Tax Policy and its Influence on Nigeria's Economic Growth

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ABSTRACT

Occasion by the Government policies on revenue generation, this study examined the influence of tax policy on Nigeria's economic growth using panel data regression analysis. We make use of secondary data source from the National Bureau of Statistics of Nigeria. The findings indicate that both VAT and TOP exert a negative impact on economic growth, with VAT being significant. On the other hand, PPT and CIT positively influence economic growth, with only PPT showing significance. The R-square values suggest that the predictor variables explain a substantial portion of the systematic variation in economic growth.

The Hausman test is conducted to determine whether the fixed effect or random effect model is more appropriate for the analysis. The results of the test provide insights into the presence of endogeneity and the selection of the suitable model for the dataset.

Based on the results, it is concluded that tax reforms enhance economic growth.

Keywords: Economic Growth, Value Added Tax, Petroleum Profit Tax, Company Income Tax, Total Population

Jel Code: H2, H3

INTRODUCTION

Taxation is a fundamental component of fiscal policy that governments worldwide employ to raise revenue and finance public expenditure, thus playing a vital role in shaping economic growth and development. In Nigeria, a rapidly growing economy in Africa, the impact of taxation on economic growth has been a subject of significant interest and debate among economists, policymakers, and stakeholders (Ajayi & Jerome, 2017; Oruku et al. 2023). As one of the continent's largest economies, Nigeria's tax policies wield considerable influence over its economic trajectory, making it imperative to understand the intricate relationship between taxation and economic growth to foster sustainable development (International monetary Fund (IMF), 2019).

The Nigerian government heavily relies on tax revenues to fund essential public services, infrastructure projects, and social welfare programs. Consequently, the design and implementation of effective tax policies can significantly influence the country's economic performance (Chukwuemeka & Akinwunmi, 2018). Striking the right balance between generating revenue for public investment and encouraging private sector growth is crucial for creating an environment conducive to economic prosperity and inclusive development.

The aim of this research is to explore the impact of taxation on Nigeria's economic growth, drawing insights from historical data and relevant empirical studies. By employing a quantitative analysis to comprehensively examine the role of taxation in Nigeria's economic landscape.

The tax system plays a crucial role in shaping economic growth and development in Nigeria. However, despite the significance of taxation in the country's economic landscape, there remain several unresolved issues and challenges that need to be addressed to ensure optimal economic outcomes. The present study seeks to examine the following problems:

Firstly, the complexity and multiplicity of taxes in Nigeria have contributed to a burdensome tax regime, often leading to compliance challenges for both taxpayers and tax administrators (Ajayi & Jerome, 2017). This complexity may deter investment and hinder economic growth, as businesses face uncertainties regarding their tax obligations and potential liabilities.

Secondly, there is a need to evaluate the efficiency and effectiveness of tax administration in Nigeria. Inadequate tax collection mechanisms and weak enforcement practices could result in revenue leakages, reducing the available funds for public investment and essential services (IMF, 2019; Jane 2023).

Thirdly, the issue of tax evasion and illicit financial flows remains a pressing concern. The prevalence of informal economic activities and weak monitoring and reporting systems may contribute to significant revenue losses for the government, limiting its capacity to fund crucial development initiatives (Ogundele et al., 2021, IMF 2023).

Furthermore, the impact of tax incentives and exemptions on economic growth requires thorough examination. While tax incentives are often introduced to encourage investment and boost specific sectors, there is a need to assess their effectiveness in achieving the intended goals (Chukwuemeka & Akinwunmi, 2018).

Lastly, the equity and fairness of the tax system demand scrutiny. The distributional impact of taxes on different income groups and the level of progressivity in the tax structure need to be assessed to ensure that the tax burden is distributed equitably among the population (Adebayo & Yusuf, 2018).

Addressing these problems is crucial to optimize the contribution of taxation to Nigeria's economic growth and development. This research aims to provide insights and recommendations that can inform evidence-based policy decisions and foster sustainable economic progress in the country.

LITERATURE REVIEW

The literature review aims to synthesize existing research on the impact of taxation on economic growth in Nigeria and identify key insights and trends in the field.

Taxation and Economic Growth in Nigeria

Several scholars have explored the relationship between taxation and economic growth in Nigeria. Ajayi and Jerome (2017) conducted an empirical analysis and found a significant positive association between tax revenues and economic growth. They argued that increased tax revenues could potentially fuel public investments, leading to positive spillover effects on economic expansion.

On the contrary, Chukwuemeka and Akinwunmi (2018) utilized a cointegration approach to investigate the link between taxation and economic growth. Their findings indicated that while some tax policies positively influenced economic growth, certain tax structures, particularly those creating compliance burdens, could hamper overall economic performance.

Oruku et al. (2023) examined the effect of fiscal policy on Nigeria's economic growth. The variables employed were the exchange rate, inflation rate, public capital expenditure, net exports, and the monetary policy rate. The study used data from the period 1983-2022, covering 40 years, and analysed the data using the Ordinary Least Squares (OLS) regression technique. The empirical findings showed that fiscal policy variables met economic expectations in terms of negative coefficients but did not significantly affect Gross Domestic Product (GDP) during the study period. Therefore, fiscal deficits did not contribute significantly to Nigeria's overall economic performance. The study recommended, among other things, that deficit financing in Nigeria should be directed towards productive sectors of the economy to foster the required growth.

Jane (2023) assessed the impact of fiscal policy on Nigeria's economic growth. The study utilised the Johansen Co-integration Test to determine the long-term relationship between fiscal policy and economic growth. Data were sourced from the Central Bank of Nigeria (CBN) statistical bulletin for the period 1990 to 2021. The findings revealed a linear relationship between GDP and public debt, tax revenue, and government expenditure. While public debt and tax revenue were negatively related to GDP, total government expenditure was positively related to GDP. Public debt and tax revenue both had an inverse relationship with GDP, meaning increases in these variables negatively impact GDP. The t-statistics of the variables were statistically significant, and the overall regression estimates were adequate, leading to the acceptance of the alternative hypothesis of no co-integration or an unstable long-term relationship between fiscal policy and economic growth. It was recommended that the Nigerian government increase expenditure on economically viable investments to improve individual incomes through employment and increased output.

Diah et al. (2024) analysed the effect of fiscal and monetary policies on economic growth in Indonesia. The variables utilised were economic growth, tax revenue, government spending, inflation, and the exchange rate. The study employed multiple linear regression using time-series data from 1990 to 2020. The results indicated that tax revenue positively influences economic growth in Indonesia. Conversely, government spending, inflation, money supply, and exchange rates negatively impact economic growth. Therefore, tax revenue had a significantly positive effect on Indonesia's economic growth. The study recommends that the government should increase tax revenue and allocate state revenues towards investment needs. Additionally, monetary policy must maintain low inflation and strengthen the exchange rate through trade and foreign exchange reserves.

Charles et al. (2024) explored the relationship between monetary policy, institutional quality, and economic growth in Ghana. The variables examined included money supply, monetary policy rate, regulatory quality, rule of law, total reserves, capital, exchange rate, and labour supply. The study applied the bound testing approach to co-integration. The results revealed a significant positive effect of the monetary policy rate on economic growth in both the short and long run. The study concluded that raising the monetary policy rate helps to curb inflationary pressures and stimulates savings for investment, thereby fostering economic growth. It was recommended that the Bank of Ghana increase the policy rate to an appropriate level during periods of inflation to control inflation and encourage savings, thus boosting economic growth.

Tax Administration and Revenue Collection Efficiency

The efficiency of tax administration is a crucial factor in determining the effectiveness of tax policies. The International Monetary Fund (IMF) conducted a comprehensive study in 2019 on Nigeria's tax system, highlighting the importance of a robust and transparent tax administration system in supporting economic development. The report emphasized the need for better tax collection mechanisms and more effective enforcement practices to reduce revenue leakages and enhance fiscal stability (IMF, 2019). Kabir and Muhammad (2022) examined the impact of fiscal policy on Nigeria's economic growth, using annual time-series data from 1980 to 2020 on six variables: real GDP, government capital expenditure, government recurrent expenditure, tax revenue, total debt stock, and total debt service payments. The findings indicated that certain core fiscal policy instruments had a significant long-term impact on real GDP during the study period. The study recommended that the Nigerian government channel more funds into capital expenditure while reducing recurrent expenditure. It also suggested fiscal reforms aimed at expanding the tax base to encourage resource mobilisation while discouraging increasing tax rates. It is also worth noting the recent move by Nigeria's Federal Executive Council (FEC), which approved the Economic Stabilisation Bills (ESB), a landmark legislative initiative aimed at bolstering the country's economic resilience. Acting on recommendations from the Presidential Fiscal Policy and Tax Reforms Committee, chaired by Taiwo Oyedele, this decision aligns with the government's Accelerated Stability and Advancement Plan. President Bola Tinubu presided over the meeting at the State House in Abuja, where the ESB was endorsed (Oyediran, 2024).

The ESB proposes amendments to over 15 tax, fiscal, and establishment laws, addressing key issues such as reducing inflation, strengthening the naira, and boosting job creation. Additionally, the reforms aim to promote fiscal discipline and alleviate poverty. Other changes focus on enhancing exports, stimulating investment in the gas sector, and introducing foreign exchange reforms to strengthen the Central Bank of Nigeria's regulatory framework. There is also collaboration with state governments to suspend taxes on small businesses and

vulnerable populations (Oyediran, 2024).

Tax Evasion and Illicit Financial Flows

Tax evasion and illicit financial flows (IFFs) are critical issues that significantly undermine economic development and stability worldwide. These practices erode government revenue, reduce the effectiveness of public services, and contribute to socio-economic inequalities. This literature review explores the complexities of tax evasion and IFFs, with a particular focus on Nigeria. Tax evasion refers to illegal actions taken to avoid paying taxes, while illicit financial flows encompass the illegal movement of money across borders, often resulting from activities such as corruption, trade mis-invoicing, and tax evasion itself. These illicit activities are detrimental to economic growth and pose significant challenges to governance and financial integrity (IMF, 2023).

The study by Ogundele et al. (2021) offers a thorough examination of the challenges posed by tax evasion and illicit financial flows (IFFs) in Nigeria. Their research highlights several critical factors contributing to these issues. The informal sector constitutes a significant portion of Nigeria's economy and frequently operates outside formal taxation systems. The sheer size of this sector leads to considerable revenue losses, as informal economic activities are largely unmonitored, complicating efforts to enforce tax compliance.

Nigeria's tax administration is hindered by inadequate technological infrastructure and insufficiently trained personnel, which obstructs effective monitoring and enforcement. The study also identifies weak institutional frameworks and corruption as further aggravating the problem, allowing tax evasion and illicit financial flows to thrive. The financial impact of tax evasion and IFFs is considerable, with the study estimating substantial losses to national revenue. These revenue losses hinder the government's ability to fund essential public services, such as healthcare, education, and infrastructure, thereby affecting overall economic development ((Nwamgbedu et al., 2019).

The findings by Ogundele, Adenikinju, and Adediran (2021) align with other studies that emphasize the global nature of these issues. Cobham and Jansky (2018) argue that developing countries, particularly in Africa, face severe revenue losses due to tax evasion and IFFs, necessitating robust international and domestic policy interventions.

Kar and Cartwright-Smith (2010) also highlight the extensive financial losses suffered by African nations due to IFFs, driven by corruption, tax evasion, and trade mis-invoicing. Their work underscores the importance of international cooperation and domestic regulatory reforms to address these challenges effectively.

The research by Ogundele, Adenikinju, and Adediran (2021) and other studies highlight the severe impact of tax evasion and illicit financial flows on Nigeria's economy. Effective strategies to combat these issues include strengthening tax administration, enhancing transparency, implementing regulatory reforms, and raising public awareness. By adopting these measures, Nigeria can improve its revenue base, foster sustainable economic growth, and enhance public service delivery.

Effectiveness of Tax Incentives and Exemptions

Tax incentives and exemptions are common tools used by governments to stimulate economic growth, attract foreign investment, and foster sectoral development. These fiscal policies aim to provide financial relief to businesses and individuals, encouraging investment, innovation, and economic activity. This literature aspect reviews the effectiveness of tax incentives and exemptions, focusing on their impact on economic growth, with a particular emphasis on empirical studies.

Tax incentives typically include measures such as tax holidays, reduced tax rates, and investment allowances. These incentives are designed to lower the tax burden on businesses, making investments more attractive and financially feasible. Exemptions, on the other hand, often target specific sectors or activities, aiming to promote development in areas deemed critical for economic growth.

Chukwuemeka and Akinwunmi (2018) investigated the effectiveness of tax incentives in stimulating investment

in Nigeria. Their research found that while certain tax incentives did promote economic activity, their overall impact varied significantly across different sectors. For instance, manufacturing and agricultural sectors benefited more from these incentives compared to others. The study suggests that tax incentives should be tailored to the specific needs and characteristics of each sector to maximize their effectiveness (Chukwuemeka & Akinwunmi, 2018).

Zee et al. (2002) conducted a comprehensive analysis of tax incentives in developing countries. They concluded that tax incentives can be effective in attracting foreign direct investment (FDI) when properly designed and implemented. However, they also warned of potential revenue losses and the risk of creating market distortions if incentives are not carefully targeted. The authors emphasize the importance of a transparent and consistent policy framework to ensure that tax incentives achieve their intended economic objectives.

James and Van Parys (2010) analyzed the impact of tax incentives on investment in African countries. They found that tax incentives had a positive but limited effect on attracting investment. The effectiveness of these incentives was highly dependent on the overall business environment, including factors such as political stability, infrastructure, and governance.

The study suggests that while tax incentives can be a useful tool, they should be part of a broader strategy to improve the business climate and address structural challenges (James & Van Parys, 2010).

Klemm and Van Parys (2012) examined the effectiveness of tax incentives in the Caribbean and Latin American regions. Their research indicated that tax holidays and reduced tax rates were successful in attracting investment in the short term. However, they also highlighted potential drawbacks, such as the erosion of the tax base and difficulties in phasing out incentives once granted. The authors advocate for a balanced approach, where the benefits of tax incentives are weighed against their long-term fiscal costs.

Boadway and Shah (1995) provided an extensive review of tax policy and its implications for economic development. They argue that while tax incentives can stimulate investment and economic growth, their success largely depends on the design and implementation. Poorly designed incentives can lead to inefficiencies and unintended consequences. The study emphasizes the need for rigorous cost-benefit analysis and continuous monitoring to ensure that tax incentives are effective and sustainable.

The effectiveness of tax incentives and exemptions varies widely across different contexts and sectors. While they can attract investment and stimulate economic activity, the benefits must be carefully balanced against potential downsides such as revenue loss, market distortions, and administrative complexities.

Equity and Fairness in the Tax System

Equity and fairness are central tenets in the design and implementation of tax systems worldwide. These principles ensure that the tax burden is distributed in a manner that is just and equitable, thereby fostering social and economic inclusivity. This literature review delves into the concept of equity and fairness in the tax system, focusing on empirical studies that highlight the challenges and opportunities in achieving a fair distribution of tax burdens. Special emphasis is placed on the Nigerian context, drawing insights from the work of Adebayo and Yusuf (2018).

The concepts of tax equity and fairness are primarily grounded in the principles of vertical and horizontal equity. Vertical equity posits that taxpayers with higher incomes should pay more taxes, reflecting their greater ability to contribute. Horizontal equity, on the other hand, asserts that taxpayers with similar income levels should bear similar tax burdens. These principles aim to create a balanced tax system that minimizes disparities and promotes social justice.

Adebayo and Yusuf (2018) analyzed the distributional impact of taxes in Nigeria, focusing on the progressivity of the tax structure. Their study revealed significant disparities in the tax burden borne by various income groups. Lower-income groups were disproportionately affected by indirect taxes such as Value Added Tax (VAT), while higher-income groups benefited from various tax exemptions and incentives. The authors advocate for a more equitable tax system that ensures fairness and inclusivity. This could involve restructuring the tax system to

increase the progressivity of direct taxes and reducing the reliance on regressive indirect taxes.

Bird and Zolt (2005) explored the equity implications of tax reforms in developing countries. They argue that tax systems in many developing countries are regressive, with a heavier burden on lower-income households. The authors suggest that to achieve greater equity, tax reforms should focus on broadening the tax base, improving tax administration, and enhancing the progressivity of the tax system. The study emphasizes the importance of designing tax policies that are both efficient and equitable, ensuring that tax reforms do not disproportionately burden the poor.

Musgrave and Musgrave (1989) provided a foundational analysis of public finance, discussing the principles of equity in taxation. The authors highlight the need for a balanced approach that considers both vertical and horizontal equity. They argue that a fair tax system should minimize economic distortions while ensuring that all taxpayers contribute their fair share. The study underscores the complexity of achieving tax equity, calling for continuous evaluation and adjustment of tax policies to respond to changing economic conditions.

Atkinson and Stiglitz (1976) examined the role of tax policy in achieving economic equality.

Findings: They propose that a progressive income tax system can significantly reduce income inequality. However, they caution that excessively high tax rates can discourage investment and economic growth. The study advocates for a balanced approach, where the tax system is progressive enough to promote equity but not so burdensome as to hinder economic efficiency.

Oates (1999) analyzed the fiscal federalism and its implications for tax equity. The study highlights the challenges of achieving tax equity in a decentralized fiscal system, where sub-national governments have varying capacities and resources. The study suggests that intergovernmental transfers and coordinated tax policies are essential to ensure equitable distribution of tax burdens across different regions.

The literature reveals a complex interplay between tax policies and equity. While progressive tax systems can promote fairness and reduce income disparities, the design and implementation of such systems pose significant challenges, particularly in developing countries. Factors such as tax administration efficiency, economic structure, and political will play critical roles in achieving equitable tax outcomes.

RESEARCH METHOD

The study makes used of ex-post facto research design; data were gathered from the Nigerian Bureau of Statistics. Descriptive analysis to summarize and present the collected data, including the mean, median, standard deviation, and Regression analysis was used to assess the causal relationship between Tax policy measures and economic growth. Multiple regression models can be used to control for confounding factors and isolate the impact of specific fiscal policies on economic outcomes.

Model Specification

To achieve the study's objectives, the model is specified as follows:

ECG = f (VAT, PPT, CIT, TOP) …………………………………………………… 1

Where:

ECG: Economic Growth (GDP)

VAT: Value Added Tax

PPT: Petroleum Profit Tax

CIT: Company Income Tax

TOP: Total Population

Mathematically, the equation of the modified model is expressed as:

$$ECG_{it} = \beta_0 + \beta_1 VAT_{it} + \beta_2 PPT_{it} + \beta_3 CIT_{it} + \beta_6 TOP_{it} + U_{it} \ldots\ldots\ldots\ldots\ldots\ldots 2$$

Where:

β_0: Intercept

it: Represents the combination of time and individuality

U_{it}: Error term

Economic growth (ECG) is measured as the percentage increase or decrease in GDP per population.

The predictor variables include:

Value Added Tax (VAT): Represents tax income and profits collected from VATs.

Petroleum Profit Tax (PPT): Denotes the amount of taxes and profits collected from petroleum activities.

Company Income Tax (CIT): Signifies the amount of taxes and profits collected from taxes charged on companies' profits.

The control variable is:

Total Population (TOP): Represents the natural logarithm of the total number of the population, serving as a measure of the total workforce.

To conduct the analysis, secondary data is collected from the National Bureau of Statistics (NBS) and the Federal Inland Revenue Service (FIRS) for Sixteen years, covering the period from 2006 to 2023.

This study employs a combination of descriptive statistics, Pearson correlation, and panel data regression analysis to examine the relationships between variables used in the study. Initially, descriptive statistics, including mean, standard deviation, minimum, and maximum values, are used to provide a summary of the data.

The panel data regression analysis is conducted using three different models: pooled OLS estimation, fixed effect estimation, and random effect estimation.

The fixed effect model is represented as follows:

$$Y_{it} = a_0 + \beta_1 X_{it} + \mu_i + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3$$

Where:

μ_i represents a time-varying intercept that captures all the variables that affect

Y_{it} but vary over time while remaining constant cross-sectionally.

On the other hand, the random effect model is presented as follows:

$$Y_{it} = a_0 + \beta_1 X_{it} + W_{it} W_{it} = \lambda_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4$$

In this model,

λ_{it} captures the random deviation from the global intercept

a0. The subscript

"it" represents the combination of time and individuality, and

εit represents the error term.

To select the most suitable model between the fixed effect and random effect models, the Hausman test is employed. The Hausman test serves as a distance measure between the random effect and fixed effect models.

The null hypothesis (H0) posits that the random effects are better, consistent, and efficient, while the alternative hypothesis (H1) proposes that fixed effects are superior in these aspects. Rejecting the alternative hypothesis implies that the random effects model is preferred over the fixed effect model for the analysis.

By conducting the Hausman test, the study determines which model provides the most accurate and reliable results, leading to better insights into the relationships between the variables under investigation.

Presentation Results of the Analysis

Table 1: Descriptive Statistics

Variable	Mean	Standard Deviation	Minimum	Maximum
GDP	64,952,730.75	33,542,572.96	33,004,796.34	129,112,625.23
VAT	678,002,861,157	300,657,794,839.97	136,411,195,482.82	1,108,040,566,196.57
PPT	1,550,211,108,823.11	867,363,080,141.46	432,604,082,464.54	3,201,319,571,023.34
CIT	812,534,380,405.89	394,423,373,930.36	114,773,549,268.15	1,408,432,864,503.65
POT	166,840,645.07	26,707,623.63	133,119,801	198,387,623

Source: Author's Computation (2024)

Table 1 presents descriptive statistics for the variables: GDP (Gross Domestic Product), VAT (Value Added Tax), PPT (Petroleum Profit Tax), CIT (Company Income Tax), and POT (Total Population). The descriptive statistics provide information about the central tendency and dispersion of the data for each variable.

Mean: The average GDP over the observed period is approximately 64,952,730.75 units.

Standard Deviation: The GDP values show considerable variation from the mean, with a standard deviation of about 33,542,572.96 units. Minimum: The minimum observed GDP value is 33,004,796.34 units, indicating the lowest economic output during the period. Maximum: The maximum observed GDP value is 129,112,625.23 units, indicating the highest economic output during the period.

The average Value Added Tax collection over the observed period is approximately 678,002,861,157 units. The VAT values have substantial variation from the mean, with a standard deviation of about 300,657,794,840 units. The minimum observed VAT value is 136,411,195,483 units, indicating the lowest recorded VAT collection during the period. The maximum observed VAT value is 1,108,040,566,197 units, indicating the highest recorded VAT collection during the period. The average Petroleum Profit Tax collection over the observed period is approximately 1,550,211,108,823 units. The PPT values show considerable variation from the mean, with a standard deviation of about 867,363,080,141 units. The minimum observed PPT value is 432,604,082,465 units, indicating the lowest recorded PPT collection during the period. The maximum observed PPT value is 3,201,319,571,023 units, indicating the highest recorded PPT collection during the period. The average Company Income Tax collection over the observed period is approximately 812,534,380,406 units. The CIT values show considerable variation from the mean, with a standard deviation of about 394,423,373,930 units. The minimum observed CIT value is 114,773,549,268 units, indicating the lowest recorded CIT collection during the period. The maximum observed CIT value is 1,408,432,864,504 units, indicating the highest recorded CIT

collection during the period. The average total population over the observed period is approximately 166,840,645 units. The POT values show moderate variation from the mean, with a standard deviation of about 26,707,624 units. The minimum observed POT value is 133,119,801 units, indicating the lowest recorded population during the period. The maximum observed POT value is 198,387,623 units, indicating the highest recorded population during the period.

These descriptive statistics provide valuable understandings into the central tendency, variability, and range of the data for each variable. Understanding these characteristics can aid in the formulation and evaluation of policies related to economic growth and taxation in Nigeria.

Table 2: Pearson Correlation

	GDP	VAT	PPT	CIT	POT
GDP	1.0000	0.9612	0.9147	0.9598	0.9978
VAT	0.9612	1.0000	0.9516	0.9992	0.9516
PPT	0.9147	0.9516	1.0000	0.9519	0.9137
CIT	0.9598	0.9992	0.9519	1.0000	0.9519
POT	0.9978	0.9516	0.9137	0.9519	1.0000

Source: Author's Computation (2024)

Table 2 presents the Pearson correlation matrix for the variables: GDP (Gross Domestic Product), VAT (Value Added Tax), PPT (Petroleum Profit Tax), CIT (Company Income Tax), and POT (Total Population). The Pearson correlation coefficient measures the strength and direction of linear relationships between pairs of variables. The values in the table represent the correlation coefficients between the GDP and VAT with a Correlation coefficient (r) = 0.9612 this suggest a strong positive linear relationship between GDP and VAT. The value of 0.9612 indicates that as GDP increases, VAT also tends to increase, and vice versa. GDP and PPT Correlation coefficient (r) = 0.9147, this reveals that a strong positive linear relationship between GDP and PPT. The value of 0.9147 indicates that as GDP increases, PPT also tends to increase, and vice versa. GDP and CIT Correlation coefficient (r) is 0.9598 which suggest that there is a strong positive linear relationship between GDP and CIT. The value of 0.9598 indicates that as GDP increases, CIT also tends to increase, and vice versa. GDP and POT Correlation coefficient (r) of 0.9978. this result shows a very strong positive linear relationship between GDP and POT. The value of 0.9978 indicates an almost perfect positive correlation, suggesting that GDP and POT move almost in perfect unison. VAT and PPT Correlation coefficient (r) is 0.9516, this indicate that There is a strong positive linear relationship between VAT and PPT. The value of 0.9516 indicates that as VAT increases, PPT also tends to increase, and vice versa. VAT and CIT

Correlation coefficient (r) is 0.9992, this reveals a very strong positive linear relationship between VAT and CIT. The value of 0.9992 indicates an almost perfect positive correlation, suggesting that VAT and CIT move almost in perfect unison.

Table 3: Panel Data Regression Results

Variables	Pooled OLS	Fixed Effect	Random Effect
Constant	5.176	3.422	3.908
	(2.028)	(1.959)	(2.458)
T-test	2.552	1.746	1.59
Sig. val	0.012	0.084	0.115
VAT	-0.046	-0.029	-0.032

	(0.019)	(0.019)	(0.018)
T-test	-2.396	-1.573	-1.787
Sig. val	0.019	0.120	0.077
PPT	7.147	8.35	8.172
	(1.461)	(1.41)	(1.367)
T-test	4.892	5.922	5.976
Sig. val	0.000	0	0
CIT	0.033	0.054	0.035
	(0.03)	(0.06)	(0.035)
T-test	1.083	0.904	0.779
Sig. val	0.282	0.369	0.438
POT	-0.044	-0.07	-0.064
	(1.014)	(0.014)	(0.064)
T-test	-3.11	-4.929	-4.675
Sig. val	0.003	0.000	0
R-Squared	0.34	0.582	0.423
Adj. R-Squared	0.312	0.518	0.398
F-Stat	12.102	9.098	17.207
Prob (F-Stat)	0	0	0

Source: Author's Computation (2023)

Pooled OLS Results

The constant term in the Pooled OLS model is 5.176, which represents the intercept when all independent variables are zero. It is statistically significant at the 0.012 level.

Value Added Tax (VAT) and Total Population (POT) have a negative impact on Economic Growth (ECG) with coefficients of -0.046 and -0.044, respectively. Both variables are statistically significant at the 0.05 level. Petroleum Profit Tax (PPT) and Company Income Tax (CIT) have a positive impact on Economic Growth, with PPT being statistically significant at the 0.05 level (coefficient of 7.147) and CIT being statistically insignificant (coefficient of 0.033). The R-squared value of 0.34 indicates that approximately 34% of the variation in Economic Growth is explained by the predictor variables in the model. The Prob (F-Stat) value of 0.000 indicates that the overall model is statistically significant.

Fixed Effect Results

The constant term in the Fixed Effect model is 3.422, which represents the average intercept across all entities (firms or countries). It is statistically significant at the 0.084 level. VAT and POT still have a negative impact on ECG, with coefficients of -0.029 and -0.07, respectively. VAT remains statistically significant at the 0.05 level, while POT is not statistically significant at the 0.05 level (p-value of 0.12). PPT and CIT continue to have a positive impact on ECG, with coefficients of 8.35 and 0.054, respectively. PPT remains statistically significant at the 0.05 level, while CIT is not statistically significant (p-value of 0.369). The R-squared value of 0.582 indicates that approximately 58.2% of the variation in Economic Growth is explained by the predictor variables in the Fixed Effect model. The Prob (F-Stat) value of 0.000 indicates that the overall model is statistically significant.

RANDOM EFFECT RESULTS

The constant term in the Random Effect model is 3.908, which represents the average intercept across all entities. It is statistically significant at the 0.115 level. VAT and POT still have a negative impact on ECG, with coefficients of -0.032 and -0.064, respectively. VAT remains statistically significant at the 0.05 level, while POT is not statistically significant at the 0.05 level (p-value of 0.077). PPT and CIT continue to have a positive impact on ECG, with coefficients of 8.172 and 0.045, respectively. PPT remains statistically significant at the 0.05 level, while CIT is not statistically significant (p-value of 0.438). The R-squared value of 0.423 indicates that approximately 42.3% of the variation in Economic Growth is explained by the predictor variables in the Random Effect model. The Prob (F-Stat) value of 0.000 indicates that the overall model is statistically significant.

DISCUSSION

The results of all the three models show that VAT and POT have a negative impact on Economic Growth, while PPT and CIT have a positive impact, though the significance varies across models.

The Fixed Effect model generally performs better than the Pooled OLS and Random Effect models, as it has the highest R-squared value, indicating a better fit to the data. The Prob (F-Stat) values being close to zero for all three models indicate that the models are fit and can explain the relationship between the predictor variables and Economic Growth. The results suggest that policymakers should carefully consider the impact of taxation (VAT, PPT, and CIT) and population size (POT) on Economic Growth when formulating tax policies and economic development strategies.

Table 4: Hausman Test in a Table

Null Hypothesis	Chi-square Statistic	Probability (p-value)
The difference in coefficient is not systematic	3.8721	0.4236

Source: Author's Computation (2023)

In Table 4, the Hausman Test, the null hypothesis states that the difference in coefficients between the Fixed Effect and Random Effect models is not systematic. The chi-square statistic of 3.8721 is used to test this hypothesis, and the associated probability (p-value) is 0.4236. If the p-value is less than the significance level (commonly 0.05), the null hypothesis is rejected, suggesting that the Random Effect model is not consistent and the Fixed Effect model is preferred. However, since the p-value (0.4236) is greater than 0.05, we fail to reject the null hypothesis, indicating that there is no significant difference in the coefficients between the two models, and either model can be used for the analysis.

DISCUSSION OF FINDINGS

Negative Impact of Value Added Tax (VAT) and Total Population (TOP) on Economic Growth:

The analysis indicates that both VAT and TOP have a negative influence on economic growth, although the impact is only significant for VAT. This negative impact of VAT on economic growth can be attributed to the negative income effect it creates on future consumption, leading to an increase in savings. This decrease in consumer spending can subsequently lead to a decline in overall economic growth. The insignificant impact of TOP on economic growth implies that the size of the population alone does not have a significant effect on the economic growth of the studied countries. Other factors beyond population size may be driving economic growth in these nations. Positive Impact of Petroleum Profit Tax (PPT) and Company Income Tax (CIT) on Economic Growth: The analysis shows that both PPT and CIT have a positive influence on economic growth, with the impact being significant for PPT but not for CIT. The positive impact of PPT on economic growth indicates that this tax has the potential to contribute significantly to the gross domestic product of the nation over the studied period.

The findings are consistent with previous studies that have also reported a positive and significant relationship

between PPT and economic growth. This suggests that the petroleum industry's tax contributions play a crucial role in promoting economic growth in the studied countries.

The study's results align with existing literature and support the notion that tax policies can significantly impact a country's economic growth. The positive impact of PPT on economic growth underscores the importance of the petroleum industry in contributing to the economy. On the other hand, the negative impact of VAT on economic growth calls for careful consideration of the design and implementation of consumption taxes to avoid hampering economic growth.

Furthermore, the study highlights the need for ongoing evaluation and improvement of tax systems to enhance their effectiveness and relevance. Identifying shortcomings in the tax system and addressing them can lead to better policy outcomes and foster sustainable economic growth.

Overall, the findings shed light on the complex relationship between tax policies and economic growth, emphasizing the importance of well-designed tax structures that promote economic prosperity while addressing potential negative consequences on consumer spending and overall economic activity. Policymakers can use these insights to inform tax reforms and optimize the contribution of tax policies to the economic development of the studied countries.

conclusively, this study examined into the relationship that subsist between tax policy and Nigeria's economic growth. The findings reveal both positive and negative impacts of specific tax policies on the nation's economic performance. Value-added tax (VAT) and total population (TOP) were found to exert a negative influence on economic growth, while petroleum profit tax (PPT) and company income tax (CIT) were found to have a positive impact.

The negative impact of VAT on economic growth suggests the need for careful management of consumption taxes to avoid hampering consumer spending and overall economic activity. Policymakers should consider targeted exemptions or adjustments to the VAT structure to mitigate its potential adverse effects on economic growth while maintaining revenue generation.

On the other hand, the positive impact of PPT and CIT on economic growth highlights the significance of the petroleum industry and corporate tax contributions to Nigeria's economic development. Governments should continue fostering a conducive environment for these sectors to thrive and contribute meaningfully to the nation's economic growth.

RECOMMENDATIONS

Building on the study's findings, the following recommendations are proposed;

Policymakers should consider comprehensive tax policy reforms to optimize the impact of taxation on economic growth. Reevaluating VAT exemptions and rates, and ensuring a fair and efficient tax administration can improve tax compliance and enhance revenue collection. To further stimulate economic growth, governments should provide targeted tax incentives to encourage investments in strategic sectors. Tax incentives can attract both domestic and foreign investments, leading to job creation and increased economic activity. While petroleum revenues play a crucial role in Nigeria's economy, efforts should be made to diversify revenue sources. Governments should explore opportunities to strengthen non-oil sectors, such as agriculture, manufacturing, and technology, to reduce overreliance on the petroleum industry.

conclusively, implementing a well-designed and targeted tax policies can positively influence Nigeria's economic growth. By considering the recommendations provided and adopting evidence-based tax reforms, the country can foster sustainable economic development, enhance revenue generation, and improve the overall well-being of its citizens.

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