

Revenue Generation as a Tool for Infrastructural Development in Nigeria

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Abstract

This work examined revenue generation as a tool for infrastructural development in Nigeria. Every government particularly the government of developing countries (including Nigeria) depends on revenue (oil and non-oil) for its economic growth and development. The objectives of this research were to determine the impact of revenue generated on infrastructural development in Nigeria and to determine the relationship between revenue generated and economic growth in Nigeria. Time series data were applied in carrying out this research work and the data were sourced from Federal Ministry of Finance, Office of the Accountant General of the Federation, Federal Republic of Nigeria Official Gazettes and the various States' Official Gazettes, Central Bank of Nigeria (CBN) and Nigeria Bureau of Statistics (NBS). Ordinary least square regression analysis was employed in this work with the use of STATA 13 economic package. The scope of the study is basically focused on Nigeria's total revenue generated, infrastructural development and economic growth from 1981 to 2018. The findings of this work reveal that revenue generated have significant effect on infrastructural development in Nigeria. Also, it was concluded that revenue generated have significant effect on economic growth in Nigeria. The study recommends that that the government should intensify efforts in its revenue drive. This intensified drive should be geared toward boosting non-oil revenue like taxation owing to the unpredictability of the oil market

Keywords: *Infrastructure, Revenue, Economic growth, Development, Non-oil.*

1.1 Introduction

According to Abiola and Asiwah (2012), Nigeria has three tiers of government system. They are: the federal government, the state government and the local government. The essence of this division of government into federal, state and local levels is to enable the government exercise her administration easily and effectively. Generally, it can be said that the governments are responsible for the provision of the collective (social) goods and services on a non-commercial basis as well as the provision of other social and economic services. In order to meet up with the foretasted goals and services, the government needs to collect revenues.

As opined by Nigerian finder (2018), basically, revenue in terms of governance is referred to as total annual income of the federal, state and local government council. It can be said to be the money that goes into the treasury from any of these sources. Every government depends on revenue from different sources to thrive and the Nigerian government isn't different. The sources of government revenue includes, tax, rates, fees, license fee, surplus of the public sector units, fine and penalties gifts and grants, printing of paper money, borrowing.

Shakirat (2018), opines that Infrastructure is a strategic economic growth driver. Its potential are numerous. It serves as a catalyst for public development in the entire government agenda such as healthcare delivery, transportation, education and food security. Infrastructure contributes to the score of Nigeria's economic growth, provides jobs and deliver virtual services to the country and the majority of its citizens. The world

economic forum estimates that every dollar spent on capital projects (in utilities, flood, defence and telecommunication) generates an economic return of 5% to 25%.

The aim of this work is to examine the revenue generation as a tool for infrastructural development in Nigeria.

1.2 Statement of the problem

Infrastructure of any country is of immense importance to that country whether developing or developed. It is therefore necessary that the various infrastructure of a country should be adequately provided and managed in proficient ways which will serve not only as pride to such country but also as an encouragement to other countries toward economic development and growth.

Over the years, despite the tremendous growth recorded in the federal government retained revenue, there are reoccurring questions as to how government have fully utilized revenues earmarked for provision of infrastructural development.

In Nigeria, huge amount of revenue have been received by various governments and it's usage in improving the level of infrastructural development in the country is still an issue of debate.

The issues mentioned above constitute the problem to be addressed by this research work.

1.3 Objectives of the study

This research work sought to achieve the following:

1. To determine the impact of revenue generated on infrastructural development in Nigeria.
2. To determine the relationship between revenue generated and economic growth in Nigeria.

1.4 Research questions

The research questions were formulated as follows:

1. To what extent does revenue generated in Nigeria affect infrastructural development in Nigeria?
2. To what extent does revenue generated and economic growth in Nigeria relate?

1.5 Research hypotheses

The following hypotheses were tested in this work:

1. **H₀:** Revenue generated have no significant effect on infrastructural development in Nigeria.
2. **H₀:** There is no significant relationship between revenue generated and economic growth in Nigeria.

2.0 Review of related literature

2.1 Government revenue

Nightingale (2002), defined government revenue as fund needed for governance in the public sector to finance government activities adding that these fund is to be generated from non-oil sources such as income and other forms of tax, royalties, fines, fees, rates and aids from the federal government and foreign financial institutions and countries.

According to Otubala (2011), government revenue include the entire fund generated from oil and non-oil sources other than fund raised from issue of debt instrument such as government bonds, stock, treasury certificates and treasuring bills from capital and money market, adding that non-oil source include: income tax reception, charges, royalties, fees, utilities, miscellaneous revenue among others.

In the words of Ihimodu (1995), financial resources of government constitute the bulk of its revenue and this relates to monies mobilized or generated in the economy. Government revenue can be defined as public receipt which the government collects from all sources, except loans and borrowing.

2.1.1 Means of government revenue

According to Oladeji (1995), the main sources of government revenue could be broadly classified as follows:

Petroleum profit tax: This forms the major source of revenue to the Nigerian government. It is the revenue or income derived from crude oil which represent more than 75 percent of the source of revenue to the government of receipt time, the excess proceed from crude oil were been shared between the three tiers of government.

Rent, royalties and profit: These are income derived from the use of government properties, profits from government business enterprise and income from mining right, fees, fines and specific charges. These are incomes derived from payment for the use of government services like vehicle licenses, water rates, stamp duties, tax clearance. It is income generated by Federal Inland Revenue Service (FIRS).

2.2 Infrastructure development

Usman (2014), explains infrastructure as a basic physical and organizational structure needed for the operation of a society or enterprise, or the service and facilities necessary for an organization to function.

Ahmed (2011) opined that infrastructure is a set of interconnected structural elements such as roads, bridges, water supply, sewers, electrical gadgets, telecommunication that provides framework. These structural elements provide commodities and services that are essential for enabling societal living condition.

Aigbokhan (1999) explain infrastructure as a term which encompasses activities referred to as social overhead capital, with two principal characteristics being that they have economic of scale in production and spill over's from users to non-users.

Ajakaiye (2012) by infrastructure, it means a large scale public systems, services and facilities of countries that are necessary for economic activities. The component of infrastructure includes electricity, transportation (road, rail, ocean, air).

2.3 Theoretical framework

The following theories were employed in this study:

Benefit theory

This study is anchored on the “benefit theory” as propounded by Erik Lindahl in 1919. The theory assumes that citizens tend to pay more taxes when they feel they have sufficient benefits from the activities of the state. It is however argued that the services which are provided are not quantified and measured, after all some citizens who pay taxes do not have the opportunity of enjoying them. This theory is relevant to this study as it evaluate the benefits of tax revenue just as measured by the capital infrastructure provided by the country.

Development theory

This study is archived on the development theory “as propounded by Musgrave, Roster. A. in 1969. Government provides infrastructure which include: transportation system (road and railway); sanitation system; law and order; health; and education (human capital development). The whole essence of government expenditure during this period is to stimulate the economy for eventual take-off into the middle of economic development.

Doctrine of unbalanced growth theory

The theory of unbalanced growth was propounded by Albert O. Hirschman in the year 1958. No less developed country has sufficient endowment of resources as

to enable it invest simultaneously in all sectors of the economy in order to achieve balanced growth. Balanced growth is a doctrine previously advanced by Rosenstein Rodan in his 1943 article on a problems of industrialization of eastern and south-eastern Europe.

According to the theory, for a development to take place, a deliberate strategy of unbalancing the economy should be adopted. This is possible by investing either in social overhead or capital. It is advocated not because of its direct effect on final output, but because it permits and in fact invites directly productive activities to come in some social capital investment is required as a prerequisite of directly productive activities in investment.

2.4 Empirical review

The following scholarly works were reviewed in this work:

Ogechi and Adenugba (2013) analysed the effect of internal revenue generation on infrastructural development in Lagos State. Descriptive and inferential statistics were used for the analysis. Descriptive involved the use of Spearman's rank to determine the direction of relationship between internally generated revenue and infrastructural development. The study also revealed various methods of generating revenue like enforcement of tax personal, creating awareness to the public etc. The study also recollects that revenue administration agencies need to be reviewed to be able to generate more revenue.

Nwofor and Gordon (2013) studied tax revenue and government expenditure. They explored how revenue generated from taxation affects Nigeria expenditure. Secondary data used for data collection using Pearson moments collation coefficient. The study found out that the volume of expenditure incurred by government can negatively affect total tax revenue especially when those expenditure are mainly a recurrent expenditure.

Ediogbanya (2013) examined the revenue generative and its impact on government development effort of selected local council in Kogi Senatorial district. Secondary data were used. Finding from the study was that government revenue positively correlate with infrastructural development. The study also established that there is significant relationship between allocation from the excess crude oil account and government development effort. It was recommended that government should put necessary modern technological machineries in place as this will boost its internal revenue generation and subsequent provision of adequate social amenities.

Udu and Nkanor (2016) evaluated the effect of electronic internally generated revenue on infrastructural development of Ebonyi State, Ex-post facto research design was used. The study covered the year 2011-2014 and regression and Pearson correlation of used for the analysis. Finding from the study revealed that there exist no significant degree of relationship between the electronic internal generated revenue and infrastructural development with the year of study.

Akpan and Nnaseh (2013) studies the effect of Internally Generated Revenue (IGR) on infrastructural development in Akwa Ibom State. Ex-post facto research

design was adopted in the study. The data were analysed with simple percentage statistic while simple regression was used in testing the hypothesis. Findings show that internal generated revenue contributes significantly and positively to provision of water, electricity and roads and more skewed to road than electricity and water. The study was able to conclude that IGR has made positive but uneven contributions to the development of infrastructure in the state as some aspects of infrastructure like road was found to receive more boosts from IGR than others.

Ogbonna (2010) studied burning issues and challenges of the Nigerian tax system with analysed emphasis on petroleum profit tax. Data obtained through interviews and administration of questionnaire were analysed by some percentage analysis to examine

tax administration in Nigeria. The areas covered by the study include tax administration, constraints besetting tax payers, general principles of taxation as well as its purpose, uses, classifications, and effects. The result of the study agrees with the stark reality which characterize Nigeria tax exercise namely poor infrastructure, use of unqualified tax personnel, public resistance to pay tax due to lack of awareness unconventional means of tax administration.

Worlu and Emeka (2012) undertook a study on the impact of tax revenue on the economic growth of Nigeria with a special emphasis on infrastructural development from 1980 to 2007. The secondary data were analyzed using three-stage least square estimation technique. The result obtains showed that tax revenue stimulate economic growth through infrastructural development. They pointed out the need to create comprehensive fiscal policies and to strengthen the existing ones in line with macro-economic objectives and in the light of prevalent economic realities.

Pro researchers have used government spending on various sectors as proxy for infrastructural development in isolation, no researcher has used total capital spending of government as a proxy for infrastructural development. The current research intends to fill this gap using total capital expenditure to proxy infrastructural development.

3.0 Research methodology

The scope of this study is limited to total federally collected revenue from oil and non-oil sources and infrastructure development in Nigeria. The study covers the period of 1981 – 2018 making it one of the most recent works in this area.

This research work was designed to address the objectives and hypothesis. A literature review was used to determine the theoretical basis for research topic and prior research method conducted on various aspects of revenue generation and infrastructural development.

Econometric model was used in analysing data obtained in the study and the methodology was empirical. Descriptive statistics was also used in analysing the data with the ordinary least square method and scatter plot was employed to describe the relationship between revenue generation and infrastructural development in Nigeria.

3.1 Model specification:

In hypothesis 1, infrastructure development in Nigeria is expressed as a function of total revenue generated. That is:

$$\text{INFDEV} = f(\text{TRG}) \dots\dots\dots \text{i}$$

Where;

INFDEV = Infrastructure development (proxy by capital expenditure)

TRG = Total revenue generated (proxy by Total federally collected revenue)

The relationship expressed in equation form is

$$\text{INFDEV}_t = \theta_0 + \theta_1 \text{TRG}_t + U_t \dots\dots\dots \text{ii}$$

Where; $\theta_1 > 0$

In hypothesis 2, economic growth in Nigeria is expressed as a function of total revenue generated. That is:

$$\text{GDP} = f(\text{INFDEV}) \dots\dots\dots \text{iii}$$

Where;

INFDEV = Infrastructure development (proxy by capital expenditure)

GDP = Gross Domestic Product as proxy for economic growth.

The relationship expressed in equation form is

$$\text{GDP}_t = \theta_0 + \theta_1 \text{INFDEV}_t + U_t \dots\dots\dots \text{iv}$$

Where; $\theta_1 > 0$

3.2 Collection of data

The data used in this study were collected from the Federal Ministry of Finance, Federal Republic of Nigeria Official Gazette and various States Official Gazette, Office of the Accountant General of the Federation, Central Bank of Nigeria (CBN) statistical bulletin and National Bureau of Statistic (NBS) reports for various years covering 1981- 2018.

4.0 Results and discussion

Hypothesis 1 was tested using the regression model for Total Revenue Generated and Infrastructural Development (equation ii). The analysis was done using econometric software of STATA 13.

STATA 13 Regression output:

. *(2 variables, 38 observations pasted into data editor)

. regress infdev trg

Source	SS	df	MS			
Model	2956523.24	1	2956523.24	Number of obs =	38	
Residual	6458153.11	36	179393.142	F(1, 36) =	16.48	
				Prob > F	= 0.0003	
				R-squared	= 0.3140	
				Adj R-squared	= 0.2950	
Total	9414676.34	37	254450.712	Root MSE	= 423.55	

infdev	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
trg	.0777774	.0191587	4.06	0.000	.0389218	.116633
_cons	210.784	90.14886	2.34	0.025	27.9536	393.6143

On the basis of the above result, the regression equation can be written as:

$$\text{INFDEV} = 210.784 + 0.777774\text{TRG}$$

From the result of the analysis, $R^2 = 0.3140 \approx 31.40\%$. This implies that the independent variable, TRG included in the model is able to explain 31.40% of variation in the dependent variable INFDEV, while the remaining 68.60% is accounted for by disturbance (error) terms which are accommodated in the model specified.

This implies that the independent variable of TRG explains low variation in the dependent variable INFDEV and showed a weak relationship.

Also, in the above, the adjusted R^2 is 0.2950 which is less than R^2 value of 0.3140. This is because it has been adjusted for independent variables, TRG in the association with the dependent variable INFDEV.

From 38 observations, the F-test is statistically significant which means that the model is statistically significant.

The coefficient of TRG is .0777774 which implies that a unit increase in TRG, the INFDEV will increase by .0777774 holding all other factors constant.

Following the analysis of the hypothesis, we discover that $P > |t|$ of TRG is 0.000 and is less than 0.05 at 95% confidence interval, we have sufficient evidence to reject the H_0 and accept H_1 and conclude that revenue generated have significant effect on infrastructural development in Nigeria.

Descriptive statistics output for hypothesis 1

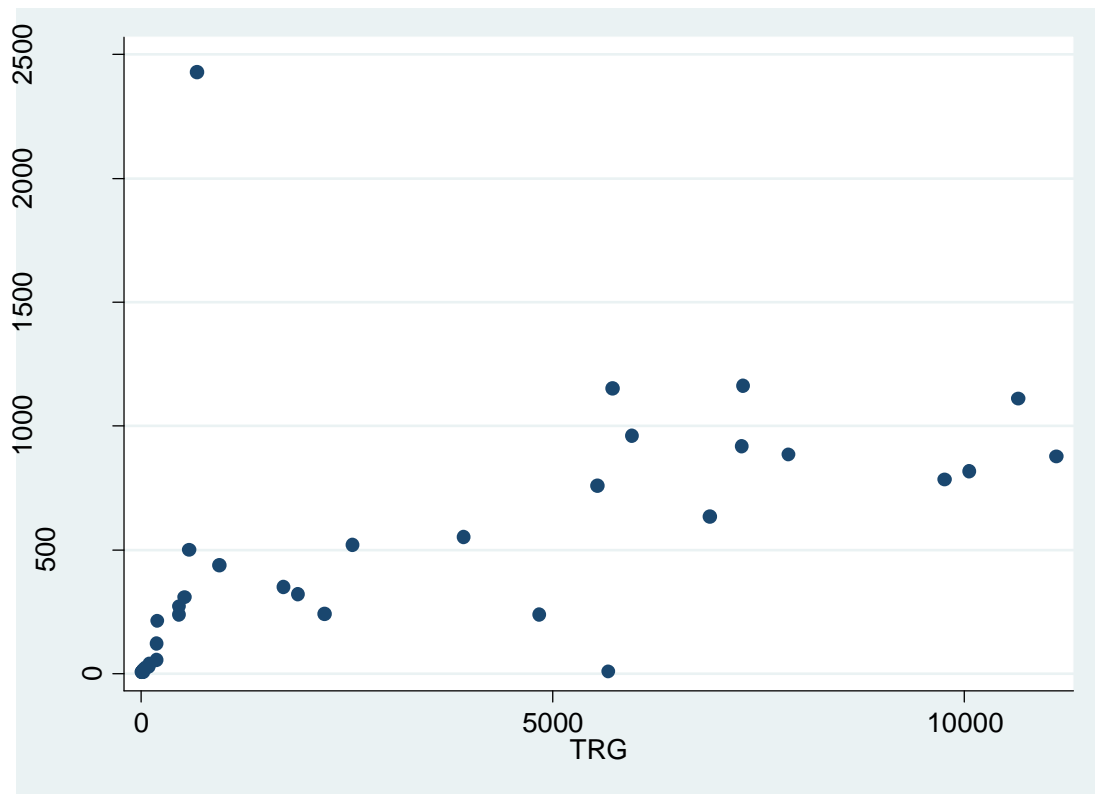
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. summarize trg infdev
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Variable	Obs	Mean	Std. Dev.	Min	Max
trg	38	3046.162	3634.43	10.51	11116.85
infdev	38	447.7066	504.4311	4.1	2428

From the analysis above, we discover that the mean of TRG and INFDEV are 3046.162 and 447.7066 for the period under review. This implies that a TRG above 3046.162 is considered above average and satisfactory while any value below 3046.162 is considered below average and non-satisfactory. INFDEV above 447.7066 is considered above average and satisfactory and reverse is the case if it is below 447.7066.

The maximum amount of TRG for the period under review is 11116.85 while its smallest is 10.51. On the other hand, the INFDEV has its maximum amount as 2428 and smallest amount as 4.1 for 38 Observations. The TRG and INFDEV has standard deviations of 3634.43 and 504.4311 respectively.

Scatter plot for hypothesis 1:



Hypothesis 2 was tested using the regression model for Total Revenue Generated and economic growth (equation iv). The analysis was also done using econometric software of STATA 13.

STATA 13 Regression output:

. *(2 variables, 38 observations pasted into data editor)

. regress gdp trg

Source	SS	df	MS			
Model	2.4189e+10	1	2.4189e+10	Number of obs =	38	
Residual	2.8462e+10	36	790613871	F(1, 36) =	30.59	
Total	5.2651e+10	37	1.4230e+09	Prob > F =	0.0000	
				R-squared =	0.4594	
				Adj R-squared =	0.4444	
				Root MSE =	28118	

gdp	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
trg	7.035065	1.271877	5.53	0.000	4.455579	9.61455
_cons	6125.181	5984.661	1.02	0.313	-6012.273	18262.64

On the basis of the above result, the regression equation can be written as:

$$\text{GDP} = 6125.181 + 7.035065\text{TRG}$$

From the result of the analysis, $R^2 = 0.4594 \approx 45.94\%$. This implies that the independent variable, TRG included in the model is able to explain 45.94% of variation in the dependent variable GDP, while the remaining 54.06% is accounted for by disturbance (error) terms which are accommodated in the model specified.

This implies that the independent variable of TRG explains approximately average variation in the dependent variable GDP and showed a weak relationship.

Also, in the above, the adjusted R^2 is 0.4444 which is less than R^2 value of 0.4594. This is because it has been adjusted for independent variables, TRG in the association with the dependent variable GDP.

From 38 observations, the F-test is statistically significant which means that the model is statistically significant.

The coefficient of TRG is 7.035065 which implies that a unit increase in TRG, the GDP will increase by 7.035065 holding all other factors constant.

Following the analysis of the hypothesis, we discover that P-value of TRG is 0.000 and is less than 0.05 at 95% confidence interval, we have sufficient evidence to reject the H_0 and accept H_1 and conclude that revenue generated have significant effect on economic growth in Nigeria.

Descriptive statistics output for hypothesis 2

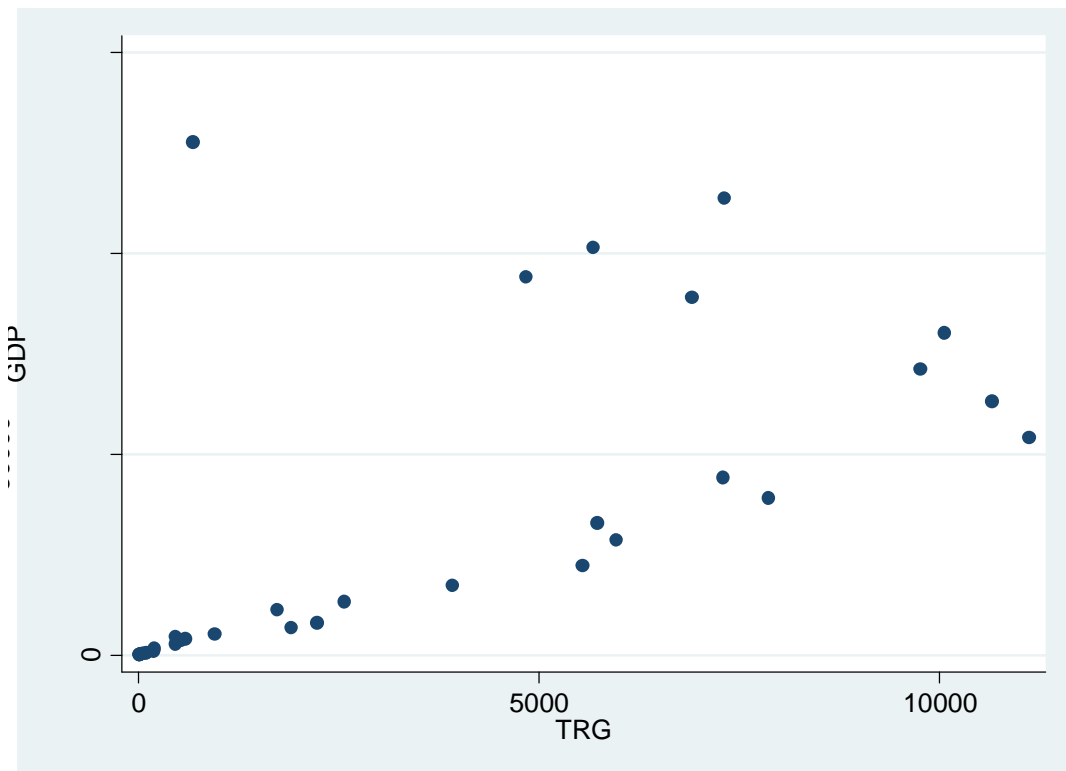
. summarize gdp trg

Variable	Obs	Mean	Std. Dev.	Min	Max
gdp	38	27555.13	37722.56	144.83	127762.6
trg	38	3046.162	3634.43	10.51	11116.85

From the analysis above, we discover that the mean of TRG and GDP are 3046.162 and 447.7066 for the period under review. This implies that a TRG above 3046.162 is considered above average and satisfactory while any value below 3046.162 is considered below average and non-satisfactory. GDP above 27555.13 is considered above average and satisfactory and reverse is the case if it is below 27555.13.

The maximum amount of TRG for the period under review is 11116.85 while its smallest is 10.51. On the other hand, the GDP has its maximum amount as 127762.6 and smallest amount as 144.83 for 38 Observations. The TRG and GDP has standard deviations of 3634.43 and 37722.56 respectively.

Scatter plot for hypothesis 2:



5.0 Conclusion

Every government particularly the government of developing countries (including Nigeria) depends on revenue (oil and non-oil) for its economic growth and development. In order to achieve the desired level of economic growth and development, the government has to make huge investment in infrastructural development. Infrastructure development has proved to be a catalyst for economic growth and development and should be pursued with every seriousness it deserves.

From the analysis of the study, the researcher concludes that revenue generated have significant effect on infrastructural development in Nigeria. Also, it was concluded that revenue generated have significant effect on economic growth in Nigeria.

The result of the analysis is consistent with the findings of other researchers with similar interest such as Worlu and Emeka (2012) and Akpan and Nnaseh (2013).

Following the results of the analyses, the study recommends that the government should intensify efforts in its revenue drive. This intensified drive should be geared toward boosting non-oil revenue like taxation owing to the unpredictability of the oil market. This work also recommends that a greater percentage (at least 60%) of the Nigeria's budget should allocated to infrastructural development as this will as this will boost economic development of the country.

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