditing techniques for fraud detection in large-scale business organisations. He found that the status of an organisation significantly influence respondents' ratings on the utilisation of data mining but did not influence their ratings on the other investigative techniques. It was therefore recommended that regular training should be provided for accounting staff on analytical and other forensic auditing techniques to aid in the detection of fraud.

2.2.3 Analytical Procedures

Akinadewo and Akinkoye (2020) investigated specific forensic accounting techniques used in the detection of tax evasion in Nigeria. A self-administered and semi-structured questionnaire was used to obtain data from three hundred and one (301) experts comprising forensic accounting practitioners and tax officials in Lagos State, Nigeria. Using mainly descriptive statistics, such as mean, standard deviation and percentages to analyse the data obtained, findings showed that Benford's Law, identifying anomalies, document review, revenue approach, trend analysis, net-worth comparative method, data mining tools and expenditure approach are rated as frequently used techniques. However, the techniques used differ among practitioners.

2.2.4 Pre-trial Support Services

Ejoh and Ukpe (2017) examined the application of forensic accounting in litigation engagement. A survey research design and questionnaire were used and the questionnaire was administered randomly to a sample size of one hundred (100) respondents consisting of accountants/auditors, corporate workers and legal practitioners. Findings from data analysis obtained, using ANOVA (t-test), showed a significant relationship between the forensic accountant's report and the attorney's judgement in a litigation case. Further findings showed the infallibility of the services of forensic accountants and, their different skill sets.

2.2.5 Expert Witnessing

Okiro and Abdi (2018) investigated the effects of forensic auditing services on fraud detection among commercial banks in Kenya. The descriptive research design was employed and questionnaire was used as a research instrument. Both correlation and regression techniques were applied to evaluate the relationship between the variables of the study and to estimate the model. Results of the analysis revealed that forensic audit services, proxied by investigation and litigation support, show a significant negative impact on fraud occurrences.

In Nigeria, Dada and Jimoh (2020) carried out a study on forensic accounting and financial crime in Nigeria's public sector and found that forensic accounting proxied by litigation support service had a negative relationship with and a significant effect on financial crime suggesting that increased litigation reduces financial crime in Nigeria's public sector.

2.2.6 Whistleblowing

Suprana and Muhammad (2020) investigated the separate and joint effects of monetary incentives and social discrimination towards whistle-blower's intentions on tax fraud reporting. The study employed an experimental research design using forty-eight (48) participants. The outcome of the event was tested using logistic regression. It was found that the independent variable in the form of monetary incentives and social discrimination was inadequate to explain the level of whistleblowing in tax fraud cases. The study concludes that without monetary incentives, whistleblowing proves to be fairly effective in curbing tax fraud. Similarly, Adetula and Amupitan (2018) investigated whistleblowing as a method for combatting fraud, forgery, and corruption in Nigeria and discovered that there is a positive association between whistleblowing and fraud, forgery, and corruption detection.

2.3 Theoretical Framework- The Fraud Diamond Theory

There is a plethora of theories and motivations behind tax fraud, the fraud diamond hypothesis stands out, and it is as relevant as other comparable theories. The fraud diamond theory is credited to Wolfe and Hermanson (2004) who observed that the capability of an individual is an attribute that is essential to committing a fraudulent act. Such an attribute gives fraudsters the acumen to successfully execute a fraud act. When this element combines with the elements in a fraud triangle, they all create a fraud diamond. The first element of opportunity opens the door to a fraud act, pressure and rationalisation lead a fraudster towards the door while it only takes the capability for a fraudster to walk through that door and perform the act. To this end, a person who possesses the capability takes advantage of others, the intelligence to take advantage of internal control weaknesses; the ego and confidence of not being caught; has a persuasive personality that can convince others into committing a fraud act; tells lies with confidence (deceitful) and knows how to deal with stress. According to Oyedokun (2016) and Aimienrovbiye and

Ibadin (2015), the fraud diamond theory should be understood as it is complete in exploring the hidden characteristics of any fraudster (Asusu, 2019).

3. Method

We used a cross-sectional research design with a survey strategy to allow for data gathering from a large sample of respondents at a given point in time. It also allowed for the collection of qualitative data through structured questionnaire, invariably coded and analysed, using descriptive and inferential statistics. The qualitative data were measured to reflect the scale of intervals to allow relationships between variables and to produce models of these relationships.

3.1 Population and Sample Size

The target population was FIRS staff operating in the South-South states in Nigeria. The choice of location was due to our proximity to the target population. Thus, a total number of five hundred and thirty (530) respondents (FIRS, 2022) made up the study's population. To calculate the sample size, we used Yamane's (1967) sampling formula. With the target population (530) and a sampling error (of 5%) at a 95% confidence interval, a sample of 228 was obtained. Further, the non-probability sampling technique was employed to select the respondents of the study. Specifically, the convenient sampling technique was used to select the respondents of the study. This sampling technique was adopted because it was intended to allow us to reach out to accessible respondents that were available at a point in time. Data were sourced primarily and the instrument was structured into two parts: Part A consisted of demographic data of respondents while Part B consisted of statements measuring the dependent and independent variables. Each variable consisted of three operational statements rated using a Likert scale, ranging from Strongly Agree of 5 points to Strongly Disagree of 1 point. The Likert-scale rating was used to enable us to assign a numerical value that is amenable to interval-or ratio-based quantitative analysis.

3.2 Validity and Reliability Tests

The content validity of the research instrument was used. Suggestions were accounted for, using the Forensic Accounting and Taxation lecturers of the Department of Accounting, University of Benin. On reliability, the internal consistency approach, Cronbach's Alpha Statistic was used to measure the reliability of the research instrument. A pilot test was conducted using twenty staff of the FIRS, in Edo, Rivers and Bayelsa States with a scale of twenty-one items. The result of the analysis showed that all the scales were worthy of retention as Cronbach's Alpha Statistics. An overall Cronbach's Alpha Statistics of 0.848 was achieved. An Alpha coefficient value of 0.7 or above indicates that the statements in the questionnaire are all consistent and have captured the information about the variables (Saunders et al. (2016). The FIRS personnel were administered copies of the questionnaire in the affected States/Regions under investigation.

3.3 Operationalization and Measurement of Variables

The variables of this study were operationalized given the measurements presented below.

Table 1. Operationalization and Measurement of Variables

| Variables | Types | Measurements | Apriori Sign |
|---------------------------------|-------------|---|--------------|
| Tax Fraud | Dependent | The mean value of three statements was measured on a 5-point Likert scale, covering tax-to-GDP, reporting and filing of tax returns, and failing to register with relevant tax authorities. | |
| Background Investigation | Independent | The mean value of three statements was measured on a 5-point Likert scale, covering surveillance, covert operation and database search. | – |
| Investigative Interview | Independent | The mean value of three statements measured on a 5-point Likert scale, covering information and admission seeking an interview | – |
| Analytical Procedure | Independent | The mean value of three statements was measured on a 5-point Likert scale, covering ratio analysis, data mining, and the indirect comparative method. | – |
| Pre-trial Support | Independent | The mean value of three statements measured on a 5-point Likert scale, covering risks and potentials of pursuing a case of tax fraud, the use of demonstrative aids, and “shame and name” | – |
| Expert Witnessing | Independent | The mean value of three statements was measured on a 5-point Likert scale, covering understanding complex tax issues, expert testimony, and tax debt recovery. | – |
| Whistleblowing | Control | The mean value of three statements was measured on a 5-point Likert scale, covering reporting channels, whistleblowing irrespective of reward or discrimination, and reporting information. | – |

3.4 Model Specification

Against the backdrop of the theoretical framework and the extant literature, this paper adapted the model of Bassey (2018) who investigated the impact of forensic accounting on the management of fraud. The functional model in his study is presented below:

$$FP = f (FI, LS) \tag{1}$$

Where: FP = Fraud Prevention; FI = Forensic Investigation; LS = Litigation Support

However, the model was modified as presented below:

$$TFRAUD = f (IS, LSS) \tag{2}$$

Where: TFRAUD = Tax Fraud; IS = Investigation Services LSS = Litigation Support Services

Given that this study investigated Forensic Audit Services and Tax Fraud, a decomposition of the right-hand variable identified in equation (2) was appropriate. Thus we have:

$$TFRAUD= f (BINV, INVIT, ANAPRO, PRE-TRIAL, EXPWIT) \tag{3}$$

Integrating a control variable (whistleblowing) which may likely cause a variation in the dependent variable (tax fraud), the functional equation (3) is modified as thus:

$$TFRAUD= f (BINV, INVIT, ANAPRO, PRE-TRIAL, EXPWIT, WHSBLOW) \tag{4}$$

Expressing equation (iv) in its econometric form, the model for this paper is adjusted below:

$$TFRAUDI = \beta_0 + \beta_1 BINVi + \beta_2 INVITi + \beta_3 ANAPROi + \beta_4 PRE-TRIALi + \beta_5 EXPWITi + \beta_6 WHSBLOWi + \mu_i \tag{5}$$

Where: β_0 = Intercept; TFRAUD= Tax Fraud; BINV = Background Investigation; INVIT = Investigative Interview; ANAPRO= Analytical Procedure; PRE-TRIAL= Pre-trial Support; EXPWIT = Expert WSitnessing; WHSBLOW =

Whistleblowing; i = Cross section; β_1 to β_6 = Unknown coefficients; μ = Error term. Based on extant theory and empirical literature, this study presumptively expects forensic audit services to reduce tax fraud. Thus, $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6 < 0$

4. Data Presentation and Analysis

Both descriptive statistics (using SPSS) and inferential statistics (using E-views) were employed. The inferential statistic used was the Robust Least Square estimation technique (RLS) which was employed in lieu of the Ordinary Least Square (OLS), given the unfavourable outcomes of some of the basic assumptions of the latter.

4.1 Descriptive Statistics

Descriptive statistics provide the mean value of the responses, the standard deviation, the skewness and kurtosis of the data set, the Jarque-Bera statistics and an associated p-value.

Table 2. Descriptive Statistics

| Variables | Mean | Max | Min | Std. Dev. | Skewness | Kurtosis | JB(prob) |
|------------------|------|------|------|-----------|----------|----------|----------------|
| TFRAUD | 1.27 | 5.00 | 1.00 | 0.54 | 3.17 | 16.56 | 1838.33 (0.00) |
| BINV | 4.59 | 5.00 | 1.00 | 0.87 | -3.09 | 12.50 | 1054.76 (0.00) |
| INVIT | 4.61 | 5.00 | 1.00 | 0.77 | -2.99 | 12.83 | 1087.71 (0.00) |
| ANAPRO | 4.51 | 5.00 | 1.00 | 0.95 | -2.65 | 9.44 | 571.50(0.00) |
| PRE-TRIAL | 4.55 | 5.00 | 1.00 | 0.89 | -2.68 | 9.85 | 620.33 (0.00) |
| EXPWIT | 4.69 | 5.00 | 1.00 | 0.76 | -3.68 | 17.23 | 2107.75 (0.00) |
| WHSBLOW | 4.66 | 5.00 | 1.00 | 0.79 | -3.17 | 13.65 | 1260.59 (0.00) |

Source: Authors' Compilation from SPSS, 2023

From Table 2 TFRAUD had a mean value of 1.27 indicating that on average, respondents strongly disagreed on indicators that suggest the absence of tax fraud in Nigeria. Invariably, the presence of the identified indicators suggests that tax fraud is prevalent in the Nigerian tax system. The maximum and minimum values stood at 1.00 and 5.00 indicating that responses ranged from strongly agree by 5 points to strongly disagree by 1 point. The standard deviation (SD = .54) appeared to be very narrow suggesting that the responses provided cluster around the mean value. It was also observed that the TFRAUD does not mirror a normal distribution given that it is positively skewed ($s = 3.17$) and leptokurtic ($k = 16.56$). The Jarque-Bera statistic appears to be large and significant ($p < .05$), thus, confirming that TFRAUD is not normally distributed.

As regards BINV, INVIT, ANAPRO, PRE-TRIAL, EXPWIT, and WHSBLOW, the mean value of these variables is clearly above 4, suggesting that on average, respondents strongly agreed that these variables can affect tax fraud. The maximum and minimum values of the variables stood at 5.00 and 1.00 respectively indicating that responses to each variable ranged on a scale of 5 points of strongly agree to 1 point of strongly disagree. Likewise, the standard deviation appeared to be very narrow indicating that the responses provided cluster around the mean values. It was also observed that BINV, INVIT, ANAPRO, PRE-TRIAL, EXPWIT, and WHSBLOW are negatively skewed and leptokurtic having a skewness value of less than 0 and Kurtosis value highly above 3, thus, suggesting that the data set is not normally distributed. The Jarque Bera- statistics displayed large values and appear to be significant ($p < .05$), thus, clearly confirming that BINV, INVIT, ANAPRO, PRE-TRIAL, EXPWIT, and WHSBLOW are not normally distributed. This is not surprising as categorical data are usually not from a normal distribution, hence, reinforcing the use of Robust Least Square in the analysis.

4.2 Correlation Analysis

Table 3 provides the correlation result of the variables of the study. It is pertinent to state that correlation only reports on the level of association between variables.

Table 3. Correlation Matrix

| Variables | TFRAUD | BINV | INVIT | ANAPRO | PRE-TRIAL | EXPWIT | WHSBLOW |
|-----------|--------|------|-------|--------|-----------|--------|---------|
| TFRAUD | 1 | | | | | | |
| BINV | -0.67 | 1.00 | | | | | |
| INVIT | -0.44 | 0.50 | 1.00 | | | | |
| ANAPRO | -0.71 | 0.53 | 0.37 | 1.00 | | | |
| PRE-TRIAL | -0.69 | 0.62 | 0.42 | 0.59 | 1.00 | | |
| EXPWIT | -0.57 | 0.34 | 0.15 | 0.60 | 0.35 | 1.00 | |
| WHSBLOW | -0.53 | 0.40 | 0.21 | 0.52 | 0.51 | 0.47 | 1.00 |

This study employed Cohen's (1998) guideline, $r = 0.10$ to 0.29 for a weak correlation, $r = 0.30$ to 0.49 for a moderate correlation, and $r = 0.50$ to 1.0 for a strong correlation for interpreting the result of the analysis. In Table 3, BINV exhibited a strong and negative correlation with TFRAUD ($r = -0.67$), INVIT showed a moderate and negative correlation with TFRAUD ($r = -0.44$), ANAPRO displayed a strong and negative correlation with TFRAUD ($r = -0.71$), a PRE-TRIAL investigation showed a strong and negative correlation with TFRAUD ($r = -0.69$), EXPWIT demonstrated a strong and negative correlation with TFRAUD ($r = -0.57$) while WHSBLOW exhibited a strong and negative correlation with TFRAUD ($r = -0.53$). The implication of this result suggests that all explanatory variables are negatively associated with tax fraud. That is, the more intensified an independent variable or as independent variables increase, there is the likelihood of a reduction in tax fraud.

4.3 Regression Analysis

This study employed the Robust Least Square estimation technique as an alternative to the OLS estimator generally identified as the Best Linear Unbiased Estimator (BLUE). This choice was reinforced following the unfavourable outcome of the properties of OLS otherwise referred to as the classical assumption of OLS.

Table 4. Classical Assumption Summary

| Diagnostics | Test | Probability | Remark |
|--------------------|---------------------------|---------------------------|---------------|
| Normality | Histogram Plot | JB = 585.89 ($p = .00$) | Not Fulfilled |
| Multicollinearity | Variance Inflation Factor | Centred VIF less than 10 | Fulfilled |
| Heteroskedasticity | Breusch-Pagan-Godfrey | F = 6, 190 ($p = .00$) | Not Fulfilled |
| Linearity | Ramsey-Rest test | F = 2, 189 ($p = .00$) | Not Fulfilled |

Source: Authors' Compilation (2023)

Table 4 reveals the residual diagnostics performed on the data of this study. The tests show no presence of multicollinearity. However, the data set was not normally distributed and therefore heteroskedastic. The residual statistics on the histogram plot reveal that the data set is positively skewed ($s = 1.46$) and leptokurtic ($k = 10.92$), suggesting that the data set is not normally distributed. This result was reinforced by the Jacque-Bera statistics (JB = 585.89) with an associated significant p-value ($p < .05$) which rejects the hypothesis of a normal distribution. Although normality is not a strict property of OLS, the fulfilment of this assumption makes OLS Blue in the entire class of unbiased estimators whether linear or not (Ergün & Göksu, 2013). Similarly, the heteroskedasticity test of Breusch-Pagan-Godfrey revealed the presence of heteroskedasticity with an F-statistic and associated p-value of less than .05. The test rejects the null hypothesis that the variance of each error term is constant or homoscedastic given the values of the independent variables. Lastly, The Ramsey Rest test of linearity showed an F-statistic and associated p-value of less than .05 suggesting that the model is miss-specified. When linearity does not hold, OLS estimators are biased and inconsistent, according to Ergün and Gksu (2013). In other words, estimate results may be incorrect, and in this case, OLS is no longer BLUE. Renaud and Victoria-Fester (2010) noted that not fulfilling these basic assumptions may lead to coefficient estimates that do not reflect the underlying statistical relationship and consequently a spurious result. Hence, the Robust Least Square estimation tool was adopted. The Robust Least Square regression estimation tool is an alternative to OLS that is insensitive to the presence of serial correlation, non-normal distribution, and constant residual errors, which could otherwise yield estimators that, are not BLUE.

Table 5:Regression Output

Dependent Variable: TFRAUD.Method: Robust Least Squares.Included Observations: 197

| Variable | Coefficient | Std. Error | z-Statistic | Prob. |
|------------------|-------------|-------------------------|-------------|---------|
| BINV | -0.074418 | 0.014276 | -5.212834 | 0 |
| INVIT | -0.095797 | 0.013687 | -6.999327 | 0 |
| ANAPRO | -0.118285 | 0.014126 | -8.373602 | 0 |
| PRE-TRIAL | -0.079014 | 0.014436 | -5.47327 | 0 |
| EXPWIT | -0.163761 | 0.015107 | -10.83999 | 0 |
| WHSBLOW | -0.026249 | 0.014278 | -1.838352 | 0.066 |
| C | 3.755146 | 0.076837 | 48.87166 | 0 |
| Robust Stat | | | | |
| R-squared | 0.198872 | Adjusted R-squared | | 0.17357 |
| Rw-squared | 0.88005 | Adjust Rw-squared | | 0.88005 |
| Akaike info crit | 331.2912 | Schwarz criterion | | 359.023 |
| Deviance | 4.491131 | Scale | | 0.11809 |
| Rn-sqd stat | 1535.509 | Prob (Rn-squared stat.) | | 0 |
| Non-robust Stat | | | | |
| Mean dep var | 1.265651 | S.D. dependent var | | 0.54392 |
| S.E. | 0.337378 | Sum squared resid | | 21.6266 |

Source: Computation from Eviews (2023)

According to Table 5, BINV has a negative and significant relationship with TFRAUD $\{z(1, 197) = -5.21, \beta_1 = 0.07, p < .05\}$. This implies that an increase in background investigation will lead to a 0.07 per cent decrease in tax fraud. Likewise, INVIT was found to have a negative and significant relationship with TFRAUD, $\{z(1, 197) = -6.99, \beta_2 = 0.09, p < .05\}$, suggesting that an increase in investigative interview will result in a 0.09 per cent reduction in tax fraud. Equally, ANAPRO has a negative and substantial connection with TFRAUD $\{z(1, 197) = -8.37, \beta_3 = 0.11, p < .05\}$. This means that increasing the analytical technique will result in a 0.12% decrease in tax fraud. Furthermore, PRE-TRIAL showed a negative and significant connection with TFRAUD $z(1, 197) = -5.47, \beta_4 = 0.08, p.05$, meaning that increasing pre-trial assistance will result in a 0.08 percent reduction in tax fraud. Moreover, it was observed that EXPWIT has a negative and significant relationship with TFRAUD $\{z(1, 197) = 10.83, \beta_5 = 0.16, p < .05\}$, denoting that increasing expert witnessing will cause a 0.16 per cent fall in tax fraud. Finally, WHSBLOW, being a control variable, showed a negative but non-significant relationship with TFRAUD $\{z(1, 197) = -1.83, \beta_6 = 0.03, p < .05\}$. This indicates that an increase in whistleblowing will result in a 0.02 per cent reduction in tax fraud. However, the relationship was not significant.

Table 5 also showed that the adjusted coefficient of multiple determination stood at $R = 17.35\%$ and $R^2_w = 88\%$, suggesting that approximately 17% - 88% of the systematic variations in the dependent variable can be explained by the independent variables, while about 12% is attributable to variables not captured in the model but by the standard error of the regression ($S.E = 0.34$). The overall Rn-squared statistic (goodness-of-fit test) capable of prediction which stood at $Rn = 1535.509$ with a corresponding p-value of $< .05$ indicate strong rejection of the null hypothesis that all non-intercept coefficient is equal to zero. This implies that taken together, the independent variables and the control variables jointly account for the variation in tax fraud.

Lastly, the scale statistics or S-estimator which belongs to the class of high-breakdown-value estimators measures an estimator's robustness to outliers. The scale indicates the average distance that the variable deviates from the regression line. The lower the value of this statistic, the better the model, because low values imply that the data tend to follow the line of symmetry (Gailly & Adler, 2017). From Table 5, the S-estimator was found to have a value of 0.11. This, therefore, implies that on average the observations are close to the fitted line.

4.4 Discussion of Findings

Given the findings, the study demonstrated first, that Background Investigation has a significant negative impact on

tax fraud. This implies that when background investigation is instituted without prior notice, hidden assets can easily be traced and businesses that escape the payment of tax can be identified. This finding is consistent with the claim that background investigation using a well-conducted surveillance technique can expose information including banking and financial institutions operated by a tax fraudster as well as valuable assets and businesses owned by a tax fraudster espoused by OECD, 2017b. The study also showed that the proactive search for tax fraud can provide the forensic auditor with more knowledge of tax fraud schemes which in turn can serve as invaluable evidence during prosecution. This result supports the literature on the use of undercover operations as strong background investigative tools to identify perpetrators of tax fraud (Silverstone et al., 2012 Wells, 2014). Taken as a whole, the findings are in tandem with Akenbor and Ironkwe (2014) and Akenbor and Oghoghomeh (2013) who found a negative and significant relationship.

Second, Investigative Interview was found to have a significant and negative relationship with Tax Fraud, indicating that the explanatory power of investigative interview is capable of establishing a reduction in the occurrence of tax fraud. The result of this study is similar to Udukeke (2019) who found that investigative interview is effective for fraud detection in a large-scale business organisation. However, this study appears to be in dissonance with Okoye et al. (2019) who found that forensic accountant communication skills have no significant effect on financial fraud detection through an interview process.

Third, Analytical Procedures have a significant negative relationship with Tax Fraud. This suggests that the use of analytical procedures will mitigate the occurrence of tax fraud. Analytical procedures are excellent fraud detection tools that spot red flags that may indicate the possibility of fraud occurrence. This study established that the application of analytical procedures, such as ratio analysis, can identify unusual trends, relationships and significant deviations in reported tax information which may suggest the likelihood of tax fraud. This finding corroborates the empirical evidence provided by Friday and Micah (2019) and Noor et al. (2012) which demonstrated that the explanatory power of ratios can predict tax compliance and tax fraud respectively. It is interesting to note that this study also showed that the application of an indirect method where a taxpayer's net worth appears to be inconsistent with reported tax income enhances tax fraud detection. The findings of Akinadewo and Akinkoye (2020) also confirmed that the comparative net-worth method is effective for tax fraud detection. Similarly, the study of Ola (2018) revealed that when using indirect analytical procedures, prosecutors can show that a taxpayer's wealth grew during the tax year beyond what was reported to tax authorities.

Fourth, this study confirmed that Pre-trial Support has a significant and negative effect on Tax Fraud. This finding may be explained by the idea that engaging forensic auditors before a case goes to court can provide the prosecution with a better understanding of the viability of tax fraud cases. This result corroborates the findings of Ejoh and Ukpe (2017) who found that there is a significant relationship between the time of hiring a forensic accountant and the outcome of litigation. This suggests that it is viable for tax prosecutors to engage forensic auditors early enough on a case as their expert opinion contributes to the successful outcome of tax fraud cases. This current study also revealed that the use of the 'Name and Shame' approach and being charged to court and adjudged a tax fraudster can reinforce compliance. This result appears to be consistent with the findings of Bassey (2018) which revealed that litigation support exerts a significant and negative influence on fraud.

Furthermore, Expert Witnessing was found to have a significant and negative relationship with Tax Fraud, implying that expert witnessing can reduce tax fraud. The study also showed that with expert witnessing, tax fraud cases can be effectively prosecuted and revenue lost to tax fraud can be determined and recovered. This finding broadly supports the evidence (Dada & Jimoh, 2020); Oseni, 2017, and Okiro & Abdi, 2018) that litigation support services have a negative relationship with financial crime. They further noted that the services of the forensic auditor as an expert witness are crucial to assisting the court to reach an opinion. On tax fraud.

Lastly, this study controlled for Whistleblowing and found a negative relationship between Whistleblowing and Tax Fraud. However, the finding was non-significant. Although the study demonstrated that establishing channels for reporting tax fraud, rewarding whistle-blowers, and the use of reported information can affect the level of tax fraud, the extent to which it reduces tax fraud is not significant (uncertain). This conclusion is comparable to, but not significantly different from, the findings of Adetula and Amupitan (2018), who discovered a positive and significant association between whistleblowing and the identification of fraud, forgery, and corruption.

5. Conclusion and Recommendations

This study examined the effect of forensic audit services on tax fraud, with a focus on South-South, Nigeria. Variables which anchored the research questions, objectives and hypotheses included the background investigation, investigative interview, analytical procedures, pre-trial support and expert witness. A cross-sectional research design with a survey

strategy was used. This was followed by a convenience sampling for ease of accessibility to the respondents in the South-South States in Nigeria. The Robust Ordinary Least Square was used after some diagnostics. The findings revealed that background investigations, investigative interviews, and analytical techniques may uncover instances of tax fraud and offer evidence that can be utilized to successfully prosecute a tax fraudster. The study also showed that with litigation support services, including pre-trial support and expert witnessing, compliance can be reinforced and tax revenue lost to tax fraud can be recovered. Premised on the findings, it is recommended that tax investigating agencies and forensic auditors should be empowered to employ background investigation techniques including surveillance, undercover operations, and database searches as routine procedures to search for predications of fraud where the likelihood of fraudulent tax practices persists. And for wide-reaching findings, other investigating agencies, such as the Economic and Financial Crime Commission, State Internal Revenue Service Board, and Joint Tax Board, should be examined on forensic audit services and tax fraud. Replication studies could be undertaken, using any of these agencies or comparison studies.

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