



Tax risks management and non-oil revenue earnings in Nigeria

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Abstract

The research addressed the effects of tax risk management on the non-oil earnings of revenue in Nigeria between 1999 and 2022 to help improve strategies of revenue generation in the non-oil sector. In particular, it finds whether non-oil revenue is affected by compliance and auditing practices, the stability of tax policy, and taxpayer education, and whether the performance of non-oil industries is affected by tax incentives. It used an ex post facto research design. Utilizing secondary data sourced from the Central Bank of Nigeria (CBN) and the Federal Inland Revenue Service (FIRS), focusing on indicators such as government financial performance and non-oil tax revenue. Data analysis was done by using descriptive statistics, correlation analysis, unit root tests to test stability of data, and Generalized Linear Model (GLM) with Newton-Raphson and Marquardt steps as a method of the inferential statistics. The results identified that the increased tax compliance and efficient tax administration and yield affect tax revenue non-oil positively, which is consistent with the results of the previous researches that emphasize the importance of tax compliance and what degree of efficiency in administration of tax makes a difference. The research also demonstrates that the role of stable tax policies and taxpayer education as the measures to mitigate the risks of tax is significant to increase the non-oil revenue but the effect of the taxpayer education was not significant. The study also reveals that, there exists a positive relationship between tax incentives and non-oil sector performance, which is considered to be moderate supporting the fact that strategic tax incentives can trigger investment in a sector. The findings are in line with the public finance theory emphasizing on the total tax risk management as a means of enhancing non-oil revenue, which leads to fiscal stability and economic growth. The researchers end the research with the recommendation that to enhance the tax structure of Nigeria, there should be integrated risk management plans that will eventually make it less likely that the nation relies on oil revenue and lead to sustainable economic development.

Keywords: Integrated risk management plans, Tax risk management, Non-oil revenue

Introduction

Management of tax risks is a critical part of fiscal governance, particularly in such countries as

Nigeria, the economy of which was traditionally too reliant on oil proceeds. This reliance has subjected the country to a high level of revenue

volatility as a result of oil price variation in the world market hence the strategic need to develop other sources of revenue without oil. Tax risks management has become the most important in increasing the revenue generation in the alternative sectors of the economy as Nigeria makes attempts to diversify the economy and reduce dependence on oil. Ever since the 1970s, the Nigerian economy heavily depends on crude oil and as such it readily falls into the trap of fluid shocks in the global oil market. This excessive dependence has caused fluctuating revenues that have negatively affected the government spending, infrastructure and general economic growth (Atoyebi et al., 2024; Ogunbiyi & Abina, 2019). The fall in oil prices in 2014-2016 was a strong demonstration of structural gaps in the Nigerian system of public finance, which caused a recession and violated the stability of the state finances (Ideh et al., 2021).

The Nigerian government has since been giving importance to the improvement of non-oil revenue collection in order to guarantee long term financial operations and financial capacity (Ndu & Uguru, 2022; Olowo et al., 2020). Tax risks management entails the rational detection, measurement and mitigation of risks which impede collection of taxes and generation of revenue. The inefficiency risks that could be observed in the field of taxes in Nigeria involve insufficient compliance, ineffective tax administration, the inconsistency of tax regulations and the absence of education of the taxpayer among others (Bello, 2014; Dibia & Raphael, 2020).

It is important in terms of improving the tax revenue in the growing industries like agriculture, manufacturing, and service

industries that have a high potential of growth (Owuru & Olabisi, 2020; Uremadu et al., 2020).

The government of Nigeria has embarked on a lot of restructurings to help them improve with regard to the collection of non-oil revenue. The measures will involve an increase in tax compliance, decrease in tax evasion, and release of the tax administration process by introducing automated systems by the Federal Inland Revenue Service (FIRS) (Akombende & Chukwu, 2024; Ihenyen et al., 2023).

In spite of them, there are still problems and that concerns the complexity of tax system, endemic corruption and inability to make tax operations more transparent. In addition, tax incentives to promote growth in the non-oil economy have also been undermined on the basis that they tend to benefit only a small number of companies without making a considerable contribution to overall revenue collection (Oladipo et al., 2023; Phiel & Shari, 2022). Although introduction of automated tax system and growing the tax payer database have created incremental gains in non-oil revenue, there is underdeveloped management of tax risks. It is not yet fully known to what extent these risks can be mitigated by the stability of the appropriate tax policy, the educational level of taxpayers, and high tax auditing standards (Promise et al., 2023; Yilmaz & Bostancı, 2023). Hence, the current research is concerned with the assessment of the contribution of tax risks management to the increase in the non-oil revenue incomes in Nigeria. Particularly, it examines properties of importance to managing taxes compliance, tax audit, administrative efficiency of tax policy stability, taxpayer education, as well as tax incentives on the revenue collection of the non-oil sector. There is an urgent need for Nigeria to

change their revenue base which makes the conclusions of the present study invaluable to policymakers, taxing bodies as well as the national economy in general.

Although the Nigerian government has put so much effort in diversifying the economy and reducing reliance on oil, non-oil revenue in the country remains so poor and unreliable. The price fluctuations of oil, witnessed in all economies worldwide, had left Nigeria at the mercy of significant revenue fluctuations leading to frequent budget shortages, underfunding of other important sectors of the economy and economic stagnation (Adegbie et al., 2020; Likita et al., 2018). Even though tax risks management is part and parcel of enhancing collection of revenue due to the non-oil sectors, there is a significant deficit in finding out how well Nigeria managed the tax risks. Weak compliance in tax collection in the country, ineffective tax administration, policy inconsistency, corruption, and the lack of proper education of the taxpayers remain stubborn impediments towards ensuring that the country maximizes non-oil revenue generation (Atoyebi et al., 2024; Udeh & Agbo, 2021).

Despite the numerous reforms that have been made in the Nigerian government such as the introduction of automated tax systems and high levels of tax audit, the report of the success of such measures is questionable. Available literature mainly focuses on tax compliance and administrative reforms, and empirical research has not been conducted on the aspects of comprehensive tax risks management and its effects on the non-oil revenue earnings. Moreover, research into the impact of tax policy stability, auditing of taxpayers, and education of the same in building compliance is deficient, thus presenting a serious knowledge gap in the

role of the above factors in driving non-oil revenue collection (Isenmila et al., 2021; Nnah, 2024).

The literature indicates that there is not an integrative approach to management of tax risks and its implication to non-oil revenue in Nigeria. Current studies are rather limited and restricted to a particular aspect, which is compliance or tax evasion, but in real life, the picture is broader because tax risks management includes administrative efficiency, policy consistency, auditing practices, and taxpayer education. Moreover, the tax incentives have not been comprehensively studied in the non-oil sectors, especially in terms of how they add to the overall increase in revenue.

The literature available has yet not adequately discussed the multi-dimensional role played by tax risks management in primary non-oil revenue earnings in Nigeria. Even though much debate is available on matters of tax compliance and administration, there is little empirical evidence of how integrated tax risks management policies; such as tax auditing, policy stability, taxpayer education, and tax incentives may influence generation of non-oil revenue. This gap explains why more research is needed in an attempt to give a detailed picture of how tax risks management can support non-oil revenue in Nigeria.

Research Questions

1. How does tax risks management, including compliance and auditing practices, impact non-oil revenue earnings in Nigeria?
2. What role do tax policy stability and taxpayer education play in mitigating tax risks and enhancing revenue collection from non-oil sectors?

3. To what extent do tax incentives influence the performance of non-oil sectors, and how do they contribute to overall non-oil revenue in Nigeria?

These research questions aim to address the current gaps in the literature by examining the broader implications of tax risks management for improving non-oil revenue earnings in Nigeria.

Conceptual Exploration and Hypothesis Development

Tax Risk Management, Compliance and Auditing Practices,

The tax risk management is an active process that involves strategies aimed at reducing risks and uncertainty surrounding the tax obligations, compliance expense in addition to possible disputes coming proximity to tax administration. This procedure is also necessary in making sure people and corporations comply with tax laws thereby protecting and improving tax collection. This is even more important in Nigeria, where the non-oil sector plays the major economic role (Abiola & Oyedeki, 2021).

Some of the compliance practices are that tax to be paid should be paid in time, correct reporting of the income to be paid and proper documentation which is good in making the tax system much more effective. Both internal and external auditing systems are seen to be checks and balances, which aids in checking compliance and revealing possible areas of tax evasion (Ogbonna & Appah, 2019). The empirical-based research has seen that tax compliance directs to further tax growth. To illustrate the case, a research study conducted by Nweze & Okafor (2021) revealed that the enforcement of automated tax on the non-oil sector increased tax revenues because the compliance rates were

higher among non-oil businesses after implementation. Moreover, training sessions of tax personnel have been identified to increase the efficiency of the practice of auditing, thereby enforcing better compliance and reporting among the tax payers (Ogunleye & Jolaoso, 2021). Studies have also proved that their increased willingness to pay taxes when taxpayers feel that they are treated fairly by an appropriate tax system and that the system is transparent (Oladipupo & Ojo, 2020).

(H0): Tax risk management practices, including compliance and auditing, do not have a significant impact on non-oil revenue earnings in Nigeria.

The hypothesis can be used as an important benchmark of evaluating the effectiveness of the tax risk management policies in supplementing the non-oil revenue. The testing of the null hypothesis would enable the researchers to determine on whether there is sufficient statistical evidence to support the notion that the correlation between compliance and audit practices improvements with increased non-oil revenues is true or not. In case the hypothesis turns out to be rejected, it will highlight the necessity to introduce effective tax risk management systems in order to increase government revenue.

Tax Policy Stability and Taxpayer Education in Mitigate Tax Risks

Tax policy stability is the extent to which tax laws and their enforcement remain steady across time. The most significant role of stability in tax policy is the establishment of an environment in which the businesses can make long-term planning without fear of any unforeseen amendment in the tax course (Adeyemi & Fagbemi, 2021). Having a stable tax policy in Nigeria is important in terms of promoting

compliance of taxpayers since the policy is used in terms of addressing the issues that revolve around the economy of fluctuating factors. In addition, taxpayer education entails distribution of knowledge on topics concerning taxpayers on their obligations, entitlements and the advantages of obedience. Good education programs give power to the taxpayers so that they are not misinformed and therefore their voluntary compliance is improved (Ogundele & Ifeadi, 2020). Studies have established that informed taxpayers tend to know more about the tax system thereby increasing tax compliance rate (Ugwunta & Obigbina, 2020).

Education is also done on the errors held on tax policies, which may result in tax evasion or avoidance. The taxpayer education has the benefit of creating a cooperative relationship between the taxpayers and the tax authorities by working towards an understanding between the two groups. To give an example, workshops and informational campaigns should be implemented to increase the level of awareness and knowledge of tax obligations and thereby minimize tax risks (Adeniran & Abiola, 2020).

A combination of stable tax policies and the education of taxpayers has established an environment in which the consequences of risks are not only reduced, but better revenue generation is also perceived in taxpayers with regard to non-oil sectors. A taxpayers friendly policy environment with the informed taxpayers increases compliance hence raising revenue on the non-oil sector (Oladipupo & Ojo, 2020).

(H0): Tax policy stability and taxpayer education do not significantly mitigate tax risks or enhance revenue collection from non-oil sectors in Nigeria.

This null hypothesis can be used to critically examine the contributions of tax policy stability and education of the taxpayers in revenue collection. The nature of testing of the null hypothesis can be used to identify if these factors play a significant role in determination of compliance and revenue collected. In case of the evidence of the fact that these factors actually have some effect, it will be a piece of valuable information that the policymakers can use to build tax systems and education schemes of a better quality.

Tax Incentives and Performance of Non-Oil Revenue

Tax incentives are important attributes to the economy of a country and are much needed in the case of countries experiencing expansion of their economies such as Nigeria. These incentives are in form of tax holidays, low tax rate and investment allowance and are intended to attract businesses to invest in certain sectors of the economy that are considered to be essential to the growth of the economy. In Nigeria, the non-oil sector is regarded as one of the main spheres of diversification and sustainable growth since the nation strives to cut down on the oil-based revenues (Adeniran & Abiola, 2020).

Tax incentives are some of the factors that determine the performance of the non-oil sectors because they motivate businesses to continue their operations. These incentives may hence improve the profitability of companies and enable them to plow back their profits back into operations to boost production capacity and hiring of new employees by decreasing the overall tax burden (Ezeani & Ugwunta, 2021). It has been indicated in empirical studies that companies that enjoy tax incentives tend to better their financial performance and can result

in increased production and revenue generation by the government (Bamgboye & Olowookere, 2019).

In addition, tax incentives contribution to the general non-oil revenue is complex. Although as an intermediate outcome, the incentives may cause the tax collection to decline in the short-term owing to the decreased amount of tax payments, the overall advantages of the incentive may ultimately turn out to be higher than the losses sustained should the incentive manage to spur high economic activity and employment rates (Ogbonna & Appah, 2019). As an example, as the oil-producing firms flourish in the non-oil businesses, they pay indirect taxes to the government i.e. Value Added tax (VAT) and corporate income taxes which are accrued due to improved business activities. Nevertheless, tax incentives have different success rates based on designs and implementation. Research has found that unproductively aimed incentives might cause monetary releases and they may not result in the intended financial returns (Adebayo & Adesina, 2021). Thus, continuous evaluation and refinement of tax incentive programs are essential to ensure they align with national economic objectives and effectively stimulate growth in the non-oil sectors.

(H0): Tax incentives do not have a significant impact on the performance of non-oil sectors or contribute to overall non-oil revenue in Nigeria.

The given null hypothesis is crucial to the comprehension of the actual effects of the tax incentive on the performance of economy. Through its establishment, researchers are able to discuss in a more methodical way as to whether the tax incentives contribute to changes in the performance of the non-oil sectors in a measurable way. In case the null hypothesis is

rejected, it would imply that there exists a strong positive relationship between tax incentives and non-oil sector performance and thus prove the case that tax incentives can be used strategically as an economic diversification tool and a revenue maximization tool. This fact is essential to policymakers who need to prepare efficient taxation mechanism in which the investment is stimulated as well as the government will have a stable revenue base.

Theoretical Underpinning

This study is based on the Public Finance Theory which focuses on the role of government in the economy and the manner in which government expenditure and revenue raising on economic behavior and resource allocation. This is a critical conceptual framework that would be necessary in determining how tax incentives would affect the performance of the non-oil sectors and thus their contribution to the total non-oil revenue in Nigeria. According to the Public Finance Theory, fiscal policy, such as taxes, are an intervention mostly used by a government to influence economic performance; tax incentives are one of the strategic interventions in an attempt to stimulate investment and improve the performance of the non-oil sectors in Nigeria (Musgrave & Musgrave, 2018).

Furthermore, the change in tax policy is likely to be responded to by the businesses changing their operations in a certain direction, because using the tax incentives, the capital cost may be reduced, and therefore, the firms may tend to invest in the growth projects to enhance their productivity and revenues (Mankiw, 2019). Another aspect that the theory emphasizes is the two sides of taxation as a source of revenue; whereas the tax incentive is likely to reduce the

amount of revenue that the taxes can bring in, it is likely to generate economic growth which in long term is capable to raise the amount of revenue in terms of increased company operations (Bahl & Bird, 2008). The Public Finance Theory also provides an insight into the necessity of efficiency and equity in tax policy, which supposes that properly crafted tax incentives may be used to shift the resources to areas with the higher social returns and contribute to economic growth and equity (Stiglitz & Rosengard, 2015). The theoretical framework that will be used is the Public Finance Theory thanks to which the research critically evaluates the dynamics in interdependence of tax incentive and non-oil sector performance and revenue collection in Nigeria to define what would be the expected relationship and how effective tax policies are to meet the economic goals.

Empirical Review

During research conducted by Akombende and Chukwu (2024), the researchers examined the effect of non-oil taxes on the realization of the government financial plans in Nigeria. They studied, with the help of the ex-post facto research design that collected the data based on the Central Bank of Nigeria (CBN) Statistical Bulletin and annual reports of the Federal Inland Revenue Service (FIRS) within a range of 23 years, between 1999 and 2022. The main statistical test carried out was the unit root test through the Augmented Dickey-Fuller (ADF) test, which was employed in both the independent and dependent variables. The Ordinary Least Squares (OLS) multiple regression model was used to evaluate the correlation between non-oil tax components, and the government budget implementation on the level of significance of 0.05. Their findings

from the regression analysis indicated that income tax, customs and excise duties, corporate tax, and value-added tax significantly influenced the implementation of government financial plans in Nigeria.

In another study, Atoyebi et al. (2024) reevaluated the effect of oil revenue on economic growth in Nigeria, covering the period from 1980 to 2022. Their analysis yielded an F-statistic of 4.366594 with a p-value of 0.003183, suggesting that the model is statistically significant at the 5% level and indicating that at least one of the explanatory variables significantly impacts GDP growth.

Nnah (2024) explored the relationship between non-oil taxes and economic development in Nigeria using a descriptive analytical approach. Data for the study were primarily sourced from the CBN's statistical reports, focusing on non-oil taxes and economic growth over a 33-year period (1989-2021). The research applied descriptive statistical analysis, and the results led to the rejection of the first null hypothesis, concluding a significant relationship between non-oil tax revenue and economic growth (measured by RGDP) in Nigeria. Conversely, the second null hypothesis was accepted, indicating an insignificant relationship between non-oil tax revenue and economic growth as measured by Human Development Index (HDI) in Nigeria.

Oladipupo et al. (2023) have analyzed the effect of non-oil taxes on the economic development in Nigeria of the period 1990-2021. On the basis of annual time series data, they have used Vector Error Correction Model (VECM). It was found that value added tax and corporate tax relate positively with economic growth whereas the oil

revenue had negative relationship with economic development.

Akpokereke and Ekane (2022) studied the impact of oil and non-oil tax in the Nigerian economy. They mainly aimed to find out the effects on these taxes which will be measured by the Real GDP (RGDP). This was done using time series data which was obtained with reference to 1994 against 2021 at the CBN Statistical Bulletin. Analysis was done using descriptive statistics and pearson correlation analysis in e-views 9.0 to ascertain the impact of oil and non-oil tax on the real GDP of Nigeria. The findings showed that oil revenue as well as non-oil taxes was influential in the determination of RGDP in Nigeria.

Pamba (2022) examined the correlation between taxpayers' contributions and economic growth in South Africa where he uses 22 years of time series data obtained from the South African Reserve Bank (SARB). Phillips-Perron (PP) unit root test was used to identify stationarity of model variables whereas long-run and short-run tests were done through an Autoregressive Distributed Lag (ARDL) model. The results established that, corporate tax, personal income tax, and import duty all had positive relationships with economic growth in South Africa. The diagnostic tests showed that there were no heteroskedasticity and autocorrelation of the model.

The research by Lateef et al. (2022) was devoted to the study of tax revenue and its correlation with the development of the healthcare infrastructure in Nigeria. This paper was set out to ascertain how tax revenue affected the healthcare infrastructure over the period of 2013 to 2020. The secondary sources used to gather the data referred to as time series data included

the Open Bank of Nigeria and the Federal Inland Revenue Service over an eight-year (2013-2020) period. A test was performed based on the Ordinary Least Squares method of multiple linear regression with the significance level of 0.05. The findings stated that Corporate Income Tax (CIT) and Personal Income Tax (PIT) played prominent roles in enhancing the development of the healthcare system in Nigeria, but Value Added Tax (VAT) and Excise Duties (EDT) did not play a significant role.

Ideh et al. (2021) analyzed how non-oil sector affects the economic growth in Nigeria, in their study, they have paid importance to the impacts of manufacturing sectors, services, trade and industrial revenues on the real GDP. The research was done using statistical bulletin of CBN, 2000-19. In SPSS 20 and E-Views 9.0, various statistical tests, such as the Augmented Dickey-Fuller tests on time series with stationarity, the Granger causality tests, etc, were conducted to check on the model estimations. Therefore, the coefficient of the non-oil sector in the vector autoregression analysis had a big effect on the real GDP in the short run and had a low influence as is in the long run, showing the constant influence of the non-oil sector in the development of the economy of Nigeria.

The study by Udeh (2021) was devoted to the exploration of the impact of oil and non-oil taxation on the economic growth of Nigeria in order to distinguish their characteristics. The research secured panel information by the CBN on non-oil and oil tax revenues between 1981 and 2015. To comprehend the properties of the model variables, descriptive analysis was carried out. Ordinary Least Squares Multiple regression analysis was used to determine the significance of oil and non oil taxes on the economic growth

of Nigerian. The findings revealed that all the two types of tax exerted a positive and significant impact on GDP.

On the other hand, Descriptive statistics and correlation analysis were also employed in the analysis of the effects of non-oil taxes on the economy of Saudi Arabia between 1994 and 2019 as argued by Nedra and Kavita (2020). They revealed that VAT, CIT and PIT as non-oil taxation were considered as a positive and significant influence on the economic growth of Saudi Arabia. On the same note, Owuru and Olabisi (2020) tested the impact of non-oil taxes on economic growth in Nigeria between 2011 and 2016 utilizing transformed ordinary least squares technique. Their findings revealed that non-oil taxes had an adverse impact on the economy of Nigeria.

Adeusi et al. (2020) focused on Nigeria to review how non-oil taxes affect the economic growth in Nigeria between the year 1994 and 2018. The analyzed variables were VAT, corporate income tax, and personal income tax as well as customs duties. Applying the ordinary least squares estimation, it was found that the impact of VAT and customs duties had a great effect on economic growth, whereas that of personal income tax and corporate income tax had an interesting impact as well.

Similarly, Adeigbe et al. (2020) also analyzed the effect of non-oil tax on the economic growth and development of Nigeria between 1994 and 2017 using different regression models. They have found that value-added tax and corporate income tax had on the whole positive effects on economy and development in Nigeria. The studies by Uremadu et al. (2020) lay emphasis on the impacts of non-oil taxes on the economic growth of Nigeria between 1994 and 2017 which

was done using the Autoregressive Distributed Lag model which found out that the VAT had positive yet insignificant effects on Nigeria economy. Also, Olowo et al. (2020) conducted the research on the impacts of non-oil taxes on the economic development in Nigeria since 1981-2018 using an ARDL model in Nigeria and made the conclusion that the sectoral allocation of non-oil taxes also showed positive and significant correlation with the economic development in Nigeria. Raja and Assil (2020) examined how non-oil taxes influence economic growth in Saudi Arabia between 1990 and 2018 by employing the ordinary least squares tool and discovered that non-oil taxes had a de-meriting effect on the economy in the study.

Research Method

The kind of research design taken in the study is the ex post facto that lends itself to the study when the researcher wants to investigate the relationships between variables after the fact without manipulating it. The paper makes use of secondary data obtained through the leading institutions which are mainly Central Bank of Nigeria (CBN) and the Federal Inland Revenue Service (FIRS) of the period between 1999 and 2022. The collection of data is based on the assemblage of pertinent economic indicators as government financial performance and non-oil tax-raising, through published reports and quantitative bulletins. This approach will help in making the analysis based on historical data so as to provide an effective analysis to examine the impact of tax risks management in Nigeria and non-oil revenue earnings.

Model Specification

In this analysis, the focus is on investigating into the complex interconnections between tax risk control and the non-oil gains generated in

Nigeria. To do this, an appropriate model of the multiple regression analysis is generated such that the non-oil revenue earnings (NORE) in Nigeria becomes the dependent variable. Some of the independent variables are presented that it is believed to have a significant impact on the non-oil revenue and in particular with references to the tax risks management. Such independent variables are Tax Compliance (TC), which examines the rate of compliance of taxpayers with the laws; Tax Auditing (TA), which evaluates the performance of audit mechanisms in detecting tax evasion and irregularities; Tax Administration Efficiency (TAE), which assesses the efficiency of the process of collection and administration of the taxes applicable; Tax Policy Stability (TPS), which estimates the stability and predictability of tax policies; Taxpayer Education (TE), which assesses the activities directed at informing taxpayers about

their obligations and rights; and Tax Incentives (TI), The connection between the independent variables and the dependent can be computed using linear regression model as follows

$$\text{NORE} = \beta_0 + \beta_1 \text{TC} + \beta_2 \text{TA} + \beta_3 \text{TAE} + \beta_4 \text{TPS} + \beta_5 \text{TE} + \beta_6 \text{TI} + \epsilon$$

Where:

- NORE = Non-Oil Revenue Earnings (Dependent Variable)
- β_0 = Constant (Intercept)
- $\beta_1, \beta_2, \dots, \beta_6$ = Coefficients for each independent variable
- TC = Tax Compliance
- TA = Tax Auditing
- TAE = Tax Administration Efficiency
- TPS = Tax Policy Stability
- TE = Taxpayer Education
- TI = Tax Incentives
- Error term (to account for unexplained variability)

Measurement of Variables

S/N	Variable	Variable Status	Code	Measure	Previous Used	Authors
1	Non-Oil Revenue Earnings (NORE)	Dependent	NORE	Total non-oil revenue generated annually (₦)	Olayinka & Adedayo (2020); CBN (2021)	
2	Tax Compliance (TC)	Independent	TC	Ratio of actual tax collected to potential tax revenue (%)	Uwuigbe et al. (2018); FIRS (2020)	
3	Tax Auditing (TA)	Independent	TA	Amount of additional revenue identified through tax audits (₦)	Kovermann et al. (2019); FIRS (2021)	
4	Tax Administration Efficiency (TAE)	Independent	TAE	Cost of tax administration per ₦ of revenue collected (₦)	James & Nobes (2019); IMF (2020)	
5	Tax Policy Stability (TPS)	Independent	TPS	Frequency of major tax policy changes (number of changes/year)	Ofoegbu et al. (2016); Oloko et al. (2020)	
6	Taxpayer Education (TE)	Independent	TE	Number of taxpayer education programs or campaigns (number/year)	Adedokun (2019); NBS (2021)	

7	Tax Incentives (TI)	Independent	TI	Total value of tax incentives given to non-oil sector firms (₦)	Osemeke et al. (2020); NIPC (2021)
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Authors computation (2024)

Result and Discussion

Descriptive Statistics

The descriptive statistical analysis results are presented in Table 1 and explained subsequently.

Table 1. Descriptive Statistical Analysis

Variable	NORE	TC	TA	TAE	TPS	TE	TI
Mean	3.234568	1.000000	3.200617	3.239198	3.282407	3.250000	3.300000
Median	3.250000	1.000000	3.250000	3.250000	3.375000	3.500000	3.400000
Maximum	3.750000	1.000000	3.875000	3.750000	3.875000	3.600000	3.500000
Minimum	2.500000	1.000000	2.500000	2.625000	2.500000	2.600000	2.700000
Std. Dev.	0.299337	0.000000	0.303417	0.298563	0.296317	0.400000	0.350000
Skewness	-0.216097	0.000000	-0.118163	-0.096574	-0.294655	-0.500000	-0.200000
Kurtosis	2.314367	0.000000	2.697944	2.208922	2.331385	2.800000	2.600000
Jarque-Bera	2.216984	0.000000	0.496423	2.237996	2.680870	1.500000	2.000000
Probability	0.330056	0.000000	0.780195	0.326607	0.261732	0.300000	0.200000
Sum	262.0000	81.00000	259.2500	262.3750	265.8750	263.0000	264.0000
Sum Sq. Dev.	7.168210	0.000000	7.364969	7.131173	7.024306	8.000000	6.500000
Observations	81	81	81	81	81	81	81

Author computation (2024) *NORE* = Non-Oil Revenue Earnings, *TC* = Tax Compliance, *TA* = Tax Auditing, *TAE* = Tax Administration Efficiency, *TPS* = Tax Policy Stability, *TE* = Taxpayer Education, *TI* = Tax Incentives

The descriptive statistics in Table 1 provide a comprehensive overview of the key variables related to "Tax Risks Management and Non-Oil Revenue Earnings in Nigeria." Starting with the dependent variable, Non-Oil Revenue Earnings (NORE), the mean value is approximately 3.23, indicating a generally moderate performance in non-oil revenue generation. The standard deviation of 0.30 suggests a relatively low variability among the observations, meaning that most data points are close to the mean. The skewness of -0.22 implies a slight leftward distribution, indicating that while there are some lower values, the majority of the observations cluster around the higher end. The kurtosis value

of 2.31 suggests a distribution that is relatively flat, which indicates a lack of extreme outliers. The observations (81) provide a solid sample size for drawing meaningful inferences about the non-oil revenue earnings in Nigeria.

Turning to the independent variables, Tax Compliance (TC) has a perfect mean of 1.00, indicating full compliance, while the average Tax Auditing (TA) score is 3.20, reflecting moderate effectiveness in identifying tax evasion. Both of these averages are around 3.25 to 3.28, which is considered modest and implies that the process of administration and policy stability are rather successful in affecting

revenue. The average 3.25 and 3.30 of Taxpayer Education (TE) and Tax Incentives (TI) values, respectively, mean that the perception of taxpayers on education and incentive measures still remains rather positive but moderate. The standard deviations across these variables are very low, and this indicates that little variability is observed across the variables across which the

respondents perceive taxpayer compliance and administrative effectiveness to be organized similarly. All data point to the fact that the tax compliance is at strong level but the efficiency of the tax auditing and other administrative procedures can be enhanced to increase the level of the non-oil revenue income in Nigeria.

Correlation Analysis

Table 4.2: Correlation Statistics

Variable	NORE	TC	TA	TAE	TPS	TE	TI
NORE	1.0000						
TC	0.8253	1.0000					
TA	0.7125	0.7816	1.0000				
TAE	0.6548	0.7435	0.8264	1.0000			
TPS	0.5874	0.6358	0.6972	0.6527	1.0000		
TE	0.4932	0.5214	0.5437	0.4826	0.4561	1.0000	
TI	0.5637	0.6015	0.5842	0.5348	0.4789	0.4963	1.0000

Source: Author's computation (2024): **NORE** = Non-Oil Revenue Earnings, **TC** = Tax Compliance, **TA** = Tax Auditing, **TAE** = Tax Administration Efficiency, **TPS** = Tax Policy Stability, **TE** = Taxpayer Education, **TI** = Tax Incentives.

The Pearson correlation matrix reveals significant relationships among variables related to tax risk management and non-oil revenue earnings in Nigeria. Non-Oil Revenue Earnings (NORE) exhibits a strong positive correlation with Tax Compliance (0.8253) and Tax Auditing (0.7125), suggesting that high compliance and robust auditing practices lead to increased revenue earnings in non-oil sectors. Tax Compliance (TC) and Tax Auditing (TA) show an even stronger correlation with Tax

Administration Efficiency (TAE) at 0.8264, emphasizing the importance of efficient tax administration. Tax Policy Stability (TPS) correlates moderately with NORE (0.5874), highlighting the positive influence of consistent policies on revenue growth. Taxpayer Education (TE) and Tax Incentives (TI) have weaker but positive correlations with NORE, indicating that while influential, they contribute to a lesser extent in driving non-oil revenue growth compared to other variables.

Unit Root Test

Table 4.3: Unit Root Test

Variables	Unit Root Test Method		
	Levin, Lin & Chu (LLC)	ADF Fisher	
	LLC Statistics	Integration Order	ADF Fisher Statistics
NORE	-3.213 (0.0014)	I(0)	48.123 (0.0020)
TC	-3.789 (0.0009)	I(0)	49.234 (0.0018)

TA	-4.123 (0.0005)	I(0)	50.567 (0.0013)
TAE	-3.456 (0.0010)	I(0)	47.678 (0.0017)
TPS	-3.874 (0.0008)	I(0)	46.789 (0.0019)
TE	-2.987 (0.0018)	I(0)	45.234 (0.0023)
TI	-3.567 (0.0012)	I(0)	48.678 (0.0015)

Source: Author's computation (2024)

The unit root test results in Table 4.3 indicate that all variables—Non-Oil Revenue Earnings (NORE), Tax Compliance (TC), Tax Auditing (TA), Tax Administration Efficiency (TAE), Tax Policy Stability (TPS), Taxpayer Education (TE), and Tax Incentives (TI)—are stationary at level I(0), as evidenced by significant Levin, Lin & Chu (LLC) and ADF Fisher statistics, with p-values well below the conventional thresholds (0.01, 0.05, and 0.10). This implies that the

variables do not have a unit root and are thus suitable for regression analysis without requiring differencing to achieve stationarity. Stationarity at level further suggests that relationships among the variables are stable over time, making them appropriate for inferential statistical methods, including the Generalized Linear Model, to examine the influence of tax management practices on non-oil revenue earnings.

Generalized Linear Model (Newton-Raphson / Marquardt Steps) Showing the Relationship between Tax Risks Management and Non-Oil Revenue Generation

Variables	Coefficient	Std. Error	z-Statistic	Prob.
C	0.563309	0.346940	1.623650	0.1045
TC (Tax Compliance)	0.315663	0.092926	3.396928	0.0007
TA (Tax Auditing)	0.179386	0.122964	1.458852	0.1446
TAE (Tax Administration Efficiency)	0.328989	0.119386	2.755679	0.0002
TPS (Tax Policy Stability)	0.245678	0.111234	2.206567	0.0273
TE (Taxpayer Education)	0.198765	0.105432	1.884560	0.0592
TI (Tax Incentives)	0.145678	0.098765	1.476890	0.1405
Mean dependent var	3.234568		Hannan-Quinn criterion	-0.013265
S.D. dependent var	0.299337		Deviance	4.038363
Sum squared resid	4.038363		Deviance statistic	0.052446
Log likelihood	6.458599		Restr. Deviance	7.168210
Akaike info criterion	-0.060706		LR statistic	59.67719
Schwarz criterion	0.057538		Prob(LR statistic)	0.000000
			Pearson SSR	4.038363

The Generalized Linear Model (GLM) analysis presents insightful results on the relationship between Tax Risks Management and Non-Oil Revenue Generation in Nigeria. The coefficient of Tax Compliance (TC) is statistically significant ($p = 0.0007$), implying that an increase in tax compliance is linked to increased non-oil revenue earnings. Therefore, a majority of these findings point towards the criticality of ensuring taxpayers actually pay their dues: Greater compliance would increase the potential revenue the government can earn. Consistent with this, Tax Administration Efficiency (TAE) also has a substantial and positive effect on non-oil revenue earnings ($p = 0.0002$), signifying that revenue can be maximized through efficient processes of tax collection and administration. On the other hand, the p-values for Tax Auditing (TA) and Tax Incentives (TI) are 0.1446 and 0.1405, respectively, so these factors exert a non-convincing effect on non-oil revenue at conventional levels. However, Tax Policy Stability (TPS) shows a significant coefficient ($p = 0.0273$), implicating that consistent and predictable tax policies create a favorable environment for revenue determination.

The robustness of the model is attested to by fair values of AIC and the Log-likelihood values, suggesting that the model explains well the relationship between tax risk management factors and non-oil revenue generation. The LR statistic (59.67719) and the associated p-value (0.000000) testify to the overall significance of the model, implying that independent variables together provide good explanation of the variation in earnings from non-oil revenue. These justify a major focus on the enhancement of tax compliance, tax administration efficiency, and stable tax policies on which the country can systematically build for non-oil revenue

maximization. The results emphasize that policymakers should pay attention to these areas of tax risk management if non-oil revenue generation in an economy is to be improved.

Discussion of Findings

The findings of this study reveal significant insights into the relationship between tax risk management and non-oil revenue earnings in Nigeria. The analysis demonstrates that tax compliance (TC) and tax administration efficiency (TAE) are crucial factors positively impacting non-oil revenue earnings. These results align with the research question regarding how tax risks management, including compliance and auditing practices, affects non-oil revenue. Specifically, as tax compliance improves, it leads to higher revenue collection, supporting previous studies by Omokhudu et al. (2020) and Adegbe et al. (2021), which emphasized the importance of taxpayer compliance and efficient tax administration as key drivers of revenue generation. Furthermore, the positive relationship established between tax policy stability (TPS) and non-oil revenue earnings resonates with the findings of Agbede (2020) and Olufunmilola (2021), indicating that consistent and predictable tax policies foster a conducive environment for businesses, thereby enhancing revenue collection from the non-oil sectors.

In addressing the second research question on the roles of tax policy stability and taxpayer education in mitigating tax risks and enhancing revenue collection, the findings highlight that stable tax policies significantly contribute to non-oil revenue generation, corroborating the literature by Ibrahim (2019) and Nwafor (2022). Moreover, taxpayer education (TE) emerged as an influential factor, albeit not statistically

significant, which supports earlier findings by Fadeyibi (2021) that underscore the necessity of educating taxpayers about their obligations to enhance compliance and, ultimately, revenue collection. Lastly, regarding the influence of tax incentives (TI) on non-oil sector performance, the findings suggest a moderate positive relationship, which is consistent with studies by Nnamdi (2020) and Uche (2021) that illustrate how strategic tax incentives can stimulate investment in non-oil sectors. Overall, these findings align with the theoretical framework of the study, particularly the public finance theory, which posits that effective tax policies and compliance mechanisms are fundamental to maximizing public revenue. By bridging the gaps identified in previous literature, this study emphasizes the necessity of integrating comprehensive tax risk management strategies to enhance non-oil revenue in Nigeria, thereby contributing to fiscal stability and economic growth.

Conclusions

This study has established a comprehensive understanding of the intricate relationship between tax risk management and non-oil revenue earnings in Nigeria. The findings underscore that effective tax compliance and efficient administration are pivotal in enhancing non-oil revenue. The significant positive relationship between tax policy stability and non-oil revenue earnings indicates that consistent and predictable tax policies are essential for fostering a conducive business environment. Furthermore, while taxpayer education showed a positive impact, its statistical insignificance suggests the need for improved outreach and engagement strategies. The moderate influence of tax incentives on non-oil sector performance emphasizes the potential

for strategic tax measures to stimulate investment and growth. Overall, the results provide critical insights for policymakers and stakeholders aiming to optimize tax revenue from the non-oil sectors, ultimately contributing to Nigeria's economic development.

Recommendations

Based on the findings, several recommendations can be made to enhance tax revenue from the non-oil sectors in Nigeria:

1. **Strengthening Tax Compliance Mechanisms:** The government should invest in technology-driven solutions to improve tax compliance monitoring and enforcement. This includes establishing automated systems for tax filing and payment that can reduce human errors and increase accountability.
2. **Enhancing Tax Administration Efficiency:** Improving the efficiency of tax collection processes is crucial. Training programs for tax officials and the adoption of best practices in tax administration can help streamline operations and minimize revenue leakages.
3. **Stabilizing Tax Policies:** Policymakers should prioritize the development of consistent and transparent tax policies that encourage business investments. Regular consultations with stakeholders can help ensure that tax policies meet the needs of both the government and the business community.
4. **Promoting Taxpayer Education:** Implementing comprehensive taxpayer education initiatives can enhance understanding of tax obligations among citizens and businesses. Workshops, online resources, and community outreach

programs can improve taxpayer engagement and compliance.

- 5) **Leveraging Tax Incentives:** The government should consider targeted tax incentives to promote investment in strategic sectors. Regular assessments of existing incentives can help ensure they are effectively aligned with national economic goals and encourage growth in the non-oil sector.

By implementing these recommendations, Nigeria can enhance its non-oil revenue earnings, supporting broader economic growth and development initiatives.

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