

Public Sector Capital Expenditure and Tax Revenue Generation in Nigeria

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ABSTRACT: *Public sector capital expenditure is an important issue that cannot be ignored due to how it relates to tax revenue generation in Nigeria. This study examined the impact of public sector capital expenditure on tax revenue generation proxy by petroleum profit tax (PPT) in Nigeria. The baseline theory of this study is the Keynesian theory. The research design adopted in this study is the quasi-experimental research design. Secondary data was collected from the National Bureau of Statistics and CBN statistical bulletin. The multiple regression analysis based on the OLS method aided by E-view version 12 computer software was used to analyse the data, and the results were used to test the hypotheses. The findings showed positive significant relationship between the capital expenditure on road construction and PPT in Nigeria. It also revealed a significant positive relationship between capital expenditure on power, light and that PPT in Nigeria. The study revealed significant positive relationship between capital expenditure on security and PPT in Nigeria. Therefore, the study concluded that public sector capital expenditure played a vital role in improving tax revenue generation in Nigeria. The study recommends that since there is a positive relationship between capital expenditure on security, road construction and power with that of PPT, the variables should be sustained in this study. Government should look for means to solve the security challenges in the country, construct more roads, revolutionize electricity and power generation so as to enhance tax revenue generation in Nigeria.*

KEYWORDS: Petroleum profit tax, Power and light; Road construction; Security; Tax revenue generation.

INTRODUCTION

Evidence from Nigeria shows that overall government revenue has been on the rise over the past three decades, following a similar trend to the last century, when it accounted for a growing share of national GDP; defence, domestic security, education, healthcare, agricultural production, building, transportation, and communication budgets all continue to grow. Despite this, government spending on capital projects grew from N6,567,000,000 in 1981 to N60,000,000,000 in 1990. Investment spending increased from 2000 levels of N239,450.90

Publication of the European Centre for Research Training and Development-UK million to 2010 levels of N883,874.50 million to 2011 levels of N1,934,524.20 (CBN, 2012). This holds true for the vast majority of nations, regardless of the size of their public sector capital budgets. On the basis of these data, Babatunde (2011) concluded that, over time, state activities tend to expand at a faster rate than tax income. However, following the Keynesian's view that public sector capital expenditure will boost total government revenue, an increase in tax income is anticipated as a result of growing capital investment in Nigeria (Etale & Bingilar, 2016).

Tax revenue enhancement in the form of petroleum profit tax, value added tax, and company income tax is crucial to the economic health of any country. This makes assessing the government's role in implementing major infrastructure projects like road construction and rehabilitation, power, water resources, securities, land, and building critically important. Eita and Mbazima (2008), Wolde-Rufael (2008) all highlighted the significance of sound capital spending decisions in fostering the development of tax revenues and the long-term expansion of output, income, and employment. Despite the importance of empirical study on the topic in Nigeria, academic research on the link between public sector capital expenditure and tax revenue generation is extremely limited.

In the past years, it has been an unhealthy state for the federal government taking full charge of its public sector capital expenditure in the economy that will enhance tax revenue generation. The challenges faced by both the federal, state and local government in recent years have been the issue of finances to execute their capital expenditure that will yield high tax revenue (Kormendi & Meguire 1986; Akpan 2011). Public sector capital expenditure components are expected to generate revenue for the federal government treasury, allowing it to fund more project implementation in areas like infrastructure, social amenities, healthcare, and education. The relationship between public sector capital expenditure and tax collection in Nigeria from 1994 to 2022 has been the subject of just a small number of studies to make concrete the fact that capital expenditure by the federal government has not been able to result to reasonable development that will increase tax revenue generation.

Statement of Problem

Ideally, government should invest on physical capital infrastructural facilities that will yield high tax revenue generation. It is also a known fact that all these involve a whole lot of processes, just as no amount of tax revenue generation can be achieved without commensurate conscious efforts on the part of individuals, government and its agencies to execute their public sector capital expenditure (John, 2017).

More so, the perilous nature of the study when viewed empirically is of serious importance to the tax payers, government and the society at large, but despite this, there are problems that are associated with this study. Firstly, is the problem in the disbursement of public sector capital expenditure which involves identifying the cash inflows and cash outflows rather than accounting for revenues and expenses flowing from the investment. Capital expenditure still remains introspective as the risk factor and discounting factor which remnants is subjective to the manager's or government perception. Thus, a wrong capital expenditure decision can affect

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the long-term durability of the nation tax revenue generation and thus, this need to be handled judiciously by professional who understands the project very well (Awa & Mbah, 2016).

Secondly, the equitable allocation of tax revenue generation, or the sum of money a government collects in tax and non-tax forms to finance its capital investment programmes. Note that where the government's non-tax revenue is the money it receives on a regular basis that does not originate from taxation. Included in non-tax revenue is foreign aid that is obtained from abroad. Tribute or indemnities paid by a weaker state to a strong one often as a condition of peace after suffering military defeat. Examples of tax revenue are personal income tax, company income tax, value added tax, withholding tax, petroleum profit tax, capital gain tax, stamp duties and education tax. As far as taxation is concern, governments raise revenue through borrowing and export earnings. However, the problem here in Nigeria is that both past and present government do resort to borrowing a lot to finance capital project that are not productive and end up impoverishing the masses and at the end it affect tax revenue generation negatively. Hence this is a serious problem that this study will want to resolve (Hamidu, et al. 2019).

However, empirical evidence suggests that a rise in public sector capital expenditure has a little or zero effect on tax revenue generation in Nigeria, whereas other researchers found positive and substantial association between the two. Based on the unresolved issue, this study aimed to investigate the relationship between public sector capital expenditure and tax revenue generation (proxy by petroleum profit tax) in Nigeria from the time period of 1994 to 2022 so as to fill the knowledge gap in literature. The following specific goals of this study formed the basis of the research questions addressed as well as the hypotheses tested in this study, namely to:

Determine the relationship between capital expenditure on security and petroleum profit tax; Examine the relationship between capital expenditure on road construction and petroleum profit tax; and evaluate the relationship between capital expenditure on power, light and petroleum profit tax in Nigeria.

LITERATURE REVIEW

Conceptual Review

Public sector capital expenditure

Public sector expenditure itself is seen as the spending of public income by government to provide social, political and economic infrastructures that will grow and provide higher standard of living for its citizens. Osiegbu, et al (2010) posited that public expenditure is an offshoot of the inevitable loophole that is inherent in either of political systems (capitalism and communism) that is practice all over the world. A communist state makes public expenditure mandatory as the public sector commands all the productive resources available in such a country. Public expenditure in Nigeria is more often necessitated by the failure of capitalist system to harmonized and bridge the gap between the rich and the poor. The extreme competitive nature of the market system results in externalities that without the presence of the public sector may result to chaos and disorder. The federal government should provide

Publication of the European Centre for Research Training and Development-UK economic infrastructure for sustainable growth, ensure good health and better education facilities and above all; to provide employment and security for its citizen. All these requires huge amount of capital and human resources that cannot be provided by individuals or corporate bodies alone in a market system where selfish interest reigns supreme (John, 2017).

Structure of a public sector capital expenditure

The structure of public sector capital budget that evolved from the application of the other studies like the one done by Odey & Oti (2017), Etale & Bingilar (2016) etc. Contrary to the general belief, a capital budget has also an extensive portfolio that goes beyond borrowing although depending on the situation, it may be the most importance source. In principle, taxes levied on property, although paid from current income, are considered to be levies on capital and are included in capital receipts. In some countries, income from natural resources (including oil) may be earmarked for capital projects and are therefore included in receipts. In countries with development plans, surpluses from the current budget (relatively less during recent years due to the significant growth in current outlays) are yet another source of receipts (John, 2017).

Dimensions of public sector capital expenditure

The dimensions of public sector capital expenditure that are discussed in this study are explained below:

- **Capital expenditure on road construction:** The capital expenditure on road and construction is an estimate of spending for infrastructure and capital projects such as roads and bridges etc. Maintenance planning and maintenance finance are the two primary components of the infrastructure on road maintenance and building component of the systematic public sector capital expenditure. In order to effectively manage public sector assets, it is necessary to predict the service capacity of public facilities for the present and future years, evaluate their existing condition, and compare the predicted service capacity to expected demand (Appah & Ebiringa, 2012).
- **Capital expenditure on power and light:** The capital expenditure is an estimate of spending for infrastructure and capital projects such as power etc. that will pilot the affairs of the government or any organization at large. The operating budget is delivered each spring. Capital projects may include physical things such as power or major electrical plant, strategic plans, debt costs and setting aside money for future projects. By using capital forecasts, developed countries do this planning for the future by keeping property tax increases stable and making sure that departments are able to deliver services that the community relies on. Capital expenditure on power and light are subject to forms of public control and regulation ranging from local community-based groups to state wide government monopolies (Gilardoni, 2015).
- **Capital expenditure on security:** All costs, expenses and disbursements which Landlord shall pay or become obligated to pay for security service personnel and security systems and equipment for the building which landlord may deem necessary or which is required by the lessor under any ground lease of the property or any mortgagee. Protection of people, places, and things from intentional damage, whether from inside or without, is at the heart of security, which encompasses military and paramilitary actions and operations. Because

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of this shift in government focus from the productive sectors to the security of the economic and business environment, investors in the capital inflow dearth economy have become more cautious in their investment decisions. More than N1.4 billion to N1.6 billion in economic and business assets were lost between 2015 and 2018 due to the anti-economic and human capital development activities of Boko Haram in the North, Militancy in the Niger Delta, and Fulani herdsmen in the Middle Belt, among other banditry activities in Nigeria (Ben, et al, 2019).

Tax revenue generation

The concept of tax revenue generation has several definitions and explanations that relates to it. Tax revenue generation is the money the government raises from taxes, asset income, and transfer receipts at the federal, state, and local levels. Although the government can also raise funds by borrowing (selling bonds), the funds raised are not considered revenue. Government tax revenue is the money the government raises from taxes, asset income, and transfer receipts at the federal, state, and local levels. Government tax revenue is income received from taxes and other sources to pay for government expenditures (Folster & Henrekson, 2011).

Despite the numerous sources of revenue available to the three tiers of government as specified in the Nigeria 1999 Constitution, since the 1970s till now, over 80 per cent of the annual revenue of the 3 tiers of government come from petroleum. However, the serious decline in the price of oil in recent years has led to a decrease in the funds available to finance the economy. Furthermore, researchers have maintained that increase in government capital budgeting can be an effective tool to stimulate aggregate demand for a stagnant economy and to bring about crowd-in effects on private sector which will bring about the needed economic growth (Amahalu & Ezechukwu, 2017).

Measures of tax revenue generation

The measures of tax revenue generation numerous but the one that is considered and discussed in this study is the petroleum profit tax (PPT).

Petroleum profit tax (PPT): This is a tax imposed on the profit of oil producing companies in Nigeria. That is, the petroleum profit tax is subject to any occupant or resident company or anyone in charge of a non-resident company who are exploring petroleum or producing it. This also includes any liquidator, recipient, or agent of liquidator or recipient of any corporation carrying on petroleum operations in Nigeria. It is regulated by Petroleum Profit Tax Act, PPTA (1959) as amended (Etale & Bingilar, 2016) . Eyisi, et al (2015) argued that petroleum profit tax is singled out because of the significance of oil in the Nigerian public revenue performance. It is the most significant tax in Nigeria in terms of its share of 95 per cent of government revenue and 70per cent of total foreign exchange earnings.

Theoretical Review

The theoretical foundation of this study is anchored on the Keynesian theory, which is discussed below.

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Following the 1929-30 great depression, the classical economists that opposed government intervention argued that strong trade unions prevented wage flexibility which resulted in high unemployment. The Keynesians, on the other hand, favoured government intervention to correct market failures. In 1936, John Maynard Keynes (1883- 1946) “General Theory of Employment, Interest and Money” criticized the classical economists for putting too much emphasis on the long run. According to Keynes, “we are all dead in the long run”. Keynes believed depression needed government intervention as a short term cure. Increasing saving will not help but spending on capital projects. Government should increase public spending giving individuals, purchasing power and producers would produce more, creating more jobs and employment. This is the multiplier effect that shows causality from public expenditure to national income. Keynes categorized capital budgeting as an exogenous variable that can generate government revenue instead of an endogenous phenomenon. Keynes believed the role of government to be crucial as it can avoid depression by increasing aggregate demand and thus, switching on the economy again by the multiplier effects. Capital budgeting is a tool that brings stability in the short run but need to be done cautiously as too much of public sector expenditure would lead to inflationary situation while too little of it would lead to unemployment. From the Keynesian thought, capital budgeting can contribute positively to government revenue. Hence, an increase in the government capital projects is likely to lead to an increase in employment, profitability and investment through multiplier effects on aggregate demand (Aluthge et al., 2021).

Empirical Review

Aluthge et al. (2021) investigated the impact of Nigerian government expenditure (disaggregated into capital and recurrent) on economic growth using time series data for the period 1970-2019. The paper employs Autoregressive Distributed Lag (ARDL) model. To ensure robustness of results, the study accounts for structural breaks in the unit root test and the co-integration analysis. The key findings of the study are that capital expenditure has positive and significant impact on economic growth both in the short run and long run while recurrent expenditure does not have significant impact on economic growth both in the short run and long run. The study recommends that government should increase the share of the capital expenditure especially on meaningful projects that have direct bearing on the citizen’s welfare. Government should also improve the spending patterns of recurrent expenditure through careful reallocation of resources toward productive activities that would enhance human development in the country.

Nwala and Ogboji (2020) used an ex-post facto research technique and secondary data obtained from varied sources to evaluate the execution of Nigeria's fiscal budget from 1981 to 2018. Gross domestic product (GDP), as the dependent variable was regressed against fiscal policy variables such as capital expenditure, recurrent expenditures, and public debt. Using regression analysis, it was shown that investment in capital expenditure had significant impact on the GDP in Nigeria. Additionally, recurring expenses and GDP are positively and significantly linked, but government debt and GDP are negatively and significantly linked.

Ugwo et al (2019) conducted a study of crude oil export and economic growth of Nigeria for the period 1980 to 2017. The study used ex post facto and correlational research designs. The

Publication of the European Centre for Research Training and Development-UK study utilized time-series data from the Central Bank of Nigeria (CBN) and the time series were analysed using unit root test, co-integration and multiple regressions. The study used crude oil revenue and crude oil barrels as measures for crude oil export and real gross domestic product as a proxy for economic growth. The empirical analysis disclosed a positive impact of crude oil export and the economic growth of Nigeria for the period under review. The study, therefore, recommended that crude oil and its natural components should be utilized for the development of the country.

Osho et al (2019) investigated the influence of tax revenue on government capital expenditure and economic growth in Nigeria using secondary data obtained from CBN Statistical Bulletin spanning 2009 to 2018. They employed descriptive statistics, multiple regression and Johansen co-integration tests to evaluate data. They found that only company income tax had positive influence on government capital expenditure.

Similarly, Orji (2019) investigated the impact of budget execution on economic growth in Nigeria using data collected from CBN Statistical Bulletin covering the period 1999 to 2018. He employed multiple regression analysis based on OLS techniques for data analysis and found that capital expenditure, recurrent expenditure and government debt had no impact on economic growth in Nigeria.

Also, Adah and Akogu (2019) investigated the effect of budget implementation on economic growth in Nigeria using secondary data from 1999 to 2017. Data was analysed by means of OLS regression techniques and found out that capital expenditure and recurrent expenditure boosted economic growth in the long run.

Apere (2017) conducted a study of crude oil and fiscal formulation in Nigeria for the period 1980 to 2015. The study used ex post facto and correlational research designs. The study employed secondary sources of data collection and the data obtained were analysed using univariate and multivariate analysis while the multivariate analysis was achieved using vector auto-regression analysis, granger causality and forecast error decomposition. The granger causality test disclosed that there occurs a bi-directional association between natural gas and fiscal policy; oil revenue and a unidirectional causality between crude oil and fiscal policy notably government total expenditure. The impulse response function and Forecast Error Variance Decomposition findings indicate that oil shocks exercise an obvious effect on Nigeria fiscal policy through a fiscal channel of government expenditures that are funded by oil revenues. The study further suggested that the influence of crude oil and natural gas on improvements in fiscal policy shock was positive from the first, second, third forecast periods and was stable throughout and did not expire in the long run.

Etale and Bingilar (2016) investigated petroleum profit tax, personal income tax and economic growth for the period 2005 to 2014 in Nigeria. The study used ex post facto and correlational research design. The study employed time series secondary data from the Central Bank of Nigeria Statistical Bulletin. The time-series data collected from the CBN was analysed using the ordinary least squares (OLS) technique. The dependent variable economic growth was measured using the real gross domestic product as the dependent variable while petroleum

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 profit tax and personal income tax as the independent variables. The results of the analysis indicated that both petroleum profit tax and personal income positively and significantly influence economic growth. The study recommended that government should make a stronger tax administration system to widen the tax income, and embark on tax education to ensure voluntary tax compliance.

Muritala and Taiwo (2011) examined the trends and effects of government spending on the growth rates of real GDP in Nigeria between 1970 and 2008 using Ordinary Least Square (OLS) technique. The findings show that there that there is a positive relationship between real GDP as against the recurrent and capital expenditure.

METHODOLOGY

The research design deals with the overall plan of conducting the study in order to achieve the stated objectives. Hence, the research looked at time series data for the relevant variables from 1994 to 2022. Capital expenditure on security; road and construction; and that of capital expenditure on power are the proxies for public sector capital expenditure, while tax revenue generation (dependant) is proxy by petroleum profit tax. The choice for chosen this period was because operation of structural breakdown problems in the system. The source of data is secondary. This research makes use of quarterly time series data collected from many different sources, including the Statistical Bulletin of the Central Bank of Nigeria (2022), and the NBS. From 1994 to 2022, was the time frame we're looking at. Multiple regression analysis using the Econometric Views (E-Views) version 12, statistical programme is used to analyse the data in this study and test the hypotheses. This method was used in an effort to apply regression models to the connection between public sector capital expenditure and tax revenue generation (petroleum profit tax) in Nigeria.

In order to facilitate the application of OLS multiple regression, the following model adapted from Etale and Bingilar (2016) as stated below was employed:

$$PPT = f(ESE, ERC, EPL)$$

The above model was transformed into a mathematical equation as follows:

$$PPT = \beta_0 + \beta_1 ESE + \beta_2 ERC + \beta_3 EPL + \mu \quad \text{equation (1)}$$

Where:

PPT = Petroleum profit tax (proxy for tax revenue generation), the dependent variable.

ESE = Capital expenditure on security

EPL = Capital expenditure on power and light

ERC = Capital expenditure on road construction

β_0 = Intercepts/constant

β_1 to β_3 = Coefficients of independent variables to be determined

μ = Error term

RESULTS AND DISCUSSION

Table 4.1: Descriptive Analysis Result

	PPT	ESE	ERC	EPL
Mean	7125.687	246.7069	76.04552	99.39000
Median	5287.570	196.9000	71.36000	71.79000
Maximum	21590.18	755.5400	220.1700	299.9000
Minimum	160.1900	4.400000	0.610000	0.410000
Std. Dev.	6876.626	236.8874	73.23994	103.3180
Skewness	0.906040	0.848457	0.608893	0.528710
Kurtosis	2.532164	2.581139	2.050137	1.710028
Jarque-Bera	4.232190	3.691416	2.882167	3.361783
Probability	0.120501	0.157914	0.236671	0.186208
Sum	206644.9	7154.500	2205.320	2882.310
Sum Sq. Dev.	1.32E+09	1571238.	150194.5	298888.9
Observations	29	29	29	29

Source: E-Views version 12 Output 2023

The Table 4.1 shows that petroleum profit tax (PPT) has a mean of 7125.687 while the minimum petroleum profit tax (PPT) in the observations is 160.19 and the maximum petroleum profit tax (PPT) is 21590.18. The standard deviation of 6876.63 shows the level at which the Petroleum Profit Tax (PPT) deviates from the mean. petroleum profit tax (PPT) is positively skewed at 0.906 with a probability value of 0.12, indicating that petroleum profit tax is not normally distributed.

Unit Root Test

Augmented Dickey Fuller (ADF) was used in the study to check for unit root. The aim of conducting this test is to avoid spurious regression which comes from regressing one non-stationary variable upon another non-stationary variable. The results of the Augmented Dickey-Fuller test are presented in Table 4.2 below:

Table 4.2: Results of Augmented Dickey-Fuller Test

Variables	ADF Statistic	1% Critical Value	5% Critical Value	10% Critical Value	Decision	Order of Integratio n
PPT_t	-5.024171	-3.699871	-2.976263	-2.627420	Stationary	I(0)
ESE_t	-5.547490	-3.752946	-2.998064	-2.638752	Stationary	I(0)
ERC_t	-6.253981	-3.711457	-2.981038	-2.629906	Stationary	I(0)
EPL_t	-6.128904	-3.699871	-2.976263	-2.627420	Stationary	I(0)

Source: E-Views version 12 Output 2023

The results of the Unit Root Test as shown in Table 4.2 indicates at 1%, 5% and 10% level of significance, the Augmented Dickey Fuller (ADF) test statistic for petroleum profit tax (PPT)

Publication of the European Centre for Research Training and Development-UK is greater in absolute value than the individual critical values. This therefore indicates that petroleum profit tax (PPT) was stationary at all level [I(0)].

Interpretation of the Parameters/Coefficients: The result in Table 4.3 shows that petroleum profit tax (PPT) is positively influenced by capital expenditure on security (ESE). This means that petroleum profit tax (PPT) will increase by 6.891270 given a unit increase in capital expenditure on security (ESE) while petroleum profit tax (PPT) will decrease by 6.891270 given a unit decrease in capital expenditure on security (ESE). However, capital expenditure on security (ESE) is statistically significant given that its p-value (0.0000) is less than 0.05 at 5% level of significance. Therefore, it can be inferred that capital expenditure on security (ESE) has a positive and significant effect on petroleum profit tax (PPT).

Table 4.3: Ordinary Least Square Regression Results of Model 1

Dependent Variable: PPT_t				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	171.5658	496.9493	0.345238	0.7328
ESE_t	6.891270	0.212926	32.36468	0.0000
ERC_t	24.64891	5.523465	4.462582	0.0002
EPL_t	3.945110	0.523094	7.541870	0.0000

R-squared = 0.937373; Adjusted R-squared = 0.929858; F-statistic= 124.7299;
 Prob (F-statistic) = 0.000000; Durbin-Watson stat = 2.285191

Source: E-Views version 12 Output 2023

Also, the result in Table 4.3 shows that petroleum profit tax (PPT) is positively influenced by capital expenditure on road construction (ERC). This means that petroleum profit tax (PPT) will increase by 24.64891 given a unit increase in capital expenditure on road & construction (ERC) while petroleum profit tax (PPT) will decrease by 24.64891 given a unit decrease in capital expenditure on road construction (ERC). However, capital expenditure on road construction (ERC) is statistically significant given that its p-value (0.0002) is less than 0.05 at 5% level of significance. Therefore, it can be inferred that capital expenditure on road construction (ERC) has a positive and significant effect on petroleum profit tax (PPT).

In addition, the result in Table 4.3 shows that petroleum profit tax (PPT) is positively influenced by capital expenditure on power and light (EPL). This means that petroleum profit tax (PPT) will increase by 3.945110 given a unit increase in capital expenditure on power and light (EPL) while petroleum profit tax (PPT) will decrease by 3.945110 given a unit decrease in capital expenditure on power and light (EPL). However, capital expenditure on power and light (EPL) is statistically significant given that its p-value (0.0000) is less than 0.05 at 5% level of significance. Therefore, it can be inferred that capital expenditure on power and light (EPL) has a positive and significant effect on petroleum profit tax (PPT).

b. Interpretation of Adjusted R-Squared: From the regression results presented in Table 4.3, the R-squared value is 0.937373. This implies that about ninety-four (94%) of the

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 variation in the dependent variable (petroleum profit tax) is explained by changes in independent variables (capital expenditure on security, capital expenditure on road & construction, capital expenditure on power) while the remaining six (6%) changes are explained by other variables not included in the study as represented by the error term. Similarly, the adjusted R-squared obtained is 0.929858. This shows that if the coefficient of determination is adjusted, approximately ninety-three per cent (93%) of the changes in petroleum profit tax are attributable to changes in capital expenditure on security, capital expenditure on road construction, capital expenditure on power and light while the remaining seven per cent (7%) of the variation in the model is equally captured by the error term (unknown factors outside the model).

c. Significance of Overall Parameter (Estimated Model One): This tests overall significance of model one at 5% level of significance and joint significant effects of the independent variables on the dependent variable. To determine this, we compare the prob (F-statistic value) with the alpha value of 0.05. From the regression result, prob (F-statistic value) is 0.000000 while the alpha value is 0.05. However, since the prob (F-statistic) value is less than the alpha value, we therefore conclude that model one is statistically significant. This also means that capital expenditure on security, capital expenditure on road & construction, and capital expenditure on power have joint significant effects on petroleum profit tax in Nigeria.

Test of Hypotheses

For the purpose of this study, the hypotheses formulated are tested at 5% level of significance using regression technique.

Decision Rule: *Reject the null hypothesis at 5% level of significance if the significant value (P-value) is less than 0.05. Contrarily, accept the null hypothesis at 5% level of significance if the significant value (P-value) is greater than the 0.05.*

Testing of Hypothesis One

Null Hypothesis One (H₀₁): Capital expenditure on security has no significant relationship with petroleum profit tax (PPT) in Nigeria.

Decision on Hypothesis One: The *p-value* of capital expenditure on security from the regression result as shown in Table 4.3 is 0.0000 while the *alpha value* is 0.05. However, since the *p-value* (0.000) is less than the *alpha value* (0.05) at 5% level of significance, we therefore reject the null hypothesis one (H₀₁) and conclude that capital expenditure on security has a significant effect on petroleum profit tax (PPT) in Nigeria.

Null Hypothesis Two (H₀₂): Capital expenditure on road construction has no significant relationship with petroleum profit tax (PPT) in Nigeria.

Decision on Hypothesis Two: The *p-value* of capital expenditure on road construction from the regression result as shown in Table 4.3 is 0.0002 while the *alpha value* is 0.05. However, since the *p-value* (0.0002) is less than the *alpha value* (0.05) at 5% level of significance, we therefore reject the null hypothesis two (H₀₄) and conclude that capital expenditure on road construction has a significant relationship with petroleum profit tax (PPT) in Nigeria.

Null Hypothesis Three (H₀₃): Capital expenditure on power and light has no significant relationship with petroleum profit tax (PPT) in Nigeria.

Decision on Hypothesis Seven: The *p-value* of capital expenditure on power and light from the regression result as shown in Table 4.3 is 0.000 while the *alpha value* is 0.05. However, since the *p-value* (0.000) is less than the *alpha value* (0.05) at 5% level of significance, we therefore reject the null hypothesis seven (H₀₇) and conclude that capital expenditure on power and light has a significant relationship with petroleum profit tax (PPT) in Nigeria.

DISCUSSION

The findings from the test of the hypothesis showed that capital expenditure on security has positive relationship with petroleum profit tax in Nigeria. The positive relationship further shows that increase in capital expenditure on security will lead to increase in petroleum profit tax in Nigeria while decrease in capital expenditure on security will lead to decrease in petroleum profit tax in Nigeria. This result is supported by Aluthge et al (2021), Nwala and Ogboji (2020), Adah and Akogu (2019), Osho et al. (2019), Ugwo et al (2019), Etale and Bingilar (2016) and Muritala and Taiwo (2011) who found that capital expenditure on security exerts significantly positive effect on Petroleum Profit Tax (PPT) in Nigeria. The results from the test of the second hypothesis indicated that capital expenditure on road construction has positive relationship with petroleum profit tax in Nigeria. The positive relationship further shows that increase in capital expenditure on road construction will lead to increase in petroleum profit tax in Nigeria and vice versa in the case of decrease. This finding is related to the finding of Adah & Akogu (2019) who established that implementation of public sector capital budgeting, especially in terms of capital expenditure on road construction, plays a significant role in revenue generation. The findings emanating from the third hypothesis indicated that capital expenditure on power and light has positive relationship with petroleum profit tax in Nigeria. The positive relationship further shows that increase in capital expenditure on power and light will lead to increase in petroleum profit tax in Nigeria while decrease in capital expenditure on power and light will lead to decrease in Petroleum Profit Tax in Nigeria. This result is not consistent with the finding of Orji (2019) who found that capital expenditure on power (as a proxy of Nigerian government's implementation of a budget) is not an important ways of increasing tax revenue and country's GDP.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study examined the relationship between public sector capital expenditure and tax revenue generation in Nigeria. The result of the study showed that capital expenditure on security, capital expenditure on road construction and that of power and light all have positive relationship with petroleum profit tax. Therefore, based on these findings, the study has yielded empirical evidence and thus concluded that public sector capital expenditure played a vital role in increasing tax revenue generation in Nigeria.

Recommendations

1. We advise that government should beef up their security details in order to increase our petroleum profit tax. By this we therefore, plead for government to employ more expenditure means that is targeted toward increasing our petroleum profit tax to be encouraged.
2. We implore government to see that capital expenditure on road construction should be encouraged and monitored so as to boost tax revenue generation in the country.
3. From our findings, it shows that there is a positive and significant relationship between capital expenditure on power and petroleum profit tax in Nigeria. This means that despite the works that has been done in this area, it still has an impact on the criterion variable, therefore, it is advisable for government and other organizations to look for means to generate sufficient power that will enhance tax revenue generation in Nigeria.

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