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Government Expenditure and Infrastructural Development in Nigeria: An Empirical Analysis of its Economic Effects

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Abstract. This study examined the impact of government expenditure on infrastructure development in Nigeria for the period 1986-2022. The research was guided by three research questions and objectives. The Ordinary Least Squares (OLS) estimation technique was employed for testing the hypotheses of the study. The result of the OLS analysis showed that government expenditure has a positive impact on health, education, and transport infrastructure development in Nigeria. To improve on the gains of infrastructure development in the Nigerian economy, the study recommends that government should encourage the health sector by increasing its funding to equip the infrastructure pertaining to health matters, government should intensify efforts to strengthen its source of revenue for spending on education, and there must be a greater private sector participation, particularly in the air transport and seaport development, as well as effective coordination among the national, state and local levels, on capital investment of transport projects.

Keywords: Government Expenditure, Health, Education, Transport, Infrastructure Development, Nigeria.

1. Introduction

Government expenditure on infrastructure is important for a number of reasons. It is a capital-intensive activity and its effects are felt in many areas such as production, construction, technology, and procurement (Babatunde, 2018). The availability of such infrastructure has a major impact on the lives of people in Nigeria (Fasoranti, 2012; Babatunde, 2018).

Development economists have long recognized the importance of government expenditure, particularly on infrastructure, as an important tool in the development process (Todaro and Smith, 2006; Jhingan, 2006). Government expenditure is thus a more efficient way of providing services and making investments in infrastructure. Classical economists also saw infrastructure as the sole responsibility of the governments in any nation (Fasoranti, 2012). This has translated to numerous budgetary allocations for infrastructure in Nigeria over the years. Government expenditure on infrastructure is so large because of the huge capital requirement, externalities, and jointness in the consumption of such goods (Buhari, 2000; Fasoranti, 2012).

The importance of government expenditure on infrastructure development in an economy cannot be understated. Investment in roads, communication networks, and electricity provision decreases the cost of production and encourages both public and private investment, leading to higher national output and development (Muhammad and Tasneem, 2017). Since 1986 when the Structural Adjustment Program (SAP) was implemented in Nigeria, the total government expenditure and its components have

steadily increased (Shuaib, Mohammed, and Igbinosun, 2015). The composition of government recurrent expenditure shows that expenditure on defense, internal security, education, health, agriculture, construction, transport, and communication has gone from ₦7 billion in 1986 to ₦9,145 billion in 2021 (CBN, 2021). Likewise, the components of capital expenditure such as defense, agriculture, transport and communication, education, power, and health have also increased from ₦8 billion in 1986 to ₦2,522 billion in 2021 (CBN, 2021). It is therefore expected that infrastructures in the Nigerian economy should benefit from this increased government expenditure. That is, as the level of government expenditure increases, the level of infrastructural development should increase as well.

The Nigerian government spends money on infrastructure projects such as education, defense, general administration, health, water supply, electricity generation and supply, roads, and telecommunications. Despite this, the country's infrastructure development has not improved as much as expected and the citizens' standard of living remains low. Scholars around the world have discussed the impact of government spending on infrastructure development in Nigeria, yet the poor infrastructure in the rural areas persist. After all, the Central Bank of Nigeria revealed there was increased government expenditure on infrastructure from ₦8 billion to ₦2,522 billion in 2021 (CBN, 2021). However, the gap still exist as there are yet no proof to confirm if government expenditure has translated into meaningful development in the transport, health, and education sectors. Therefore, the questions remain what impact does government expenditure have on health, education, and transport infrastructure development in Nigeria? In view of this, this study seeks to examine the impact of government expenditure on infrastructural development in Nigeria, particularly on health, education, and transport infrastructures. The aim is to assess the level of development of these sectors and identify the reasons for their underperformance. The study will be conducted over the period of 1986 to 2022, focusing on the health, education and transport sectors.

As a result, this paper will assist government, policy makers, economists, consultants, and procurement officers to power a wider debate on how funds are provided and managed for infrastructures in subsectors in the economy, and guide policymakers on how to create sustainable developmental policies that will aid in reducing the challenges facing the infrastructures as a result of poor and inappropriate government spending. The rest of the paper dwells on the theoretical framework, empirical literature, methodology, discussion of results, conclusion and policy recommendations.

2. Literature

2.1 Theoretical Framework

The New Growth Theory, also known as the Endogenous Growth Model, is a key component of the emerging development theory that provides a theoretical framework to explain persistent GDP growth that is determined by the system governing the production process (Lucas Jr., 1988). This is in contrast to traditional neoclassical theory, which holds that GDP growth is a natural consequence of long-run equilibrium. The New Growth Theory is based on the idea that economic growth is an endogenous process and is determined by the system governing the production process rather than external factors (Lucas Jr., 1988). This new theory links growth with factor inputs and other public stock, which can be represented using a production equation as follows:

$$Y = f(A, K, L, I) \quad \ldots\ldots[1]$$

where A is technical change, K is the private capital stock, L is the share of labour force employed in sector I, I is the investment on public infrastructure, and Y denotes the output (value added) of the sector.

2.2 Empirical Literature

Arowolo, Amao, and Adebayo (2021) investigated the effect of government expenditure on economic growth in Nigeria from 1980 to 2020. The time series data were collected from CBN statistical bulletin of 2020, National Bureau of Statistics (NBS) of 2019, and World Bank Data of 2019, and were analyzed using the Ordinary Least Square (OLS) multiple regression estimation technique. The findings revealed that government expenditure (capital and recurrent) had a positive linear relationship with economic growth in Nigeria. In addition, the results indicated that government capital expenditure had a significant positive effect on the growth of Nigerian economy. Moreover, the study showed that government recurrent expenditure had a non-significant positive effect on economic growth in Nigeria.

Ayodele and Okeke (2020) evaluated the relationship between government expenditure and economic

growth in Nigeria from 1980 to 2018. The study employed the Engle-Granger co-integration and error correction modeling estimation techniques for its analysis. The data were sourced from CBN statistical bulletin of 2019, National Bureau of Statistics (NBS) of 2018, and World Bank Data of 2018. The findings revealed that there was a positive long-run relationship between government expenditure and economic growth in Nigeria. It also showed that government expenditure on health and education had a positive, but non-significant effect on economic growth in Nigeria. In addition, the study revealed that government expenditure on infrastructure, agriculture, and defense had a positive and significant effect on economic growth in Nigeria. However, government expenditure on transport had a negative and significant effect on economic growth in Nigeria.

Akande, Adeleke, and Kanu (2019) assessed the impact of government expenditure on economic growth in Nigeria from 1986 to 2017. The data were sourced from CBN statistical bulletin of 2018, National Bureau of Statistics (NBS) of 2017, and World Bank Data of 2017. The study utilized the Engle-Granger co-integration and error correction modeling estimation techniques for its analysis. The findings revealed a positive long-run relationship between government expenditure and economic growth in Nigeria. It also showed that government expenditure on health and education had a positive, but non-significant effect on economic growth in Nigeria. Furthermore, the study revealed that government expenditure on infrastructure and agriculture had a positive and significant effect on economic growth in Nigeria. Additionally, the study showed that government expenditure on defense and transport had a negative and significant effect on economic growth in Nigeria.

Chinedu, Daniel, and Ezekwe (2018) ascertained the impact of sectoral spreads of government expenditure on economic growth in Nigeria from 1980 to 2017. The time series data were obtained from CBN statistical bulletin of 2017, and were analyzed using the error correction model (ECM) estimation technique. The findings submitted that there was a positive impact of sectoral spreads of government expenditure on economic performance in Nigeria. The study also verified that government expenditure on agriculture and defence had statistical significant effect on economic performance in Nigeria, while government expenditure in transportation and communication, health and education were not statistically significant on economic performance in Nigeria.

Okolo, Edeme, and Emmanuel (2018) examined the impact of capital expenditure on infrastructural development in Nigeria, utilizing time series from 1970 to 2017. The data for their study were sourced from CBN statistical bulletin of 2018, and were analyzed with the used of autoregressive distributed lag (ARDL) model. The findings of the analysis revealed that capital expenditure, construction expenditure, and non-oil revenue have the potency of accentuating infrastructural development in the long-run but such is being hampered by external debt.

Charles, Onuchuku, and Tamuno (2018) investigated the impact of government expenditure on construction, transport, and communication on economic growth in Nigeria between 1980 and 2016. Time series data were sourced from secondary sources via CBN statistical bulletin of 2017, which were analyzed using the Engle-Granger co-integration and error correction modeling techniques. The result of the analysis revealed that both government expenditure on construction, transport, and communication had a negative relationship with economic growth, and also do not impact on it.

Ewubare and Maeba (2018) examined the effect of public expenditure in construction and transportation sectors on employment in Nigeria from 1980 to 2017. The time series data were collected from CBN bulletin of 2017, and were analyzed by employing the co-integration test and error correction mechanism (ECM) estimation techniques. From the findings, it was revealed that in the long-run, there existed a long-run relationship or equilibrium among the variables. It also showed that in the long-run, government expenditure will address the pitfalls in the country employment. Government expenditure in the transport sector was not statistically significant with employment rate, while government expenditure in the construction sector was statistically significant with employment rate.

Obasikene (2017) examined government expenditure in Nigeria and its impact on the Nigerian economy from 1986 to 2014. The study used annual time series data extracted from CBN statistical bulletin of 2015, which was analyzed by the used of multiple regression techniques of the Ordinary Least Squares (OLS). The results revealed that government expenditure (capital and recurrent) and broad money supply have positive linear relationship with economic growth in Nigeria. In addition, government capital expenditure has significant positive effect on the growth of Nigerian economy. Whereas, government recurrent expenditure has a non-

significant positive effect on economic growth in Nigeria.

Oyediran, Sanni, Adedoyin, and Oyewole (2016) examined the relationship between government expenditure and economic growth in Nigeria from 1980 to 2013. Time series data were collected from secondary sources through the National Bureau of Statistics (NBS) and CBN statistical bulletin of 2014, and were analyzed using the Ordinary Least Square (OLS) multiple regression estimation technique. The finding showed that in Nigeria, there exist a significance relationship between the government expenditure and economic growth.

Peter (2015) evaluated the effects of public expenditure on selected macroeconomic variables from 1986 to 2012. Public expenditure was disaggregated into two components; capital expenditure and recurrent expenditure. The time series data for the study were sourced from CBN statistical bulletin of 2013, and various issues of National Bureau of Statistics (NBS) annual reports. The data were analyzed using the impulse response function from estimated vector error correction model and granger causality test. The findings showed that capital expenditure had positive impact on GDP growth rate and exchange rate, and negative impact on inflation and unemployment rate. It also revealed that recurrent expenditure had a positive impact on unemployment and exchange rate, and negative impact on inflation and GDP growth rate.

Shuaib, Mohammed, and Igbinosun (2015) examined the impact of government expenditure on economic development in Nigeria, using time series from 1960 to 2013. They employed secondary data sourced from Financial Reviews of CBN, 2014 and National Bureau of Statistics (NBS) of 2014. The data were analyzed with the use of Least Square Tests and Robust Least Squares analysis. Their findings submitted that there is a significant or direct relationship between government expenditure and economic development in Nigeria.

Edame and Fonta (2014) analyzed the macroeconomic impact of public expenditure on infrastructure and economic growth in Nigeria from 1970 to 2016. The study employed the co-integration and error correction mechanism (ECM) approach for its analysis, and the secondary time series data for the analysis were sourced from CBN statistical bulletin of 2007, World Bank Data, the International Financial Statistics (IFS) of the International Monetary Fund (IMF), and the Federal Bureau of Statistics (FBS) of 2008. The findings revealed that the level of public infrastructure such as road construction, water supply, electricity supply, transport/telecommunication, and housing/environment is very low, particularly in the short-run and with a weak adjustment toward long-run static equilibrium.

Greg and Agboro (2014) examined the determinants of public expenditure on infrastructural facilities in education and economic growth in Nigeria from 1970 to 2009. Time series data on variables considered were sourced from CBN statistical bulletin of 2010, National Population Commission, National Bureau of Statistics (NBS), and World Bank Data of 2010. The study employed the Ordinary Least Squares (OLS) estimation technique for its analysis. The findings submitted that public expenditure on education had a significant impact on economic growth. However, expenditure on education was different between regimes, and was not significant.

Agbonkhese and Asekome (2014) assessed the impact of public expenditure on the growth of the Nigerian economy, and to ascertain whether there is a relationship between gross domestic product (GDP) and government in Nigeria from 1981 to 2011. The time series data were obtained from CBN statistical bulletin of 2012, which were analyzed with the Ordinary Least Square (OLS) estimation technique. Findings from the analysis revealed that there was a positive relationship between gross domestic product (GDP) and government expenditure in Nigeria.

Fasoranti (2012) examined the effects of government expenditures on infrastructure on the growth of the Nigerian economy from 1977 to 2009. The data were sourced majorly from the various issues of CBN statistical bulletin of 2010, which were analyzed with the estimation techniques of vector error correction estimation and multiple regression model. findings revealed a long-run relationship between the growth of the economy and government expenditures in education, environment and housing, health services, water resources, inflation rate, agriculture, security, transport and communication. The findings also submitted that government expenditures on health services, transport and communication impacted negatively on growth while expenditures on agriculture and security were not significant on the growth of the economy.

However, none of the existing literature on government expenditure and economic growth in Nigeria has examined the impact of government expenditure on infrastructural development. Previous works such as Greg and Agboro (2014), Ewubare and

Maeba (2018), Charles et al (2018), and Fasoranti (2012) have only focused on one infrastructural variable, such as transportation, education, and health, and do not extend their scope to the present day, utilizing the latest available data. This study seeks to fill this gap by employing a multiple regression estimation technique to examine the impact of government expenditure on infrastructural development in Nigeria, using the annual time series data spanning the period of 36 years, from 1986 to 2022. Variables such as total government expenditure (capital and recurrent), health infrastructure expenditure, education infrastructure expenditure, and transport infrastructure expenditure will be included in the analysis.

3. Methodology

3.1 Types and Sources of Data

This study will use secondary data from Central Bank of Nigeria (CBN) statistical bulletin (2022) and World Development Indicators (2022) covering 36 years (1986 – 2022). The data utilized consists of annual observations on infrastructural development proxied by government capital expenditure on health, government capital expenditure on education, and government capital expenditure on transport as dependent variables; recurrent expenditure and capital expenditure as independent variables. To investigate the impact of government expenditure on health, education, and transport infrastructure development in Nigeria, this study will employ the Ordinary Least Squares (OLS) estimation technique. The OLS is a linear least squares method used to estimate the unknown parameters in a linear regression model by minimizing the sum of the squared differences between the observed dependent variable in the given dataset and those predicted by the linear function (Gujarati and Porter, 2009).

3.2 Model Specification

By adopting the New Growth theoretical framework in Equation [1], it linked growth with factor inputs and other public stock. With this specification, the model adopted the Ordinary Least Squares (OLS) model to achieve the objectives of the study. Therefore, a three-equation model was formulated and used for this study.

The first equation examined the impact of government expenditure on health infrastructure development in Nigeria. Thus, the functional relationship is stated as in Equation [2]:

$HDI = f(RGEX, CGEX)$ …… [2]

The second equation examined the impact of government expenditure on education infrastructure development in Nigeria. Thus, the functional relationship is stated as in Equation [3]:

$EDI = f(RGEX, CGEX)$ …… [3]

The third equation examined the impact of government expenditure on transport infrastructure development in Nigeria. Thus, the functional relationship is stated as in Equation [4]:

$TDI = f(RGEX, CGEX)$ .....[4]

Thus, the above implicit equations were further reduced to their linear functional form as presented as follows:

$HDI = a_0 + a_1RGEX + a_2CGEX + u_1$…… [5]

$EDI = b_0 + b_1RGEX + b_2CGEX + u_2$……[6]

$TID = c_0 + c_1RGEP + c_2CGEP + u_3$…… [7]

Where; *HDI* represents Health Infrastructure Development (proxied by capital expenditure on Health); *EDI* represents Education Infrastructure Development (proxied by capital expenditure on Education); *TDI* represents Transport Infrastructure Development (proxied by capital expenditure on Transport); *RGEX* represents Recurrent Government Expenditure; *CGEX* represents Capital Government Expenditure; a_0, b_0, *and* c_0 are the intercepts; a_1, *and* a_2; b_1 and b_2; c_1 *and* c_2 are the coefficients of the variables; u_1, u_2, and u_3 are the residuals or error terms of the models. The A Priori Expectation: $a_1, a_2 > 0$; $b_1, b_2 > 0$; $c_1, c_2 > 0$.

3.3 Evaluation Procedure

The evaluation criteria for this study will consist of economic, statistical, and econometric criteria. Economic criteria will explain the theoretical relationship between the dependent and independent variables; recurrent and capital government expenditure and health, education, and transport infrastructure development. Statistical criteria will include t-statistics, standard error, and f-statistics tests to determine the true values of the population parameter. The econometric criteria will involve a unit root test, specifically the Augmented Dickey-Fuller test and an auto-correlation test using the Durbin-Watson statistics. The results of these tests will help to determine the presence of unit root or auto-correlation in the time series data. The aim of these tests is to ensure the accuracy of the regression model and its estimates.

4. Discussion of Results and Policy Implications

4.1 Unit Root Test

The Augmented Dickey-Fuller unit root test result is presented on Table 1 for stationarity and non-stationarity of the time series.

Table 1: Unit Root Test Result

Variable	Order of Stationarity	ADF Calculated	ADF Critical Value	Order of Integration	Decision
HDI	At level	-0.606815	-2.957110	1(0)	Not stationary
	1st difference	-6.403596	-3.622033	1(1)	Stationary
EDI	At level	-1.356649	-3.557759	1(0)	Not stationary
	1st difference	-5.052306	-3.562882	1(1)	Stationary
TDI	At level	-2.828257	-2.960411	1(0)	Not stationary
	1st difference	-4.465812	-3.562882	1(1)	Stationary
RGEX	At level	-2.771697	-2.957110	1(0)	Not stationary
	1st difference	-7.403272	-3.562882	1(1)	Stationary
CGEX	At level	0.207301	-2.957110	1(0)	Not stationary
	1st difference	-5.141954	-3.622033	1(1)	Stationary

Computed at 5% ADF critical value

Source: Researcher's Computation (2023) using Eviews 10.0.

The Augmented Dickey-Fuller unit root test results in Table 1 showed that none of the time series data were stationary at their levels, but did become stationary at their 1st difference. At a 5% critical level, *HDI*, *EDI*, *TDI*, *RGEX*, and *CGEX* were all found to be stationary at 1st difference.

4.2 Multiple Regression

The results of the estimated multiple regression models are presented on Table 2, Table 3, and Table 4 below.

Table 2: OLS Result for the Impact of Government Expenditure on Health Infrastructure Development in Nigeria

Dependent Variable	Independent Variables	Coefficient	Standard Error (S.E)	T-Statistics (Prob.)
HDI	*C*	-9.352306	4.780822	-1.956213 (0.0598)
	RGEX	0.017837	0.006060	-1.956213 (0.0062)
	CGEX	0.129564	0.007132	18.16743 (0.0000)
R^2	0.927741			
F-Statistic	192.5879			
Prob(F-statistic)	0.000000			
DW	1.937932			

Source: *Researcher's Computation (2023) using Eviews 10.0.*

Table 3: OLS Result for the Impact of Government Expenditure on Education Infrastructure Development in Nigeria

Dependent Variable	Independent Variables	Coefficient	Standard Error (S.E)	T-Statistics (Prob.)
EDI	*C*	1.101700	0.352794	3.122790 (0.0039)
	RGEX	0.000830	0.000447	1.856195 (0.0733)
	CGEX	0.004134	0.000526	7.856174 (0.0000)
R^2	0.717623			
F-Statistic	38.12051			
Prob(F-statistic)	0.000000			
DW	1.815499			

Source: *Researcher's Computation (2023) using Eviews 10.0.*

Table 4: OLS Result for the Impact of Government Expenditure on Transport Infrastructure Development in Nigeria

Dependent Variable	Independent Variables	Coefficient	Standard Error (S.E)	T-Statistics (Prob.)
TDI	*C*	-0.576575	0.303644	-1.898852 (0.0672)
	RGEX	0.001214	0.000385	3.155060 (0.0036)
	CGEX	0.003417	0.000453	7.544629 (0.0000)
R^2	0.733673			
F-Statistic	41.32169			
Prob(F-statistic)	0.000000			
DW	1.773421			

Source: *Researcher's Computation (2023) using Eviews 10.0.*

4.2.1 Economic Criterion

The results of the estimated multiple regression on Tables 2, 3 and 4 indicate that both Recurrent Government Expenditure (RGEX) and Capital Government Expenditure (CGEX) have a positive, significant impact on Health Infrastructure Development (HDI), Education Infrastructure Development (EDI) and Transport Infrastructure Development (TDI) respectively in Nigeria. Specifically, a percentage increase in RGEX and CGEX holding other variables constant increases HDI, EDI and TDI by 0.017%, 0.0008% and 0.001%, and 0.12%, 0.004% and 0.003%, respectively. This result is in line with the a priori expectation.

4.2.2 Statistical Criteria

T-statistics - The significance status of each of the parameters of variables was ascertained by conducting a T-statistics test, with degree of freedom defined by v = n – k, where n is 32, so that v = 32 – 5 = 27, therefore t-tabulated being obtained at 2.05 (two tailed test). From model one on Table 2, the t-statistics for a_1 was calculated to be -1.956213; since $T^{cal} < T^{tab}$ was -1.95 < 2.05, it was concluded that a_1 was not statistically significant; while the calculated t-statistics for a_2 was 18.16743, since $T^{cal} > T^{tab}$ was 18.16 > 2.05, the alternative hypothesis was accepted which states that there is a significant impact of government expenditure on health infrastructure development in Nigeria.

For model two on Table 3, the estimated t-statistics for b_1 was 1.856195 which in absolute value was < 2.05, as such it was concluded that b_1 was not significant. While, the calculated t-statistics for b_2 was 7.856174 which in absolute value was > 2.05, and as such the null hypothesis which states that there is no significant impact of government expenditure on education infrastructure development in Nigeria was rejected and the alternative hypothesis which states there is a significant impact of government expenditure on education infrastructure development in Nigeria was accepted.

For model three on Table 4, the estimated t-statistics for c_1 was 3.155060 which is absolute value was > 2.05, as such it was concluded that c_1 was significant. While, the calculated t-statistics for c_2 was 7.544629 which in absolute value was > 2.05, and as such the null hypothesis which states that there is no significant impact of government expenditure on transport infrastructure development in Nigeria was rejected and the alternative hypothesis which states there is a significant impact of government expenditure on transport infrastructure development in Nigeria was accepted.

Standard Error – The Standard Error test was used to test the hypothesis about the population parameter. If the coefficient is greater than half of its standard error, then the alternative hypothesis that the parameter is statistically significant is accepted. For example, for model one on Table 2, since the coefficient for a_1 is greater than half of its standard error, the conclusion is made that there is a significant impact of government expenditure on health infrastructure development in Nigeria. Similarly, for model two on Table 3, since the coefficient for b_2 is greater than half of its standard error, the conclusion is made that there is a significant impact of government expenditure on education infrastructure development in Nigeria. Lastly, for model three on Table 4, since the coefficients for c_1 and c_2 are greater than half of their standard errors, the conclusion is made that there is a significant impact of government expenditure on transport infrastructure development in Nigeria.

F-Statistics - The conclusion that the f-statistic which measures the joint statistical influence of the explanatory variables in explaining the dependent variable was found to be statistically significant was accepted by the alternative hypothesis and the null hypothesis was rejected when the F^{cal} was compared to the F^{tab}. The F^{tab} had (k-1) (n-k) degree of freedom,

k = 3, n = 32; (3-1) (32-3) and the F^{tab} at 5 per cent critical value was 3.33 while the F^{cal} was respectively 192.5879, 38.12051 and 41.32169 for models one, two and three on Table 2, 3 and 4.

R-Squared Statistics – The R-Squared statistics for the three models of Health Infrastructure Development (HDI), Education Infrastructure Development (EDI), and Transport Infrastructure Development (TDI) in Nigeria indicate that approximately 93%, 72%, and 73% of the variation in each respective infrastructure are explained by the independent variables included in the models.

4.2.3 Econometrics Criteria

Autocorrelation test – The Durbin-Watson (DW) test is employed to test for autocorrelation in the model. As a decision rule a Durbin-Watson value of ≥ 2 signifies the absence of autocorrelation. The Durbin-Watson statistic for all three models (Table 2, Table 3 and Table 4) is approximately 2, which indicates there is no serial autocorrelation present.

4.3 Policy Implications

The study discovered that an increase in recurrent government expenditure and capital government expenditure leads to an increase in health infrastructure development in Nigeria, which conforms to a priori expectations but however, with low contributions as indicated by recurrent and capital government expenditures by 0.017% and 0.12% respectively. This also implies that government expenditure has a positive relationship with health infrastructure, but it does not substantially impact on the development of health infrastructure in Nigeria. This could be traced to the misappropriation and diversion of public funds which have left most health care centers and hospitals to operate without adequate medical facilities and medications, thereby impeding the development of the nation at large.

In addition, the study also discovered that an increase in recurrent and capital government expenditures lead to an increase in education infrastructure development in Nigeria, which conforms to a priori expectations but however, with very low contributions of 0.0008% and 0.004% as indicated by the coefficient of RGEX and CGEX respectively. This implies that government expenditure has a positive relationship with spending on education infrastructure, but it does not adequately impact on the development of education infrastructure in Nigeria. This could be traced to the ill-equipped library and laboratories, lack of ICT facilities, and inadequate classrooms, which has been as a result of poor funding by the government.

Finally, the study discovered that an increase in recurrent and capital government expenditure leads to an increase in transport infrastructure development in Nigeria, which conforms to a priori expectations but however, with a very low and poor contributions of 0.001% and 0.003% as indicated by the coefficient of RGEX and CGEX respectively. This also implies that total government spending has a positive relationship with public spending on transport infrastructure, but it does not substantially impact on the development of transport infrastructure in Nigeria. This could however be traced to the reduction in government or private investment on the sector which has engulfed to the poor quality of roads, poor construction of airports and runways as well as waterways, and inadequate administrative capacity for maintenance in transport infrastructure. This could also be traced due to sharp practices of corruption by government agents and lack of transparency.

5. Conclusion and Policy Recommendations

The study conducted examined the impact of government expenditure on infrastructure development in Nigeria from 1986 to 2018. It was observed that infrastructure in an economy indeed serves as a catalyst for public development in government agenda such as healthcare delivery, education, transportation, electricity generation and supply. Despite this, the findings of the study showed that government expenditure has a positive relationship but, does not substantially impact on the development of health, education, and transport infrastructure in Nigeria due to their low and poor contributions.

In light of this, it is recommended that government should encourage the health sector by increasing its funding to equip the infrastructure pertaining to the health matters. Additionally, educational institutions should also consider promoting public-private partnership to embark on projects such as construction of modern toilets in all institutions, provision of relaxation points at strategic places on campus and construction of lecture halls/hostels, provision of equipped laboratories and libraries. Furthermore, government should consider increasing the funding of the transport sector as this will also enhance capacity building to enforce existing regulations, traffic management measures, improve vehicle inspection and general improvement of service quality of the transport mode in the country.

It is envisaged that with this, overall regional infrastructural and economic development in Nigeria will be enhanced.

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