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EFFECT OF FORENSIC ANALYSIS ON TAX FRAUDS IN OIL AND GAS COMPANIES IN NIGERIA: AN EMPIRICAL APPROACH

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Abstract

The primary objective of this study is: to evaluate the effect of forensic analysis on the level of tax fraud prevention of oil companies in Nigeria. In doing this, the study focused on oil and gas companies that are listed in the NSE as the year ended 2024. This study purposively selected ten (10) oil companies operational in Nigeria for a period of ten years, that is, 2015-2024. A multi-regression analysis of panel data was used as the analysis tool which reveals that forensic audit and litigation has no significant effect on tax frauds prevention in oil and gas companies in Nigeria. However, the study clearly concludes that forensic analysis can positively influence tax fraud prevention eventhough it is not significant at this point in time. Based on this therefore this study recommends that they should be a better regulatory oversight by the government relevant agencies in order to ensure continued safeguard of government' interest.

Keywords: Forensic Analysis, Forensic Audit, Forensic Litigation, Tax Fraud Prevention, Oil and Gas Companies

1. Introduction

Financial ingenuity and frauds activities among others have been one of the most popular problems facing businesses. Fraudulent practices and corruption seem to be a global threat that affects the economies of nations and the societies where they exist. This has made it subjects of continuous deliberations, discussions and analysis in literatures as the cause of retrogression of developing countries like Nigeria. Economic, financial and related crimes are believed to be the fundamental challenge to the economy as they have negative impact on its growth and development (Ibanichuka, et al., 2022). These frauds are common public sectors and big enterprises like multinational companies, financial institutions, among others. Fraudulent activities and financial crimes include bribery, embezzlement, oil bunkering, looting, tax frauds, money laundering and foreign exchange malpractice (Kolawole, et al., 2018).

In order to reduce these noticeable frauds and other financial crimes, the idea of forensic analysis was introduced. The forensic analysis investigates into legal and financial documents with the aim to detecting frauds and where necessary prevents their recurrence (Okorafor, et al., 2024). The techniques used in forensic analysis include: forensic fraud preventions, detections and deterrence; forensic auditing, investigation and interviewing, forensic litigations, mediations and arbitrations and; computer assisted document reviews (Obadiah & Ibrahim, 2024; Oyedekun, 2024; Vutumu, 2025). In an attempt to find a solution to resultant economic woes in Nigeria due to mono-economy nature and over reliance on proceeds from crude, the federal government decided to focus on increasing revenue from other sources such as increasing the tax net and tax administration through forensic analysis companies operating in the country (Dada & Jimoh, 2020). The seemingly fraudulent activities perpetrated companies

especially in areas of tax returns and tax avoidance have likely negatively affects the tax revenue projection which therefore necessitates the focus on tax fraud preventions (Dada & Audu, 2021).

Oil companies in Nigeria are one of the companies with enormous resources and assets bases with huge economic activities going on in the country in the areas of exploration and exportation/importation of crude oil products and as such are huge tax payers in the country. The tax return from the companies contribute significantly to the revenue accrued to the government and therefore requires scientific analysis to ensure that there are no frauds in the level and extent of their activities. It is against this backdrop that the empirical analysis of the effect forensic approaches on the tax returns of the oil and gas companies in Nigeria.

There is a widespread nature and increasing dynamics in tax fraud in the areas of tax return and these have combined to making reliance on conventional or traditional auditing tool grossly insufficient to address the overwhelming challenges. Oil and gas is a big business in Nigeria as it accounts for over 70% of its foreign earnings and therefore, the chances are also high that tax revenue from the companies in that sector if adequately returned will also be huge (Chepngeno & Fred 2020). However, it was noticed by the federal government that tax return of the oil companies does not commensurate with the expected tax revenue and therefore the needs for forensic analysis into the books of the company to investigate their level and extent of tax returns. Based on this, the problem identified by this study is to consider whether government forensic analysis has had any impact on the level of tax fraud prevention of oil companies operating in Nigeria. Consequently, this study targets addressing this identified gap by considering the following specific objectives of the study are to:

i. determine the effects of forensic audit on tax frauds of listed oil companies operating in Nigeria
ii. determine the effects of forensic litigations on tax frauds of listed oil companies operating in Nigeria

The significance of this study is the fact it provides empirical evidence of the effect of both forensic audit and litigations as approaches of forensic investigation on the prevention of fraud tax in oil and gas companies in Nigeria. The study also provided the unique theoretical relationship between forensic analysis and tax fraud with focus on the oil and gas companies in Nigeria.

2. Literature Review

In the literature review, this study presented the conceptual review that focused on the basic concepts in this study; the theoretical review that focused on the theories that underpinned this study and; empirical review which focused on related studies conducted both locally and internationally. Based on this review, this study established the gaps that was filled to serve as contribution to knowledge.

2.1 Conceptual Review

The concepts reviewed in this study include forensic accounting and tax frauds

Forensic Accounting

Al-Sharaiyi (2018) defines forensic accounting as the utilization of specialized skills and knowledge to explore the evidence of economic translation. Anuolam, et al., (2017) opined that forensic accounting include the process of summarizing, interpreting and presenting complex financial situations succinctly, clearly and factually, particularly in the legal jurisdiction as expert. It concerns itself with the utilization of accounting disciplines to facilitate the determination of issue of fact in business litigations (Ehioghiren & Atu, 2016). Furthermore, Association of Certified Fraud Examiners (ACFE) see forensic accounting as the use of specific skills in potential, real criminal or civil disputes, that include generally accepted auditing and accounting principles; establishing profits or losses, property, damage or income, estimation of internal controls, frauds and other related matter that involves inclusion of accounting skills into legal system (cited in Kolawole *et al.* (2018). This indicates that forensic accounting technique could be used to investigate and detect a crime

in order to reveal all the attending attributes and identify the culprit(s).

Forensic accounting is seen as the applications of analytical and investigative skills for the sole purpose of solving financial issue in the manner that meet the required standards given by the legal instrument (Abdulrahman, 2019). According to this study therefore, forensic accounting is also described as an amalgamation of forensic accounting and science that uses the application of auditing, accounting, analytical and investigative skills in resolving financial distortions in the required manner according to existing legal framework.

Tax Fraud

Tax fraud is naturally very difficult to conceptualize or measure in organizations. Although tax administration usually presents estimation of the level of fraud, the approaches utilized are scarcely declared, vary widely, and some time even unsuitable (Okoye, 2017). Tax fraud is defined as that behaviour that is aimed at gaining an un-lawful tax advantages and / or causing un-lawful tax negativity. The means of gaining such advantages usually vary, as do also the potential cost yielding from the fraud (Feria, 2020). To this extent, there is often the inability to understand the complexity of the phenomenon that then reflected in the insufficiency of any measure adopted to control it. Tax fraud involves evasion and organized fraud. Evasion results from either temporary time crimes or informality, and can be seen as a deliberate concealment, omissions or misrepresentations of the information in order to reduce the tax liability (Gemmel & Hasseltine, 2014). However, organized fraud involves a systematic and coordinated action, with various degree of level of sophistication and organization, targeted towards gaining unlawful tax financial advantages (Okoye & Ndah 2019).

Tax evasions tend to be perpetuated by small and medium companies or enterprises, operating at local or national level – although not exclusively limited – who normally take advantage of the nation's administrative limitation and distinction in the tax base (Feria, 2020). Organized fraud on the other hand which is the focus of this study tends to be perpetuated by large companies with their allies (criminal gangs) operating at multinational or transnational level, who take advantage of the system and/or tax authorities' enforcement limitation regarding the cross-border trades (Okpala, 2019). These two categories of tax fraud as highlighted also gives rise to different types of cost burden to the nation. Organized fraud more often than not tends to result in higher level of revenue losses and subsidy to organized fraud networks, whereas evasions tend to have significant impact in the areas of tax inequality and creating an unequal playing ground for the tax payers.

2.2 Theoretical Review

The theories reviewed and applied to this study are fraud diamond theory and fraud preventive theory.

Fraud Diamond Theory

The fraud diamond theory was first proposed and presented by Wolfe and Hermanson in December, 2004. (Wilhelm, 2004). According to them, although perceived incentive or pressure coexist along with the opportunity to committing frauds and a total rationalization for doing that, it is however unlikely for fraudulent activities to take place unless with the presence of the fourth element (called, capability) (Vutumu, 2024). In other words, the potential perpetrator of the fraud must have the ability and requisite skills to commit that fraud. Furthermore, even though opportunity opens the doorway to fraud, and incentive (that is, pressure) and rationalization draw the perpetrator towards it, the perpetrator must have the existential capability to recognize the opened way as an opportunity and have the skill to take advantage of it by walking through that way, not just once, but repeatedly". With this additional element (i.e. capability) presented in the fraud diamond theory influencing individuals' decision to commit fraudulent activities, the institutions and auditors need to understand organization stakeholders' (especially employees') individual traits and abilities so as to assess the risk of possible fraudulent behaviours (Vutumu, et al., 2025).

Fraud diamond theory is also relevant to this study, because the theory broaden the horizon and expand the dimensions on the subject matter which is fraud. This is

done by stating that there must be the capability to commit fraud for any fraudulent activity to occur. This theory further expatiate the perspective and scope of forensic accounting in the bid to detect and prevent fraud. Furthermore, fraud diamond theory gave additional information to fraud triangle theory by including that for fraudulent activity to occur, there must also be the capability to perpetuate such. The theory is therefore overwhelmingly important in this study as it further expand the knowledge of what to check out for in detecting and preventing fraud in the financial institutions. The theory also broaden the perspectives of the forensic accounting and experts in carrying out their functions as it relate to fraud detection and prevention.

Fraud Preventative Theory

The fraud preventative theory was propounded by William, S. Albrecht (Vutumu, 2024). The theory is a conceptual framework that was designed in order to understand and mitigate the possible occurrence of frauds within corporations/organizations. According to the theory, fraud can be effectively and efficiently prevented through the formal establishment of deliberate and robust internal control mechanisms, fostering ethical organizational culture and comprehensive employee training and development (Albrecht, et al., 2022). Albrecht et al. further emphasizes the significance of vigilance and effective proactive measures in the identification of potential fraud risks just before they materialize or happen and result in actual fraudulent acts.

Fraud preventative theory is highly relevant to this study on the impact of forensic analysis on fraud detection and prevention in Nigeria's oil and gas companies. Forensic accounting is a specialized field that combine auditing, accounting, and investigative skills, and it is instrumental in identifying, detecting, evaluating, and preventing fraudulent activities in an organization. By applying the principles or tenants of fraud preventative theory, forensic accountants enhance the efficacy of fraud detection and prevention mechanisms within financial institutions (Moyes & Baker, 2021). The theory further supports the belief that preventive approaches, when carefully integrated with the forensic accounting skills, can effectively reduce the possibility or likelihood of fraudulent activities by addressing the vulnerabilities and fostering the culture of integrity, transparency and accountability.

2.3 Empirical Review

Akinninyi et al. (2025) examined the role of forensic accounting in enhancing fraud detection and promoting financial integrity within the Nigerian public sector. Using a conceptual and literature-based approach, the study explored how forensic accounting techniques such as investigative audits and digital forensic tools can be leveraged to detect, prevent, and prosecute financial crimes in institutions. The findings revealed that forensic accounting significantly contributes to uncovering reinforcing anti-corruption frameworks, financial irregularities and supporting litigation through the provisions of credible evidences. However, despite its potential, the adoption of forensic practices still remains constrained by institutional structural inefficiencies and lack of technical expertise.

Vutumu et al. (2025) investigated the combined roles of forensic accounting and internal controls in fraud prevention within Nigeria's public sector. The study used primary source to collect and analyse data from 385 professionals in accounting, audit, finance, and forensic fields. The findings indicated a moderate internal control effectiveness, with strong control activities but weaker risk assessment and communication practices in the public sector. In addition, the study revealed that forensic accounting significantly contributed to fraud prevention, though tools like whistleblower systems and litigation support were underutilized.

Obadiah and Ibrahim (2024) examined the role of forensic accounting skills in preventing financial fraud in Nigeria's Ministries, Departments and Agencies (MDAs). Using a survey design, data were obtained from 164 respondents across 82 MDAs and analyzed through cross-sectional regression. The findings revealed that investigative, legal, litigation, auditing, analytical and technical skills significantly influence fraud detection.

However, ethical skills showed no significant relationship with fraud detection, suggesting that forensic accounting skills play a vital role in mitigating financial fraud in MDAs.

Harjuni (2024) explored the application of forensic accounting in detecting and preventing fraud in financial institutions. Using a literature review and case study analysis, the study found that forensic accounting enhances fraud detection, reduces financial losses, and ensures regulatory compliance. It highlighted the role of emerging technologies, such as artificial intelligence and machine learning, in strengthening forensic accounting's effectiveness.

Oyedekun (2024) explored the impact of forensic accounting on financial reporting quality in Nigerian listed DMBs. The longitudinal research included 10 DMBs listed on the Nigerian Exchange Group as of December 31, 2022. The data which includes investigative accounting and litigation support services was examined by descriptive statistics and ordinary least squares regression. This study discovered that investigative accounting has a positive and significant effect on the financial reporting quality of listed DMBS in Nigeria. The study also discovered that litigation support services have a positive and significant effect on the financial reporting quality of listed DMBS in Nigeria. On overall result shows that forensic accounting has a negative and significant effect on the financial reporting quality of listed DMBS in Nigeria.

Akinadewo et al. (2024) conducted a longitudinal study on the impact of board qualifications on forensic accounting processes in publicly listed DMBs. The study used panel data regression analysis on data obtained from the financial statement of the DMBs. The study included fifteen DMBs listed on the Nigerian Exchange Group as of December 31, 2022. The results showed that board composition and skill significantly influence forensic accounting adoption, with board independence being positive but not statistically significant.

Almubaydeen et al. (2024) examined the effect of forensic accounting techniques on revealing income smoothing practices in Jordanian commercial banks. The study population consisted of all 13 Jordanian commercial banks listed on the Amman Stock Exchange from 2017 to 2021. The study used panel data regression analysis on data obtained from the financial statement of the banks. The study found that applying proportions analysis technique had a statistically significant effect on revealing income smoothing practices in Jordanian commercial banks.

Daas and Zaid (2024) examined the impact of reactive and proactive audit methods on the quality of accounting information, with corporate governance as a moderating variable. The study used panel data regression analysis on data obtained from the financial statement. The results indicated that reactive audit had a positive effect on all variables of the quality of accounting information, while proactive audit affected only the comparability feature.

Onuora, et al., (2022) in their study investigate the correlational relationship between accountability and forensic accounting in selected quoted firms in Nigeria. In order to achieve this objective, the study used correlational survey design where data were collected through questionnaire. The data analysis of the study used ‘Kendall's coefficient of concordance’, conducted at statistical significance of 1% level revealing substantial and positive correlations between quality financial reporting and forensic accounting. Also, the study indicates that forensic accounting has a significant and favourable associations with the fraudulent activities’ mitigation inside the selected corporations in Nigeria. The study therefore reaches the conclusion that forensic accounting plays an important role in the promotion of accountability within the listed firms in Nigeria.

In a similar perspective, Frankline, et al. (2022) conducted an investigation on the influence of forensic accounting on financial reporting processes. In order to achieve this objective, the study used panel data consisting of information on the ten highest-performing DMBs in Nigeria. The data was obtained from two sources which are the Central Bank's Annual Bulletin

and Nigerian Stock Exchange Fact-book. The fixed effect regression analysis model indicates statistical significance, revealing a substantial relationship between financial reporting and forensic accounting. Additionally, it is evident from the study that forensic accounting has a substantial and favourable influence on the financial reporting processes. The results of the correlational analysis of study indicates that some forensic accounting instruments have a positive relationship with financial reporting processes, while others show a negative significant relationship.

In the study of Onah and Ugwu (2022), a quantitative research design was used to obtain secondary sources of data on the financial performance of twenty (20) DMBs. In the study, the results of the fixed-effect (regression analysis) indicate that there is a significant positive impact of forensic accounting on the financial performance of DMBs in Nigeria. Also, the use of the fixed effect model reveals a statistically positive and significant correlation between forensic accounting tools used and the financial performance of DMBs. Subsequently, the study conducted a Pearson Correlation analysis, yielding findings that show a positive and statistically significant relationship between the use of tools (forensic accounting) and the financial performance of DMBs.

Similarly, Ibanichuka, et al., (2022) investigated the impact of forensic accounting on the financial reporting quality, with a focus on listed banks carrying out operating in Nigeria. The study used cross-sectional data that are obtained from audited financial or monetary reports of the banks and fact books published in the Nigeria Stock Exchange website between 2009 and 2018. The findings of the study showed that the practices of investigative accounting had a negative and detrimental effect on the quality of accruals. The findings also reveal that the use of investigative accounting tools had a detrimental impact also on the relevance of value of the banks.

From the literature reviewed, it is indicated that none of the studies focused on oil and gas companies in Nigeria despite the great importance this companies hold in terms revenue generation through tax. It is also observed that majority of the literatures utilized primary data which were gathered through questionnaire which often than not subjective and do not absolutely reveal a verifiable through picture of tax fraud and its relationship with forensic analysis. It is the following gaps in knowledge in terms of methodology and domain that this study seek to cover.

3. Methodology

Research Design

The research study used an explanatory study because the ultimate goal is to test the relationship that exists between forensic analysis and tax fraud prevention in oil and gas companies in Nigeria. Quantitative research design was adopted because this study involves the collection of data from a secondary source.

Sources of Data

In this study, the focus on oil companies that are listed in the NSE as the year ended 2021. The study purposively selected ten (10) oil companies operational in Nigeria for a period of ten years, that is, 2012-2021. The audited annual financial statement of the companies were sorted to source for the data required.

Method of Data Collection

This study collected data from financial statement of the oil and gas companies following the approach as stated in the variable measurement in Table 3.1.

The functional relationship between the forensic analysis (FAN) and tax fraud prevention (TFP) is shown in equation 1.

$$TFP = f(FAN) \quad \ldots\ldots\ldots\ldots 1$$

The model for this study functionally becomes as shown in equation 2

$$TFP = f(FA, FL) \quad \ldots\ldots 2$$

Based on the variables of this study, the econometric model specification is as presented in equation 3:

$$TFP_{it} = \alpha + \beta_1 FA_{it} + \beta_2 FL_{it} + e_{it} \quad \ldots\ldots\ldots\ldots (3)$$

Where: TFP = tax fraud prevention; FA = forensic audit; FL = forensic litigation; α = intercept; β_1 *and* β_2 = coefficient of FA and FL; e = error term; i = number of oil and gas companies (i = 10) and; t = number of years (t = 10 years)

The variables' measurement is as presented in the table 1 below:

Table 1: Variables and Measurement

Variable	Definitions	Measurement	Source
Dependent Variable	Tax fraud prevention	It is measured by the ratio of tax to gross profit	Dada & Audu (2021)
Independent Variables	Forensic audit	Binary measure: "1" if there is FA and "0" if otherwise	(Chepngeno & Fred, 2020)
	Forensic litigation	Binary measure: "1" if there is FL and "0" if otherwise	(Chepngeno & Fred, 2020)

Source: Researcher's computation (2026)

Based on the model specification, this study developed the following hypotheses to be tested:

H_{01}: Forensic audit has no significant positive effect on tax frauds prevention in oil companies in Nigeria

H_{02}: Forensic litigations has no significant positive effect on tax frauds prevention in oil companies in Nigeria

Population

The population of the study includes the entire oil and gas companies listed on the floor of the Nigerian Stock Exchange as at 31st December, 2014 that are still operational up till 31st December, 2024.

Sampling Techniques and sample size

This study used a purposive sampling technique to select from among the oil and gas companies listed on the Nigerian Stock Exchange. The sample size used in this study is ten (10). Therefore, this study selected 10 listed oil and gas companies in NSE Group using the purposive sampling technique.

Method of Data Analysis

In order to analyze the data for the study and to test the research hypotheses, the study made use of Eviews statistical software version 12. Descriptive statistics was used to summarize the data for the study into more meaningful form. Correlation and panel data multiple regression analysis was used for the analysis and to test the formulated hypotheses at 5% level of significance. The panel data regression methodology was chosen because of the cross-sectional and time series data used in this study.

4. Results and Discussion

Pre-estimation analysis of the data collected according to the identified variable measurement approached highlighted above were conducted which include: reliability, multicollinearity and autocorrelation. The reliability analysis using Cronbach Alpha shows a reliability of 38.0% which is high enough to establish the dependability of the findings of the research.

The data also shows no problem of multicollinearity, that is, non-existence of multicollinearity between the independent variables was confirmed when computing the variance inflation factors (VIFs) for each of the explanatory variables used in the study indicated values less than 10 as shown in Table 2.

Table 2: Collinearity Statistics

	1/VIF	VIF
	0.901	1.110
	0.881	1.135
Mean		1.123

Source: Researcher's compilation, 2026

Descriptive Analysis

The summary of the data was presented using descriptive statistics which include mean, standard deviation (std), minimum and maximum values as presented in Table 3.

Table 3: Summary Statistics

	Mean	Std. Dev.	Minimum	Maximum
TFR	0.1158	0.03879	0.07	0.21
FA	0.6000	0.49237	0.00	1.00
FL	0.3500	0.47937	0.00	1.00
Valid N	100			

Source: Researcher's compilation, 2026

The descriptive statistics of the data in table 3 shows the measure of central tendency and dispersion of the data used for the analysis. The TFR has an average value of 0.1158 and standard deviation of 0.03879, with this low variations around the mean is an indication that TFR values of the oil and gas companies in Nigeria has a high predictive power. also, FA has an average value of 0.6000 and standard deviation of 0.49237, with this low variations around the mean is an indication that FA values of the oil and gas companies in Nigeria has a high predictive power. Finally, FL has an average value of 0.3500 and standard deviation of 0.47937, with this high variations around the mean is an indication that FL values of the oil and gas companies in Nigeria has a low predictive power.

Correlation Analysis

The correlation analysis provides the relationship between the variables that are used in this study as show in Table 4.

Table 4: Correlations Analysis

	TFP	FA	FL
TFP	1.000		
FA	0.028	1.000	
	0.778		
FL	0.049	-0.770**	1.000
	0.628	0.000	

Source: Researcher's compilation, 2026

From Table 4, there is an insignificant positive relationship between TFP and FA (r = 0.028; p = 0.778); and TFP and FL (r = 0.049; p = 0.628). These results gives an indication that forensic analysis has insignificant positive association with tax fraud prevention in oil and gas companies in Nigeria.

In order to test the hypotheses of this study, the results were obtained from panel regression analysis. The result is presented in table 5:

Table 5: Panel Regression Results

Variables	coefficient	Std.err.	T	P-value	Decision
Constants	0.1031	0.0119	8.64	0.000	
FA	0.0128	0.0120	1.10	0.305	H_{01} = accepted
F	0.0141	0.0125	1.03	0.272	H_{02} = accepted
Adj. R^2	-0.007				
F-stat	2.650				
p-value	0.000				
R sq.	0.013				

Source: Researcher's compilation (2026)

The results of the panel regression model shown in table 4 indicate that the overall coefficient of determination (R^2 = 0.0132) which means that the predictor variables explained 1.32% of the variations in the outcome variable. This is an indication that there is a very weak relationship between the outcome variables, tax fraud prevention and predictor variables (forensic audit and forensic litigation) in the oil and gas companies in Nigeria. The value of (Adjusted R^2 = -0.0071) which implies that the study explanatory variables (forensic audit and forensic litigation) jointly explain the outcome variable (tax fraud prevention) by only 0.7%. The results further show that F= 2.65 and p-value = 0.000 which is less than 5% conventional level indicate that the overall model is statistically significant.

Discussion of Hypothesis One

H_{01}: Forensic audit has no significant positive effect on tax frauds prevention in oil companies in Nigeria

The result from table 4.4 shows that the coefficient of forensic audit has no significant effect on tax frauds prevention in oil companies in Nigeria. This is indicated by the p-value 0.305 which is greater than 0.05 significant level. The study therefore infers that forensic audit has positive but insignificant effect on tax frauds prevention in oil companies in Nigeria. Hence based on the above the study accepts the null hypothesis which states that forensic audit has no significant positive effect on tax frauds prevention in oil companies in Nigeria. This finding agrees with the findings of Adegbite, et al. (2019); Onah and Ugwu (2022); Ukoma and Azikiwe (2019) who also found that forensic investigation and accounting deters fraudulent activities in firms and organization that effectively deploy the techniques. However, the finding which depict insignificant relationship disagree with Dada and Audu (2021) that posit forensic analysis had a significant positive effect on tax fraud prevention. Also, Al-Sharairi (2018) indicated that forensic accounting emanated as a way of determining and investigating fraud related matters, inclusive of tax fraud and tax evasion.

Discussion of Hypothesis Two

H_{02}: Forensic litigations has no significant positive effect on tax frauds prevention in oil companies in Nigeria

The result from table 2 shows that the coefficient of forensic litigation has no significant effect on tax frauds prevention in oil companies in Nigeria. This is indicated by the p-value 0.272 which is greater than 0.05 significant level. The study therefore infers that forensic litigation has positive but insignificant effect on tax frauds prevention in oil companies in Nigeria. Hence based on the above the study accepts the null hypothesis which states that forensic litigation has no significant positive effect on tax frauds prevention in oil companies in Nigeria. This finding partially agrees with the findings

of Chepngeno and Fred (2020); Daas and Zaid (2024); Oyedekun (2024) that indicated a positive and direct linkage between the rendition of litigation support services and mitigation of frauds successfully among the entities. However, this study completely disagrees with the finding of Okoye and Ndah (2019); Vutumu (2024) that revealed a strong relationship between forensic accounting and fraud prevention in manufacturing companies in Nigeria.

5. Conclusion and Recommendations

This study that examined the effect of forensic analysis on tax fraud prevention in oil companies in Nigeria and concluded that forensic audit and forensic litigation have no statistical significant effect on tax frauds prevention in oil companies in Nigeria. However, the study clearly reveals that forensic analysis can positively influence tax fraud prevention eventhough it is not significant in the short-term.

Based on this conclusion, this study therefore recommends that: Firstly, there should be an improved regulatory oversight on the part of the government relevant agencies to ensure continued safeguard of government' interest. Secondly, this study recommends that the training of forensic authorities should be further strengthened so as to improve their proficiency in forensic analysis that will mitigate against tax fraud. Thirdly, this study also recommends the retention of the services of forensic accountants on a permanent basis as well as regular investigation and prosecution of fraudulent activities to deter future tax frauds. Finally, this study recommends the need to establish detailed guidelines and standards to strengthen the practices and adoptions of forensic analysis in the oil sector in Nigeria.

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Appendix

A. Companies selected for the study

Company	Year	Id	TR	FA	FL
Addax	2015	1	0.097753	0	1
Addax	2016	1	0.104636	0	1
Addax	2017	1	0.079655	0	1
Addax	2018	1	0.089174	1	0
Addax	2019	1	0.109378	1	0
Addax	2020	1	0.178377	1	0
Addax	2021	1	0.06718	1	0
Addax	2022	1	0.180283	1	0
Addax	2023	1	0.095617	0	1
Addax	2024	1	0.089762	0	0
Chevron	2015	2	0.083801	0	1
Chevron	2016	2	0.109676	0	1
Chevron	2017	2	0.092453	0	1
Chevron	2018	2	0.089078	1	0
Chevron	2019	2	0.108976	1	0
Chevron	2020	2	0.083575	1	0
Chevron	2021	2	0.099467	1	0
Chevron	2022	2	0.10765	1	1
Chevron	2023	2	0.095679	0	0
Chevron	2024	2	0.089632	0	0
Equinor	2015	3	0.097165	0	1
Equinor	2016	3	0.083458	0	1
Equinor	2017	3	0.094569	0	1
Equinor	2018	3	0.080562	1	0
Equinor	2019	3	0.094568	1	0
Equinor	2020	3	0.107654	1	0
Equinor	2021	3	0.119765	1	0
Equinor	2022	3	0.164256	1	0
Equinor	2023	3	0.198983	0	1
Equinor	2024	3	0.157867	0	0
ExxonMobil	2015	4	0.109777	0	1
ExxonMobil	2016	4	0.095446	0	1
ExxonMobil	2017	4	0.107896	0	1
ExxonMobil	2018	4	0.108964	1	0
ExxonMobil	2019	4	0.095678	1	0
ExxonMobil	2020	4	0.095751	1	0

ExxonMobil	2021	4	0.105423	1	0
ExxonMobil	2022	4	0.109997	1	0
ExxonMobil	2023	4	0.098437	1	0
ExxonMobil	2024	4	0.09479	1	0
Nexen	2015	5	0.105789	0	1
Nexen	2016	5	0.098429	0	1
Nexen	2017	5	0.078936	0	1
Nexen	2018	5	0.169754	1	1
Nexen	2019	5	0.128827	1	0
Nexen	2020	5	0.208767	1	0
Nexen	2021	5	0.17865	1	0
Nexen	2022	5	0.09725	1	0
Nexen	2023	5	0.089354	0	0
Nexen	2024	5	0.091846	0	1
NAOC	2015	6	0.128635	0	1
NAOC	2016	6	0.102228	0	1
NAOC	2017	6	0.096643	0	1
NAOC	2018	6	0.179971	1	0
NAOC	2019	6	0.091428	1	0
NAOC	2020	6	0.100922	1	0
NAOC	2021	6	0.099876	1	0
NAOC	2022	6	0.08976	1	0
NAOC	2023	6	0.090075	1	0
NAOC	2024	6	0.087976	0	1
NNPC	2015	7	0.094576	1	0
NNPC	2016	7	0.097288	1	0
NNPC	2017	7	0.162839	1	0
NNPC	2018	7	0.136728	1	0
NNPC	2019	7	0.092837	1	0
NNPC	2020	7	0.19389	1	0
NNPC	2021	7	0.119378	1	0
NNPC	2022	7	0.107382	1	0
NNPC	2023	7	0.110896	0	0
NNPC	2024	7	0.100891	0	1
Petrobas	2015	8	0.099675	0	1
Petrobas	2016	8	0.089281	0	1
Petrobas	2017	8	0.130991	0	1
Petrobas	2018	8	0.096453	1	0
Petrobas	2019	8	0.077888	1	0

Petrobas	2020	8	0.096634	1	0
Petrobas	2021	8	0.107891	1	0
Petrobas	2022	8	0.092781	1	0
Petrobas	2023	8	0.189276	0	1
Petrobas	2024	8	0.198276	0	1
Shell	2015	9	0.206083	0	1
Shell	2016	9	0.209173	0	1
Shell	2017	9	0.211074	0	1
Shell	2018	9	0.092453	1	0
Shell	2019	9	0.089078	1	0
Shell	2020	9	0.108976	1	0
Shell	2021	9	0.083575	1	0
Shell	2022	9	0.099467	1	0
Shell	2023	9	0.10765	1	1
Shell	2024	9	0.095679	1	0
Total energies	2015	10	0.089632	0	0
Total energies	2016	10	0.097165	0	0
Total energies	2017	10	0.083458	0	1
Total energies	2018	10	0.094569	1	0
Total energies	2019	10	0.130991	1	0
Total energies	2020	10	0.096453	1	0
Total energies	2021	10	0.077888	1	0
Total energies	2022	10	0.206083	1	0
Total energies	2023	10	0.209173	1	0
Total energies	2024	10	0.211074	1	0