Government Infrastuctural Spending and Economic Growth in Nigeria

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DOI: https://doi.org/10.47772/IJRISS.2023.70538

Received: 06 April 2023; Revised: 26 April 2023; Accepted: 02 May 2023; Published: 31 May 2023

ABSTRACT

The Nigerian government has consistently increased spending without a corresponding improvement in the country's economic growth trajectory. Using Hirschman's approach, this study investigated the impact of government spending on economic growth in Nigeria, analyzing annual data from 1970 to 2020. The study utilized data from the CBN Statistical Bulletin to examine government's spending in the transport, communication, health, education, and utilities sectors. An autoregressive distributed lag model was employed, and the results indicate a positive but non-significant short-term effect of communication and utility sector spending on Nigeria's economic growth. However, there was a negative but non-significant short-term effect of transportation, health, and education sector spending on Nigeria's economic growth. Thus, the study recommends that the government increase expenditure on the highlighted sectors, as well as the agricultural and petroleum sectors, which are areas where Nigeria is highly endowed. This approach will enable the country to achieve infrastructural development and positively impacting economic growth.

Keywords: government spending, transport, communication, health, education, utility sectors JEL classification: H50, H51, H52, H54, L91, L96, L97, Y10

INTRODUCTION

In Nigeria, sustaining economic growth is crucial for policymakers, as it is the driving force for moving the economy from a less developed state to a more developed one. Economic growth is the process of increasing the productive capacity of the economy over time, achieved through the provision of basic public infrastructure at full capacity (Kodongo&Ojah, 2016). Public infrastructure encompasses physical and organizational facilities that boost productivity and are essential for the growth of any nation. Adequate budget allocation towards infrastructure development is necessary to attain infrastructural development and economic growth. The government's spending priorities and allocations, which are influenced by estimated revenues, affect economic growth through various economic activities. The government's expenditure is an outward flow of resources from the government to other sectors of the economy, and it includes recurrent and capital components. Recurrent expenditure is mainly focused on maintaining existing infrastructure and paying salaries, while capital expenditure involves investing in new infrastructure, such as highways, water, electricity, and communications facilities that can boost aggregate production.

Government expenditure affects economic growth through various facets that connect with economic activities (Buari, Alexander, Saheed, & Alfa, 2020). According to Central Bank of Nigeria (2020), government expenditure is an outward flow of resources from government to other sectors of the economy. It is divided into recurrent and capital components such as highways, water, electricity and communications facilities which may enter directly into private-sector production or even into aggregate production function. Recurrent expenditure on the other hand is majorly devoted to the maintenance of already existing infrastructure and payment of salaries (Deng, 2013).

The Nigerian government has spent huge amounts for the development of capital infrastructure in the

country over the years. For instance in 2010, the government spent N883.87 billion on capital expenditure, N713.3 billion in 2011, N744.42 billion in 2012, N405.37 billion in 2013 and the list continues. In 2013, power sector had 80.17 per cent of budget releases, transportation sector had 50.49 per cent, health sector had 79.37 per cent and education sector had 65.37 per cent of budget releases respectively (Central Bank Nigeria [CBN], 2020). Despite statistical evidence of the huge amounts that have been consistently spent for the development of public infrastructures in Nigeria, public infrastructure development in Nigeria still requires more to be desired(CBN 2020). This leads to scenario in which road systems are neglected and in bad states within the country, public transport and telecommunication systems are unreliable, power generation and distribution have reduced tremendously resulting in epileptic supply and there has been dearth of equipment and infrastructure in public universities resulting in frequent strike. The infrastructural development and concomitant economic growth as a result of the huge investment seems to elude the country.

Despite government's spending for the provision of infrastructures in Nigeria, Nigeria's economic growth is still not sustained and is unstable as presented in Figure 1.For instance, the average growth rate increased from 26% to 34% between 1970 and 1979 and fell on average to -3.4per cent between 1980 and 1984 (see Figure 1.2). Between 2000 and 2004 economic growth was 11.52per cent and further declined substantially from 24.2 per cent to 8.48 per cent during the period 2000 and 2014 respectively. The Nigerian economy continues to face wide fluctuation in its GDP growth rates is depicted in Figure 1.

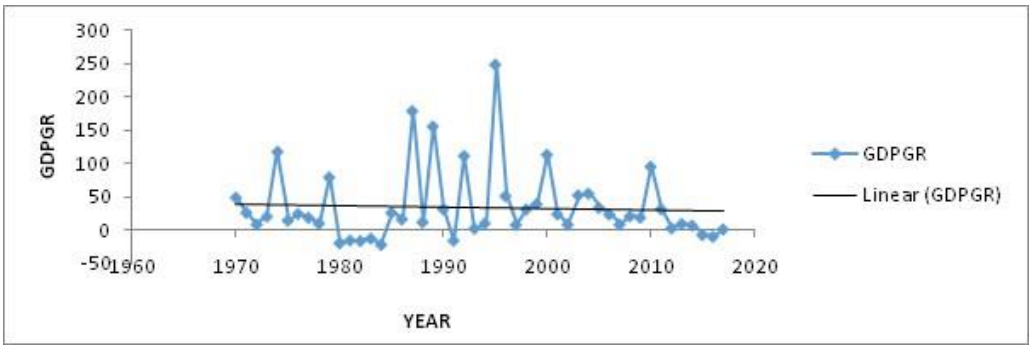

Fig 1: Trends of Nigeria's Economic Growth Rate (1970 – 2020) Source: CBN Statistical Bulletin (2020)

In a bid to maintain and furthermore sustain increases in its GDP growth, policy measures aimed at improving infrastructural development were incorporated in Nigeria's national development plans, structural adjustment program, petroleum special trust fund, national economic empowerment development strategy, poverty eradication programs, etc. Whereas there has been consistent rise in government spending for infrastructural development, the gap between budgeted infrastructural expenditures and available infrastructure is evident. More worrisome are the claims that continuous increases in Nigeria's external debts are geared towards augmenting the budget, this effort seems not to reflect on the available infrastructures on ground and have not been able to address the question of bourgeoning infrastructural needs in the country. This infrastructural gap is the interest of this research. Thus the aim of this paper is to determine the impact government spending on infrastructure has on Nigeria's economic growth.

This sectoral approach is adopted so as to broadly analyse the impact government spending on these selected sectors has on economic growth in Nigeria by providing specific answers to the following question: What impact does government spending on the transport, communication, health, education, and utility sectors have on Nigeria's economic growth? To achieve our aim, the paper is structured as follows: Following the introductory section is the review of extant literature, research methods, result presentation, analysis, and discussion, while the paper concludes with some policy recommendations.

EMPIRICAL REVIEW OF LITERATURE

A review of extant empirical studies on the impact of government expenditure for key infrastructure on Nigeria's economic growth show that the Hirschman's theory on infrastructural development has not been satisfactorily interrogated. Some of these related literature include that of Ehizuelen (2016) which employed the ordinary least square in determining the dynamic linkages between government infrastructural development and economic growth in Nigeria. The results reveal that government investment in infrastructure had a positive impact on Nigeria's economic growth.

Existing empirical literature on the impact of infrastructural government spending on economic growth have mainly focused on cross-country evidence with the production function framework to estimate the effect of government spending on infrastructure on economic growth (Kodongo & Ojah, 2016; Nurudeen, Sani, &Adewinle (2021), but totally neglecting the key sectors that constitute public infrastructure. However, other empirical literature on the impact of government spending for infrastructure on economic growth are single sector studies (e.g., telephone, roads) (Aigheyisi, & Oaikhenan, 2015; Ogunlana, Yaqub, & Alhassan, 2016) in disregard of the multidimensional nature of public infrastructure. Not minding these efforts by scholars to bridge this gap, there is still gap in empirical literature because bulk of the previous literature focused on whole sector analysis of government spending for infrastructure and economic growth.

Usman, Agbede and Bako (2017) examined the impact of government infrastructural expenditure on economic growth in Nigeria using OLS and granger causality test for the period 1970-2010. The results reveal that in the long run, both recurrent expenditure and capital expenditure on infrastructure had positive and significant impact on economic growth, whereas the short-run results show positive and significant impact of recurrent expenditure and negative but significant impact of capital expenditure on economic growth. The granger causality test shows unidirectional causality running from economic growth to capital expenditure and from recurrent expenditure to economic growth, while bi-directional causality runs from capital expenditure to recurrent expenditure.

While Akpan (2020) found no significant impact of government expenditure on economic growth in Nigeria, Odubuasi, Ifurueze and Ezeabasili (2020) employed the autoregressive distributive lag model and found that government capital and recurrent expenditures on highway and safety had positive and significant effects on Nigeria's economic growth.

Amadi and Alolote (2020) studied the effects of government infrastructural expenditure on economic development in Nigeria using secondary data for the period 1981 to 2018. Vector error correction model was used with government expenditure on key sectors of the economy such as transport, communication, education, health, agriculture and natural resources as the independent variables whereas economic growth proxied by GDP was the dependent variable. The findings show that government spending on transport, communication, education and health infrastructure had significant positive effect on economic growth while government spending on agriculture and natural resources infrastructure had a significant inverse effect on economic growth in Nigeria.

Nurudeen, Sani, and Adewinle (2021) employed the ordinary least square and Granger causality methods and the results showed a positive and significant impact between government spending and economic growth.

Ojo and Ojo (2022) studied Nigeria's health expenditure, education, and economic growth, from 1981 to 2019 using error correction model as an estimating approach with real GDP as the dependent variable and education expenditure index, the health expenditure index, inflation, life expectancy rate, maternal mortality rate and GDP growth as the explanatory variables. The results revealed that government expenditure on

education and health has a positive and significant impact on economic growth in Nigeria.

Okoli, Nwokoye, and Metu (2022) examined the empirical relation between government expenditure on specific sectors of the Nigerian economy to establish the existence of structural breaks in government expenditure as a strong factor that influenced Nigeria's economic growth using time series data from 1970 to 2020 sourced from CBN Statistical Bulletin and National Bureau of Statistics. Zivot Andrews test and granger causality test were the econometric tools employed in the analysis with gross domestic growth rate as the dependent variable and government spending on transport, communication, health, education, and utilities sectors as the explanatory variables. The results show that there were structural breaks experienced during the study period for economic growth and aggregate spending in Nigeria while no causal link was established between the growth rate of the government spending for infrastructure and sectoral growth in Nigeria.

Asiagwu, Ugherughe, and Ezeabasili (2023) empirically investigated public expenditure and economic development of Nigeria using a disaggregated analysis approach using relevant data spanning from 1981-2021 sourced from Central Bank of Nigeria (CBN) Statistical Bulletin. Descriptive statistics, Augmented Dickey Fuller (ADF), Unit root test, Granger causality and Ordinary Least Square (OLS) regression were the analytical tools for the study. Real Gross Domestic Product (RGDP) was used as the dependent variable while capital and recurrent expenditures on administration, economic services, Social and Community Services, Transfers were used as the independent variables. The results show that all the variables were normally distributed according to the descriptive analysis, the regression plane is statistically significant and there exists a statistically significant relationship among the variables employed in the analysis. There is the existence of a long-run relationship among the variables as the result of the Johansen co-integration test indicates six co-integration equation. The study recommended that Government spending if properly managed will raise the nation's production capacity and employment, which in turn increase economic growth in Nigeria. Also government should increase its expenditure on rural development, roads, water and electrification in order to accelerate the level of productivity, increase income and raise the standard of living of poor citizens in Nigeria.

Coman, Lupu and Nu?? (2023) wrote on the impact of public education spending on economic growth in Central and Eastern Europe which aimed at analyzing the impact of public spending on economic growth in 11 former communist Eastern European states by analyzing the education sector. The methodology used was ARDL with structural break. The results shows that public education expenditure-economic growth relationship is mixed on long term for five countries where as there is one on a long term for six countries. On a short term also, mixed results manifest for four countries which have positive impact, and two countries with negative outcomes. The study therefore recommends that the government of communist countries should invest heavily into education as this will enable them attain economic growth.

Iliyasu and Muhammed (2023) worked on growth effects of government expenditure in Nigeria emphasizing on corruption as a factor. The paper carried out an empirical analysis of direct and indirect links among growth, government expenditure and corruption in Nigeria using annual time series data for the period from 1990 to 2020. The autoregressive distributed lag (ARDL) model was used to explore the long-run interacting effect of corruption on the nexus between growth and government expenditure. The modified ordinary least squares and dynamic ordinary least squares were used as alternative techniques of estimation. The results show that an increase in government expenditure and a reduction in corruption has a significant increasing effect in the short-term and long-term growth when studied directly but indirectly, reducing corruption enhances the increasing effect of government expenditure on economic growth. The study therefore recommends that attaining sustained growth is possible by raising government expenditure and minimizing corruption.

Thus, minimizing corruption associated with increased government expenditure on infrastructure should be

a top policy priority for Nigeria to attain economic growth.

Aside Okoli, et al. (2022) and Amadi and Alolote (2020) which made attempts at disaggregating Nigeria's infrastructure into its various components, the literature is replete with studies that aggregated this basic factor of economic progress. As such, these studies neglected the need for policy interventions aimed at adopting Hirschman's theory of investing in the critical sectors of the economy that comprise the public infrastructure in the country in order to ensure a trickle-down effect on sectoral growth of the economy. More so, our paper stands in this gap as the methodologies used in Okoli, et al. (2022) and Amadi and Alolote (2020) are deficient in achieving this aim.

METHODOLOGY

Model Specification

Our paper is framed on a hybrid of the new growth theory and unbalanced growth theory. According to Hirschman (1958) who postulated the unbalanced growth theory, for developing countries such as Nigeria to witness economic growth, there is need to choose and invest in the critical/key sectors of the economy that comprise the public infrastructure in the country, so that there will then be trickled down effects to other sectors of the economy. This idea was neglected by previous studies (Ehizuelen, 2016; Owolabi, 2015; Siyan & Adegoriola, 2017), hence, this study adopts Hirschman's approach which was used for European countries in the Nigerian context as a robust model to incorporate and empirically examine the impact which government spending on five key selected sectors of the economy have on the Nigeria's economic growth. These sectors include education, health, communications, transportation and conventional public utilities like water, power, irrigation, and drainage schemes (Todaro& Smith, 2006).

The new growth theory on the other hand holds that economic growth is primarily a result of endogenous (not external) forces. It holds that investment in human capital, innovation, and knowledge are significant contributors to economic growth. The theory also focuses on positive externalities and spill over effects of a knowledge-based economy which leads to economic development and it primarily holds that the long run growth rate of an economy depends on policy measures. It models technological progress with a single parameter (usually A) and makes the assumption that the production function does not exhibit diminishing returns to scale to lead to endogenous growth. If the same level of capital and labour is used, we have the aggregate production function:

$$Y = f(K, L, A) \qquad 1$$

Where K is capital, L is labour and A is Technological progress. On the other hand, the unbalanced growth theory postulates that investment should be made in selected sectors rather than simultaneously in all sectors of the economy. Most underdeveloped or developing countries do not possess capital and other resources in such quantities as to invest simultaneously in all sectors. Therefore, investment should be made in a few selected sectors or industries for their rapid development, and the economies accruing from them can be utilized for the development of other sectors. Thus, the economy gradually moves from the path of unbalanced growth to that of balanced growth. The concept of unbalanced growth has been popularized by Hirschman. It is his contention that deliberate unbalancing the economy, according to a pre-designed strategy, is the best way to achieve economic growth in an underdeveloped country like Nigeria. According to Hirschman, investments in strategically selected industries or sectors of the economy will lead to new investment opportunities and so pave the way for further economic development. Hirschman maintained that development can only take place by unbalancing the economy through investing either in social overhead capital (SOC) or in directly productive activities (DPA). Social Overhead Capital has been defined as comprising those basic services without which primary, secondary and tertiary productive activities cannot function. SOC includes government investments in education, public health,

communications, transportation and conventional public utilities like light, water, power, irrigation and drainage schemes, etc.

Hirschman unbalanced growth model is specified as

$$Q(t) - \psi\lambda(t) = \psi\theta(t) \quad 2$$

$$Y(t) = \psi\theta(t) \quad 3$$

Where Y(t) = output from social overhead capital (SOC). $\psi\theta(t)$ = social overhead capital (SOC) at time t given input requirements. Equation 3 presents the core sectoral variables and hence is employed to satisfy the objectives of this study.

Having looked at the theoretical underpinnings of the impact of government spending for infrastructure on economic growth from a combination of the endogenous growth model and

unbalanced growth theory, the task in this section is to construct a model relating the various key variables identified as factors within the context of impact of governments' infrastructural development activities and economic growth. Therefore Equation 1 can be reconstructed as:

$$GDP = f(K, L, SOC) \quad 4$$

Where SOC was further decomposed into government spending on sectors such as transport, communication, health, education, and utilities. The model adapted for this study is predicated on the endogenous growth framework of Barro (1990)and modified to include the unbalanced growth model is thus:

$$GDP = f(GFC, HDI, TRANS, COMM, HTH, EDU, UTL) \quad 5$$

The mathematical and econometrical form of the model with the variables converted to growth rates is given as:

$$GDPGR = \beta0 + \beta1GFCGR + \beta2HDIGR + \beta3TRANSGR + \beta4COMMGR + \beta5HTHGR + \beta6EDUGR + \beta7UTLGR + \mu \quad 6$$

Where GDPGR, GFCGR, HDIGR, TRANSGR,COMMGR, HTHGR,EDUGR, and UTLGR are gross domestic product growth rate as measure of economic growth; gross fixed capital growth rate as measure of capital; human development index growth rate as measure of human capital (labour); growth rate of government spending on transport; growth rate of government spending on Communication; growth rate of government spending on health; growth rate of government spending on education; growth rate of government spending on utility; β0 to β7 are the parameters being estimated and μ is the error term which captures other variables not explicitly included in the model.

Following Pesaran et al (2001), the error correction model (ECM) of the unrestricted autoregressive distributed lag (ARDL) equation based on Equation 6 is specified as:

$$\Delta GDPGRit = \beta0 + \beta1GFCGRit + \beta2HDIGRit + \beta3TRANSGRit + \beta4COMMGRit + \beta5HTHGRit + \beta6EDUGRit = \beta7UTLGRit = \sum a1\Delta GDPGRit - i + \sum a2\Delta GFCGRit - i + \sum a3\Delta HDGRIit - i + \sum a4\Delta TRANSGRit - i + \sum a5\Delta COMMGRit - i + \sum a6\Delta HTHGRit - i + \sum a7\Delta EDUGRit - i + \sum a8\Delta UTLGRit - i\mu it \quad 7$$

Where μt was the error term

Nature and Sources of Data

The scope of the study covered the period from 1970 to 2020 and the secondary data on government spending in the specified sectors included in the analysis were sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin 2020 edition. The period is critical in order to assess governments' efforts to achieve infrastructural development in the country from post-independence to post structural adjustment program period. The post structural adjustment program period of interest incorporates salient economic reform programs in the country such as, petroleum special trust fund, national economic empowerment development strategy and poverty eradication programs all aimed at achieving infrastructural development in the country.

Estimation Technique and Procedure

The time series properties of the variables included in the model was initially tested using the augmented dickey-Fuller (ADF) test and the specific objectives were achieved using the autoregressive distributed lag (ARDL) bounds testing approach to co-integration. The 9.0 version of the econometric views software was used for regression analysis.

RESULT PRESENTATION, ANALYSIS, AND DISCUSSION OF RESULTS

Result Presentation Data analysis using descriptive statistics were carried out and the results were presented on Table 1

Table 1: Summary of Descriptive Statistics Results

	GDPGR	EDUGR	COMMGR	UTLGR	TRANSGR	HTHGR
Mean	32.85521	19.74336	40.51198	22.75934	26.56237	13.65846
Median	18.24931	2.281849	6.767412	4.277760	4.010876	2.281816
Maximum	249.8337	319.4245	1358.524	414.5251	878.5893	244.5822
Minimum	-22.31385	-83.87890	-29.43548	-74.35900	-29.51654	-62.15420
Std. Dev.	53.44885	62.71433	190.6371	79.99751	124.2182	43.28973
Skewness	2.119316	3.342959	6.671228	3.600283	6.517488	3.638828
Kurtosis	7.800594	15.08377	46.61422	16.56436	45.16370	18.57866
Jarque-Bera	87.14987	405.2777	4420.470	501.1598	4138.837	628.2754
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	1675.616	1006.911	2066.111	1160.726	1354.681	696.5813
Sum Sq. Dev.	142839.0	196654.4	1817125.	319980.1	771507.7	93700.04
Observations	51	51	51	51	51	51

Table 1 contain the summary of descriptive statistics of the variables included in the model. It showed the existence of wide variations in the variables as depicted by the mean values during the 1970 to 2020 study period. The standard deviation is a widely used measure of the variability or dispersion, being algebraically more tractable though practically less robust than the expected deviation or average absolute deviation. A low standard deviation indicates that the data points tend to be very close to the mean, and vice versa. Significantly, kurtosis which shows the degree of peakness is also shown together with skewness which is a

reflection of the degree of or departure from symmetry of the given series. All the variables are positively skewed. All the variables are leptokurtic (highly peaked/ slim or long tailed) because they have kurtosis more than three. There is also no mesokurtic (normal kurtosis) kurtosis for none is equal to three. Jarque-Bera test of normality is used to see whether the series are normally distributed. The p-value of the Jarque-Bera test indicated that most of the series are normally distributed.

Unit rot properties of the variables

Table 2: Unit root test results

Variable	ADF Statistic values	Test Critical values @ 5%	Order of Integration
GDPGR	-6.945333	-2.925169	I (0)
GFCGR	-6.761319	-2.925169	I (0)
HDIGR	-3.592462 -3.623757	-3.623757 -2.931404	I (0) I (1)
TRANSGR	-6.465626	-2.925169	I (0)
COMMGR	-7.060629	-2.925169	I (0)
HTHGR	-4.226815 -9.792461	-9.792461 -3.536601	I (0) I (1)
EDUGR	-3.605593 -8.631049	-8.631049 -2.936942	I (0) I (1)
UTLGR	-6.229138	-2.925169	I (0)

Results on Table 2 show that the growth rates of human development index, government spending on health sector, and education sector were stationary at first difference and therefore integrated of order I(1). The unit root results also shows that the growth rates of the GDP, gross fixed capital formation, government spendings on transportation sector, communication sector and utility sector were all stationary at level. Thus, the null hypothesis of no stationarity was rejected for all the variables in favour of the alternative hypotheses which states that there is stationarity for all the variables used in the study.

Autoregressive Distributed Lag (ARDL) Bound Test Result

The long run dynamic relationship among the variables in the model was tested using the ARDL modelling approach in line with Pesaran and Pesaran (1997) procedure. The wald test (F-statistics) tested for joint (overall) significance of the co-efficient of all the variables in the model. The decision rule is that if the computed F-statistics exceeds the upper bound value I(1), then the null hypothesis is rejected which indicates that there is co-integration. Otherwise, if computed F-statistics falls below the lower bound value I(0), the null hypothesis of no co-integration is accepted. If the computed result falls between the lower and upper bound values, the test is inconclusive.

Table 3: Wald Bounds Test of Presence of Co-integration in ARDL including the Critical Lower and Upper Bound Values for the periods

Significance	Lower Bound I(0)	Upper Bound I(1)
10%	2.03	3.13
5%	2.32	3.50
2.5%	2.60	3.84
1%	2.96	4.26
Test Statistic	Value	K
F-statistic	5.683170	7

Source: E-views 9 computation

Table 3 shows the Wald bounds test. The F-statistics is 5.683170 and it exceeds the upper bound values at 1 per cent, 2.5 per cent, 5 per cent and 10 per cent critical values. This shows an evidence of co-integration among the variables in the model. The estimated long run coefficients of the variables are contained on Table 4.

Table 4 Long-Run Dynamic Analysis

Variable	Coefficient	Std. Error	T-Statistic	Prob.
D(GDPGR(-1))	-0.105336	0.149776	-0.703292	0.4858
D(TRANSGR(-1))	0.169386	0.299569	0.565432	0.5749
D(COMMGR(-1))	-0.115757	0.185216	-0.624984	0.5354
D(EDUGR(-1))	0.045699	0.146092	0.312808	0.7560
D(HTHGR(-1))	-0.231122	0.189366	-1.220504	0.2292
D(UTLGR(-1))	-0.080211	0.078043	-1.027776	0.3101
ECM(-1)	-0.967796	0.215004	-4.501294	0.0001
R-squared	0.538074			
Adjusted R-squared	0.459209			
S.E. of regression	57.01705			
Sum squared resid	133288.7			
Log likelihood	-263.2851			
F-statistic	6.822699			
Prob(F-statistic)	0.000022			

E-views 9 computations

The coefficient of GDPGR-1 (-0.105336) has a negative impact on economic growth which shows that a per cent increase in the growth rate of past GDP growth rate leads to a decrease in expected economic growth by 0.1 per cent on average. The coefficients of government spending on the transport and education sectors have positive impact on economic growth which means that a per cent increase in the growth rate of government spending on each sector leads to an increase in growth of the economy to about 0.17 and 0.05 per cent respectively. On the other hand, the coefficients of government spending on the communication, health and utility sectors have negative impact on economic growth which means that a per cent increase in the growth rate of government spending on each sector leads to a decrease in growth of the economy to about 0.11, 0.23 and 0.08 per cent respectively. The coefficient of error correction mechanism (ECM) is negative -0.967796 and significant at 0.05 per cent critical level as evident by the low probability value of 0.0001. This shows that about 0.97 per cent speed of adjustment is needed to correct the disequilibrium in Nigeria's previous GDP growth rate in the current year.

Table 5 Short-Run Dynamic Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(GDPGR(-1))	0.019381	0.160168	-0.121002	0.9043
LOG(TRANSGR)	-0.086898	0.477654	-0.181927	0.8566
LOG(COMMGR)	0.081565	0.292883	0.278490	0.7821
DLOG(HTHGR,1)	-0.343580	0.300338	-1.143978	0.2598
DLOG(EDUGR,1)	-0.128673	0.161151	-0.798459	0.4296
LOG(UTLGR)	0.028482	0.111852	0.254637	0.8004
ECM01(-1)	-58.814457	22.88350	2.570764	0.0245
R-squared	0.725013			
Adjusted R-squared	0.593734			
F-statistic	5.571497			
Prob. (F-statistic)	0.000071			
Durbin-Watson stat	1.981283			

E-views 9 computations

The coefficient of GDPGR -1 (0.019381) has a positive impact on economic growth which shows that a per cent increase in the growth rate of past GDP growth rate leads to an increase in expected economic growth by 0.02 per cent on average. The coefficients of government spending on the communication and utility sectors have positive impact on economic growth which means that a per cent increase in the growth rate of government spending on each sector leads to an increase in growth of the economy to about 0.08 and 0.03 per cent respectively. It can be inferred that government spending on the communication and utility sectors (especially the power) should be sustained so as to significantly increase economic growth in Nigeria which from the result they have the capacity to deliver.

On the other hand, the coefficients of government spending on the transportation, health and education sectors have negative impact on economic growth which means that a per cent increase in the growth rate of government spending on each sector leads to a decrease in growth of the economy to about 0.09, 0.34 and 0.13 per cent respectively. The government spending on the transport sector was not well utilised in promoting economic growth during the study period and also the frequent strikes experienced in the health and education sectors have contributed to the inability of the sectors to meet-up with the required level of infrastructural needs and services required to achieve the desired rate of economic growth in Nigeria.

The coefficient of error correction mechanism (ECM) is negative -58.814457 and significant at 0.05 per cent critical level as evident by the low probability value of 0.0245. This shows that about 59 per cent speed of adjustment is needed to correct the disequilibrium in Nigeria's GDPGR in the previous year in the current year.

Testing of Research Hypotheses

The hypothesis testing is based on the proposition that government spending on the transport sector, communication sector, health sector, education sector and utilities had no significant impact on economic growth in Nigeria during the study period.

From the ARDL short run result, we observed that the variables employed to examine the impact of government spending for infrastructure on economic growth (transport sector, communication sector, health

sector, education sector and utilities), were all insignificant as the probabilities of their absolute t-statistics were greater than the critical t0.05 value. This means that the sectors included in the model have no significant impact on economic growth in Nigeria.

Thus, we accept the null hypothesis and reject the alternative hypothesis hence we conclude that government spending on the transport sector, communication sector, health sector, education sector and utilities had no significant impact on economic growth in Nigeria during the study period.

Also worthy of notefrom the short run analysis is that since the absolute t-statistics of ECM (2.570764) is higher than the one from the table (1.684) while the absolute t-statistics of government spending on the transportation, communication, health, education and utility sectors are -0.181927, 0.278490, -1.143978, -0.798459 and 0.254637 respectively, and are all lower than the critical t0.05 value at 5 per cent level of significance. It can then be concluded that the growth rate of government spending on transportation sector, communication sector, health sector and education sector are not significant in describing variations in economic growth in Nigeria and should be ignored. The coefficient of determination (R2) during the period is 0.725013. This simply means that 73 per cent of the variations in GDP growth rate in Nigeria are accounted for by the explanatory variables included in the studied model.

CONCLUSION AND RECOMMENDATION

The results generated by this study asserts that the theory of unbalanced growth which holds true for European countries cannot be validated for the Nigerian economy. The worry now is why did the theory work in these countries but failed in the Nigerian context? This will require a little extrapolation from the results of this study. Nigeria is a highly populated country with seriously huge infrastructural needs of the populace. Therefore, even though government expenditure in these selected sectors have been on the increase over the years, this is not adequate to satisfy the demand for these facilities thereby creating a gap in the infrastructural development process of the country. There is the also the vandalization of existing facilities in the country possibly due to insecurity and ignorance. The maintenance and repairs culture of damaged facilities is also very poor. Funds were released but due to leakages, corruption, bureaucratic bottlenecks and delays, they were not fully spent to cater for the increased infrastructural needs of the citizens. This supports Olorunfemi (2015) findings that funds directed to the provision of infrastructures were either embezzled or out rightly diverted to less productive needs which are susceptible to corruption.

The policy implications for this study therefore is that Nigeria should not adhere strictly to the theory of unbalanced growth not minding it was effective in European countries where it was postulated because evidences from Nigeria do not support this theory. This study recommends that since Nigeria as an oil rich country and is endowed with vast landmass and human resources should rather look inwards to utilise its abundant natural endowments in the petroleum and agricultural sectors so that government spending in these sectors can enable the country achieve infrastructural development which will in turn positively impact on economic growth. Also, the financing options for closing Nigeria's infrastructure gaps should focus on broadening the sources of finance and a better allocation of public resources. In this wise, the government should intensify the utilisation of the public-private-partnership (PPP) framework as government alone cannot finance infrastructural development in an emerging market economy like ours. Therefore, Nigeria needs to be more pragmatic in her infrastructural development, in order to create employment and reduce poverty.

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