

Impact of Federal Government Capital Expenditures on Economic Growth in Nigeria:1986-2022

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Abstract

The motivation for this paper stems from the crucial role that government expenditure plays in driving economic growth, especially in developing economies like Nigeria. This paper specifically investigates the long-run impact of federal government service capital expenditure on economic growth in Nigeria between 1986 and 2022. The paper examines how different components of capital expenditure—administrative services, economic services, and social and community services affect economic growth over time. Using the Autoregressive Distributed Lag model, the methodology facilitates the exploration of both short- and long-term relationships between the dependent and independent variables. The findings revealed that while certain components like social and community services significantly contribute to economic growth, others, such as total federal services, have a negative impact. This outcome underscores the need for a more targeted and efficient allocation of resources in capital expenditures. Based on these findings, the paper recommends that government agencies and departments enhance the efficiency of capital outlays in sectors that directly impact economic growth, such as infrastructure, while minimizing inefficiencies and focusing on productive expenditures to drive sustainable development in Nigeria.

Keywords: *Government expenditure, Economic growth, Capital expenditure, Administrative services, Social and community services*

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Background to the Study

Economic growth remains a central focus for policymakers globally, as it underpins improvements in living standards, job creation, and overall development. Investments in public sector services, particularly through government capital expenditure, play a crucial role in shaping long-term growth trajectories. While advanced economies have successfully leveraged capital expenditure in key sectors such as administration, economic services, and social services to stimulate sustainable growth, many developing economies, including Nigeria, have faced challenges in fully realizing these benefits.

In the Nigerian context, the government has consistently allocated significant portions of the national budget to capital expenditure in services aimed at boosting productivity. Between 1986 and 2022, the federal government's capital expenditure on administration, economic services, and social community services has fluctuated, often driven by political and economic reforms. However, Nigeria's economic growth, as measured by Real Gross Domestic Product (RGDP), has remained volatile, with periods of stagnation despite substantial investments in these critical sectors. For instance, between 2000 and 2010, the country saw a boost in capital expenditure aimed at enhancing economic services, yet RGDP growth averaged only 6.5%, insufficient to address rising poverty and unemployment rates (Okpabi *et al.*, 2021).

Previous policies, such as the National Economic Empowerment and Development Strategy (NEEDS) in the early 2000s and various structural adjustment programs before that, have aimed to harness public capital for economic growth (National Planning Commission, 2004). However, these initiatives often failed to yield the desired long-term economic benefits due to inefficiencies, corruption, and misallocation of resources. The persistent gap between expenditure and growth calls for a re-evaluation of the effectiveness of these investments, particularly in sectors that should drive broad-based development.

Given this background, the present paper investigates the impact of federal government service capital expenditure on Nigeria's economic growth, focusing on administration, economic services, and social community services. Understanding the specific contributions of these sectors to economic growth is essential for informing future fiscal policies and ensuring that public spending translates into tangible growth outcomes.

To achieve the objectives of this paper and to examine the relationship between federal government service capital expenditure and economic growth in Nigeria, the following hypotheses are formulated:

- H₀₁:** Administration has no significant impact on economic growth.
- H₀₂:** Economic services have no significant impact on economic growth.
- H₀₃:** Social community services have no significant impact on economic growth.
- H₀₄:** Transfers have no significant impact on economic growth.

Literature Review

Conceptual Review

Economic growth refers to the increase in the production of goods and services over a specific period, often measured by the change in Gross Domestic Product (GDP). Real GDP (RGDP) adjusts nominal GDP for inflation, providing a more accurate representation of an economy's growth by reflecting the real value of goods and services produced. In developing economies like Nigeria, RGDP is a crucial indicator of economic health, often linked to improvements in living standards, poverty reduction, and employment generation (Ivić, 2015). Policymakers use RGDP as a benchmark for evaluating the effectiveness of fiscal policies, including public spending on infrastructure and services. However, achieving sustainable economic growth in Nigeria has been challenging due to various factors, including fluctuating oil prices, political instability, and inadequate capital expenditure management (Mert, 2016).

Also, administration capital expenditure encompasses government spending on the machinery of governance, including public administration, law enforcement, and judicial services. Efficient administration is crucial for creating an enabling environment for economic growth, as it ensures that governance systems function smoothly and that policies are implemented effectively. In Nigeria, capital expenditure in this sector typically involves investments in administrative infrastructure, technology, and capacity building for civil service personnel. (Akujuobi *et al.*, 2022). However, the impact of administration expenditure on economic growth has been debated, with concerns over mismanagement, inefficiency, and bureaucratic delays hindering its potential contribution to RGDP while economic services refer to government capital expenditures aimed at improving sectors that directly contribute to productive economic activities, such as transportation, agriculture, energy, and industrial development. Investments in economic services are intended to stimulate economic growth by enhancing infrastructure, facilitating trade, and supporting key industries. For instance, improved transportation networks can reduce production costs and increase the competitiveness of domestic industries, while investments in energy infrastructure can boost industrial output. In Nigeria, economic services capital expenditure has been a significant focus of public policy, particularly in efforts to diversify the economy away from oil dependency. Despite this, the anticipated growth outcomes have not always materialized, which raises questions about the efficiency and effectiveness of spending in this area (Nwite *et al.*, 2019).

Social community services encompass capital expenditures on social infrastructure, such as education, health, housing, and social welfare programs. These services are vital for promoting human capital development, which, in turn, drives economic growth. Investments in education and healthcare, for instance, enhance the workforce's productivity and improve life expectancy, both of which contribute to long-term economic development. In Nigeria, social community services have seen varying levels of investment over the years, but the outcomes have often been undermined by poor implementation, inadequate funding, and corruption (McCullough, 2017). This paper

will assess whether capital expenditure in social community services has had a measurable impact on RGDP in Nigeria and whether increased or better-targeted spending could enhance economic growth and the transfers refer to the redistribution of resources through government spending, typically in the form of subsidies, grants, social benefits, and pensions. Unlike capital expenditure on infrastructure or services, transfers do not directly contribute to the production of goods and services. However, they can have an indirect impact on economic growth by supporting consumption, reducing poverty, and enhancing social stability. In Nigeria, transfers have historically played a role in addressing socio-economic inequalities, but their effectiveness in stimulating economic growth remains uncertain. (Anthony, 2023). Critics argue that transfers may sometimes contribute to inefficiency and dependency, rather than fostering economic productivity (Sinfield, 2018).

Empirical Review

Zakiah *et al.* (2024) examined the degree of regional financial autonomy in funding local development and government operations by boosting regional revenue. The study used path analysis with SPSS software to explore the direct and indirect impacts between the variables. The findings highlighted the importance of improving regional financial independence to reduce reliance on federal government financial aid. The analysis indicated that the regional government should adopt strategic policy initiatives to enhance Regional Original Income for funding capital expenditures. The study recommends that such initiatives are vital for achieving effective regional financial autonomy. Olusegun (2023) studied the impact of government revenue and expenditure on economic growth from 2000 to 2021 using the ARDL bounds test. His findings revealed that non-oil revenue and capital expenditure positively influenced economic growth, but this relationship was not significant at the 5% level in both the short and long run. Similarly, Anthony and Ngozi (2023) analyzed the relationship between government expenditure and economic growth from 1981 to 2021 using the Auto Regressive Distributed Lag (ARDL) model. Their results indicated that social and community services expenditure in Nigeria had a positive but statistically insignificant effect on economic growth. They recommended increasing budget allocations to the education sector and encouraging private stakeholders to invest in education, along with forging foreign partnerships to fund the health sector. Additionally, Okonkwo *et al.* (2023) examined the disaggregated impact of government capital expenditure—including administration, social and community services, economic services, transfers, and government deficits—on Nigeria's economic growth between 1981 and 2021. Their use of the ARDL model and bounds test confirmed a long-run association between the variables, showing that administrative and economic services had a strong positive effect on economic growth.

Imouokhome (2023) explored the relationship between economic growth and remittance flows in Nigeria, using GDP using the ARDL estimation technique. Results indicated that remittances, government spending, trade openness, and foreign direct investment positively impacted economic growth. The study recommended increasing government

expenditure on productive sectors, particularly infrastructure, and setting up a commission to coordinate and harness remittance flows to foster economic growth. Musa and Ismail (2023) analyzed the impact of government expenditure on Nigeria's economic growth rate from 1970 to 2020. The study used the Ordinary Least Squares (OLS) method. The findings revealed a positive link between the log of Gross Domestic Product (LGDP) and government expenditure variables, including recurrent and capital expenditure, though a negative link was found with initial lagged capital expenditure and domestic debt. The study recommended that government expenditure be thoroughly examined and strengthened to positively influence Nigeria's growth rates.

Nwankwo *et al.* (2022) evaluated the impact of federal government expenditure on Nigeria's economic growth from 1986 to 2020 using the Auto-Regressive Distributive Lag (ARDL) model. Results showed that recurrent expenditure had a significant, negative impact on real GDP, gross fixed capital formation, savings, and manufacturing capacity utilization, while capital expenditure had positive effects on gross fixed capital formation and manufacturing capacity utilization. The study highlighted the need for the government to prioritize capital expenditure, recommending that at least 50% of total spending be allocated to capital projects to foster economic growth. Further studies provide additional perspectives. For example, Olonite *et al.* (2021) analyzed public spending and its relationship with economic growth from 2004 to 2018, utilizing the Generalized Least Squares (GLS) model. Their study found that capital expenditure on economic services had a positive and significant impact on economic growth, whereas expenditure on transfers had a negative and insignificant impact. They recommended increasing capital expenditure on economic services and eliminating transfer expenditures. Meanwhile, Aluthge *et al.* (2021) analyzed the relationship between Nigerian government expenditure – disaggregated into capital and recurrent expenditure – and economic growth from 1970 to 2019.

Using the ARDL model, they concluded that capital expenditure had a significant positive effect on economic growth in both the short and long run, while recurrent expenditure did not have a significant impact. The study advocated for an increase in capital expenditure, particularly on projects that directly impact citizens' welfare. In a related study, Onifade *et al.* (2020) analyzed the effects of capital expenditure, recurrent expenditure, and government fiscal expansion on Nigeria's economy from 1981 to 2017. Using Pesaran's ARDL approach, their results showed that recurrent expenditures had a significantly negative impact on economic growth, while public capital expenditures, although positive, were not statistically significant during the period under review. Okang *et al.*, (2020). examined the impact of government capital expenditure on economic growth in Nigeria from 1972 to 2018. To achieve this, the study employed an error correction mechanism (ECM) methodology. The findings indicated a long-run relationship between the variables, with bi-directional causality between GDP and expenditures on social and community services, administration, economic services, and transfers. the study recommended that the government should increase spending on capital projects and reduce consumption expenditure to foster economic growth.

Kareem (2017) analyzed the impact of Federal Government healthcare expenditure on Nigeria's economic growth from 1981 to 2013 using time series data with ordinary least square (OLS) method. Findings indicated a positive relationship between healthcare expenditure, and economic growth, with significant effects at the 1% level. The causality test revealed a uni-directional relationship from GDP to recurrent and total expenditures. The study recommended continued investment in the health sector to prevent capital flight.

Ihugba and Njoku (2017) explored the extent and quality of national commitments to education, health, and support for the socially and economically disadvantaged through public expenditure, using time series data from 1961 to 2013. By employing the Error Correction Model (ECM), their findings revealed that while total expenditure on social and community services was not statistically significant, it had a positive relationship with economic growth in Nigeria in the long run. In another study, Udoffia and Godson (2016) investigated the impact of federal government expenditure on Nigeria's economic growth, employing the Ordinary Least Squares (OLS) method to analyze time series data from 1981 to 2014. Their results demonstrated that both capital and recurrent federal government expenditures had a positive impact on real GDP in Nigeria. Similarly, Ebong *et al.* (2016) assessed the effects of government capital expenditures on economic growth in Nigeria between 1970 and 2012. Utilizing a multiple regression model and an endogenous growth framework, they found that capital expenditures on education positively influenced economic growth, while health expenditures had a negative impact, and economic infrastructure showed a significant positive relationship with growth.

Theoretical Framework

This paper adopted Wagner's Law of increasing state activity, initially proposed by the German economist Adolf Wagner in 1883. This theory posits that as an economy develops, there is a natural increase in public sector expenditure, especially in areas such as administration, education, health, and public infrastructure. Wagner argued that government expenditure grows because of increased social and economic demands on the state as national income expands. So therefore, as the economy grows and diversifies, the government faces greater demand for public services such as administration, economic services, and social community services. According to Wagner's Law, these expenditures are not only a response to immediate needs but are also crucial for fostering long-term economic growth. Government investments in capital expenditures related to economic services (such as infrastructure), social services (education, health), and administration create the enabling environment for sustained economic development.

The theory supports the investigation of the relationship between government capital expenditure on services and economic growth (measured by real GDP) by suggesting that increased capital spending, particularly on infrastructure and public services, should stimulate economic activities, improve productivity, and enhance overall growth. However, the theory also implies that inefficient or misallocated public spending may not yield positive economic results, as seen in past policies where certain capital expenditures did not effectively stimulate growth.

Methodology

Research Design, Sources and Nature of Data

The research design for this paper is ex-post facto research and the secondary annual time series data from 1986-2022 was sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin 2023.

Model Specification

The paper adopted and used autoregressive distributed lag (ARDL). The foundation of the model was based on the theoretical framework of the paper. Also, the initial model was adapted from the work of Onifade *et al.* (2020) who studied empirically retrospect of the impacts of government expenditures on economic growth: new evidence from the Nigerian economy from 1981 to 2017 using the Auto Regressive Distributed Lag (ARDL). Their model was stated as:

$$RGDP = f(RECEXP, CAPEXP, DEBT, PRIEXP, INEST) \quad (1)$$

The equation 1 can further be stated explicitly hereunder as:

$$RGDP_t = B_0 + B_1RECEXP_t + B_2CAPEXP_t + B_3DEBT_t + B_4PRIEXP_t + B_5INEST + \mu_t \quad (2)$$

Where RGDP is the real gross domestic product; RECEXP is the total government recurrent expenditures as a percent of GDP; CAPEXP is the total government capital expenditures as a percent of GDP; DEBT is the total public debt as a percent of the GDP; PRIEXP is the private consumption expenditure; INVEST is the gross domestic investment as measured by annual growth of gross capital formation and all variables are in natural logarithm form except the gross domestic investment. Equation (1) was modified and specified to follow the paper objective:

$$RGDP = f(ADM, ESC, SCS, TFS) \quad (3)$$

Therefore, explicitly the model becomes:

$$RGDP_t = \beta_0 + \beta_1ADM + \beta_2ESC + \beta_3SCS + \beta_4TFS + e_t \quad (4)$$

Where; RGDP is the real gross domestic product at time t in Nigeria, ADM is administration at time t in Nigeria, ESC is economic services at time t in Nigeria, SCS is social community services at time t in Nigeria and TFS is transfers at time t in Nigeria, while β_0 is Intercept, β_1 , β_2 , β_3 and β_4 are Slope and e_t is the Error Terms. The Autoregressive Distributed Lagged (ARDL) model that was used in this paper is specified as follows:

$$RGDP = \beta_0 + \sum_{i=1}^j \beta_{1i} \Delta RGDP_{t-i} + \sum_{i=1}^j \beta_{2i} \Delta ADM_{t-i} + \sum_{i=1}^k \beta_{3i} \Delta ESC_{t-i} + \sum_{i=1}^l \beta_{4i} \Delta SCS_{t-i} + \sum_{i=1}^m \beta_{5i} \Delta TFS_{t-i} + \beta_{6i} \Delta RGDP_{t-i} + \beta_{7i} \Delta ADM_{t-i} + \beta_{8i} \Delta ESC_{t-i} + \beta_{9i} \Delta SCS_{t-i} + \beta_{10i} \Delta TFS_{t-i} + e_t \quad (5)$$

Equation (5) was used to examine the short-run and long-run relationship and the impact of federal government service capital expenditure on economic growth in Nigeria. While the Error Correction Model (ECM) used in this paper is specified as follows:

$$\Delta RGDP = \beta_0 + \sum_{i=1}^j \beta_{1i} \Delta RGDP_{t-i} + \sum_{k=1}^j \beta_{2k} \Delta ADM_{t-k} + \sum_{l=1}^k \beta_{3l} \Delta ESC_{t-l} + \sum_{m=1}^j \beta_{4m} \Delta SCS_{t-m} + \sum_{n=1}^m \beta_{5n} \Delta TFS_{t-n} + ECM_{t-1} + e_t \quad (6)$$

Equation 6 above is used to adjust the estimation until the ECM turns negative. The negative sign of the coefficient of the error correction term ECM (-1) shows the statistical significance of the equation in terms of its associated t-value and probability value.

Variable Description, Measurements and Apriori Expectation

Table 1: Description of the Variables Used for the Model

Variable	Description/Measure	Type	Source	Apriori Expectation
RGDP	Real Gross Domestic Product	Dependent	CNN, 2024	
ADM	Administration in Nigeria	Independent	CBN, 2024	$\beta_1 > 0$
ESC	Economic services in Nigeria	Independent	CBN, 2024	$\beta_2 > 0$
SCS	Social community services in Nigeria	Independent	CBN, 2024	$\beta_3 > 0$
TFS	Transfers in Nigeria	Independent	CBN, 2024	$\beta_4 > 0$

Source: Author Compilation, 2024

The assumption is that $\beta_1, \beta_2, \beta_3,$ and $\beta_4 < 0$ indicates a positive or negative correlation between the dependent and independent variables. An increase or decrease in certain federal government service capital expenditure parameters such as administration, economic services, social community services, transfers may affect Nigeria's real gross domestic product.

Method of Analysis

This research utilised the Autoregressive Distributed Lag (ARDL) model. It is an essential instrument utilised for examining the dynamic interplay of variables, considering both short-run and long-run elements. The ARDL technique is particularly useful for analyzing the dynamic relationships between variables, as it allows for the examination of both short-run and long-run effects within a single framework.

Presentation and Interpretation of Results

Descriptive Analysis

Table 2: Descriptive Analysis

	RGDP	ADM	ESC	SCS	TFS
Mean	41452.04	176.6055	318.2915	85.00883	115.4740
Median	36057.74	137.7659	262.2073	55.73600	48.75220
Maximum	74639.47	789.8060	1369.662	377.2592	597.0940
Minimum	17007.77	0.264800	1.099900	0.619100	0.000000
Std. Dev.	20599.27	196.8726	327.0128	94.08423	147.3813
Skewness	0.353551	1.376107	1.444704	1.297216	1.698599
Kurtosis	1.486425	4.488153	4.918434	4.249764	5.280832
Jarque-Bera	4.302641	15.09181	18.54482	12.78502	25.81236
Probability	0.116330	0.000528	0.000094	0.001674	0.000002
Sum	1533726.	6534.405	11776.79	3145.327	4272.537
Sum Sq. Dev.	1.53E+10	1395318.	3849745.	318666.3	781964.6
Observations	37	37	37	37	37

Source: Researcher's Computation Using EViews-12 (2024)

Table 2 presents the descriptive statistics for the variables Real Gross Domestic Product (RGDP), Administration (ADM), Economic Services (ESC), Social Community Services (SCS), and Transfers (TFS) from 1986 to 2023. The average value of RGDP during the period is 41,452.04, with a maximum value of 74,639.47 and a minimum value of 17,007.77, indicating substantial variation in Nigeria's economic growth. The standard deviation of RGDP is 20,599.27, suggesting moderate fluctuations over time. The skewness value of 0.353551 indicates that the RGDP distribution is slightly positively skewed, and its kurtosis value of 1.486425, which is less than 3, implies a platykurtic distribution (less peaked than a normal distribution). The Jarque-Bera test statistic of 4.302641 with a p-value of 0.116330 suggests that RGDP is normally distributed since the p-value is greater than 0.05. While for administration (ADM), the mean value is 176.6055, with a maximum of 789.8060 and a minimum of 0.264800. The high standard deviation of 196.8726 indicates significant variability in administrative expenditure over time. The skewness value of 1.376107 shows that the data is positively skewed, while the kurtosis value of 4.488153 (greater than 3) suggests that the distribution is leptokurtic (more peaked than normal). The Jarque-Bera statistic of 15.09181 and a p-value of 0.000528 indicate non-normal distribution for ADM.

Economic Services (ESC) has an average value of 318.2915, a maximum of 1,369.662, and a minimum of 1.099900. The high standard deviation of 327.0128 reflects variability in economic services expenditure. The skewness of 1.444704 indicates positive skewness, and the kurtosis value of 4.918434 shows a leptokurtic distribution. The Jarque-Bera statistic of 18.54482 and p-value of 0.000094 confirm that ESC is not normally distributed and social community services (SCS), the mean is 85.00883, with a maximum of 377.2592 and a minimum of 0.619100. The standard deviation of 94.08423 also reflects considerable variation in this expenditure category. The skewness value of 1.297216 shows positive

skewness, while the kurtosis of 4.249764 indicates a leptokurtic distribution. The Jarque-Bera statistic of 12.78502 and p-value of 0.001674 suggest non-normal distribution for SCS. Lastly, Transfers (TFS) have a mean of 115.4740, a maximum of 597.0940, and a minimum of 0.000000, with a standard deviation of 147.3813. The skewness of 1.698599 reveals strong positive skewness, and the kurtosis of 5.280832 shows a leptokurtic distribution. The Jarque-Bera statistic of 25.81236 and a p-value of 0.000003 confirm that TFS is not normally distributed.

Correlation Matrix Results

Table 3: Correlation Matrix Results

Correlation	RGDP	ADM	ESC	SCS	TFS
Probability					
RGDP	1.000000				

ADM	0.864649	1.000000			
	0.0000	-----			
ESC	0.829694	0.982012	1.000000		
	0.0000	0.0000	-----		
SCS	0.849893	0.987784	0.974879	1.000000	
	0.0000	0.0000	0.0000	-----	
TFS	0.764507	0.892661	0.911589	0.866032	1.000000
	0.0000	0.0000	0.0000	0.0000	-----

Source: Author's Computation, using E-Views 12, (2024)

Table 3 shows the correlation matrix of the variables used in this paper. The first column reveals the relationships between real gross domestic product (RGDP) and the other variables. There exists a strong and positive relationship between RGDP and administration (ADM) in Nigeria, as indicated by the correlation coefficient of 0.864649. The probability value of 0.0000 confirms that this relationship is statistically significant. Similarly, there is a strong and positive relationship between RGDP and Economic Services (ESC) with a correlation coefficient of 0.829694 and a probability value of 0.0000, indicating significance. The correlation between RGDP and Social Community Services (SCS) is also strong and positive, as evidenced by a correlation coefficient of 0.849893, with a probability value of 0.0000, showing a significant relationship and lastly, there is a moderate and positive relationship between RGDP and Transfers (TFS), with a correlation coefficient of 0.764507 and a probability value of 0.0000, indicating statistical significance.

Stationary Tests (Unit Root Tests)

This section shows the unit root of the variables using the Augmented Dickey-Fuller (ADF) Test to check the stationary at a 5 per cent level of significance.

Table 4: Unit Root Test Result

Variable	Augmented Dickey-Fuller (ADF) Test		Status
	ADF	@ 5%	
RGDP	-3.858018	-3.557759	1(0)
ADM	-3.216211	-2.967767	1(1)
ESC	-6.419685	-2.948404	1(1)
SCS	-6.369348	-2.948404	1(1)
TFS	-8.099109	-2.948404	1(1)

Source: Author's Computation Using EViews-12 (2024)

Table 4 shows the stationary tests of real gross domestic product (RGDP), administration (ADM), economic services (ESC), social community services (SCS), transfers (TFS). Thus, Table 5 of the ADF test findings indicated that RGDP is steady at level, signifying that it is integrated of order zero $I(0)$ at a 5% level of significance. Conversely, ADM, ESC, SCS, and TFS were non-stationary at the level until subjected to a single differencing, indicating they are integrated of order 1 ($I(1)$). Considering the mixed results indicated by ADF tests and the integration order of the variables, the long-term relationship among the variables was examined using the ARDL-Bounds Co-integration Test, which accommodates the characteristics of a combination of $I(0)$ and $I(1)$ variables as proposed by Pesaran *et al.* (2001).

Co-integration of ARDL-Bounds Test

This section shows the ARDL co-integration bounds test of the variables used in this paper.

Table 5: ARDL-Bound Testing

Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	K
F-statistic	7.311477	4
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Source: Researcher's Computation Using EViews-9 (2023)

Table 5 shows the ARDL bounds test for co-integration that was carried out for all six models based on the research objectives. The model result shows that the F-statistic derived from the ARDL bounds test is 7.311477, and when compared with the critical values obtained from the Pesaran Table at a 5% level of significance, its value exceeded both 2.86 and 4.01 for $I(0)$ and $I(1)$, respectively. real gross domestic product (RGDP), administration (ADM), economic services (ESC), social community services (SCS) and transfers (TFS). are co-integrated at a 5% level of significance.

ARDL Regression Result

The Autoregressive Distributed Lag (ARDL)-ECM and long-run estimates presented here provides significant insights into how federal government service capital expenditure affect economic growth in Nigeria over short and long term.

Table 6: Method- ARDL-ECM and Long Run Estimates
Dependent Variable: RGDP

Error Correction Estimates				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(ADM)	7.984761	5.715559	1.397022	0.1827
D(ADM(-1))	4.543323	5.938190	0.765102	0.4561
D(ADM(-2))	17.370821	6.420159	2.705668	0.0163
D(ADM(-3))	-17.963602	8.485317	-2.117022	0.0514
D(IESC)	-505.446060	280.868918	-1.799580	0.0921
D(IESC(-1))	69.978293	347.148049	0.201581	0.8430
D(IESC(-2))	-724.191721	338.725014	-2.137993	0.0494
D(IESC(-3))	332.360504	286.977959	1.158139	0.2649
D(ISCS)	0.564053	10.806820	0.052194	0.9591
D(ISCS(-1))	-21.963780	10.113072	-2.171821	0.0463
D(ISCS(-2))	-7.721120	10.931533	-0.706316	0.4908
D(ISCS(-3))	-17.808440	10.961923	-1.624573	0.1251
D(TFS)	-11.930615	2.541189	-4.694894	0.0003
CointEq(-1)	-0.131908	0.026684	-4.943318	0.0002
R-squared	0.818110			
Adjusted R-squared	0.611969			
F-statistic	3.968683			
Prob(F-statistic)	0.005089			
Durbin-Watson stat	2.075177			
Long-Run Estimates				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ADM	21.966361	144.924286	0.151571	0.8815
IESC	1202.466622	908.514101	1.323553	0.2055
ISCS	439.757938	304.843500	1.442570	0.1697
TFS	-90.446345	22.956112	-3.939968	0.0013
C	27342.079427	3919.496034	6.975917	0.0000

Source: Researcher's Computation Using EViews-12 (2024)

Table 6 shows the ARDL long-run results for the impact of administration, economic services, social community services, and transfers on real gross domestic product (RGDP) in Nigeria. The coefficient of Administration (ADM) is 21.966361 with a standard error of 144.924286 and a t-statistic of 0.151571, indicating an insignificant positive impact on RGDP at the 5% level (Prob. 0.8815). This suggests that changes in ADM do not significantly influence RGDP in the long run.

For economic services (ESC), the coefficient is 1202.466622 with a standard error of 908.514101 and a t-statistic of 1.323553, showing a positive but statistically insignificant

effect on RGDP (Prob. 0.2055). This implies that in the long term, variations in ESC do not substantially impact Nigeria's economic growth. While social community services (SCS) have a positive coefficient of 439.757938, with a standard error of 304.843500 and a t-statistic of 1.442570. Although this indicates a positive relationship, the impact is statistically insignificant (Prob. 0.1697), meaning that changes in SCS are not strongly correlated with improvements in RGDP. On the other hand, transfers (TFS) present a negative and statistically significant coefficient of -90.446345 with a standard error of 22.956112 and a t-statistic of -3.939696 (Prob. 0.0013). This suggests that, in the long run, higher transfers have a significant negative effect on RGDP, implying that increased transfers may hinder economic growth.

The R-squared value of 0.818110 indicates that the model explains 81.8% of the variations in RGDP. The adjusted R-squared value of 0.611969 suggests the model remains robust, even with additional variables. The F-statistic of 3.968683 with a probability value of 0.005089 shows that the overall model is statistically significant, confirming that changes in the independent variables can lead to substantial changes in RGDP. The Durbin-Watson statistic of 2.075177 suggests no significant autocorrelation in the model's residuals, indicating reliable regression results. In summary, while ADM, ESC, and SCS have no significant long-run effects on Nigeria's RGDP, transfers (TFS) have a negative and significant impact, potentially indicating inefficient allocation or negative consequences of increased transfers on economic growth. The hypothesis that stated H_{01} : Administration (ADM) has no significant impact on real gross domestic product (RGDP) in Nigeria. As the p-value for ADM is 0.8815, which is greater than 0.05. Hence, we fail to reject the null hypothesis (H_{01}). This implies that ADM does not have a significant impact on RGDP in Nigeria in the long run.

On the other hand, H_{02} : Economic services (ESC) have no significant impact on real gross domestic product (RGDP) in Nigeria as the p-value for ESC is 0.2055, which is also greater than 0.05. Thus, we fail to reject the null hypothesis (H_{02}). This indicates that ESC does not have a significant long-run impact on RGDP in Nigeria. Also, the H_{03} : Social community services (SCS) have no significant impact on real gross domestic product (RGDP) in Nigeria as the p-value for SCS is 0.1697, which exceeds the 0.05 significance level. Therefore, we fail to reject the null hypothesis (H_{03}). This suggests that SCS does not have a significant impact on RGDP in the long run. While H_{04} : Transfers (TFS) have no significant impact on real gross domestic product (RGDP) in Nigeria showed that the p-value for TFS is 0.0013, which is less than 0.05. Consequently, we reject the null hypothesis (H_{04}). This implies that TFS has a significant negative impact on RGDP in Nigeria in the long run.

Post-Estimation Checks (ARDL Diagnostic Test)

The results from the ARDL diagnostic checks captured in Table 8 are crucial for validating the robustness and reliability of the regression model that investigates the impact of federal government service capital expenditure on economic growth in Nigeria. These post-estimation tests assess various assumptions underlying the ARDL regression analysis, ensuring that the model's inferences are statistically sound.

Table 7: Results of ARDL Diagnostic Checks

Tests		Outcomes	
		Coefficient	Probability
Breusch-Godfrey-Serial-Correlation Test	F-stat.	2.727078	0.1026
Heteroscedasticity-Breusch-Pagan-Godfrey Test	F-stat.	1.071781	0.4500
Normality Test	Jarque-Bera	0.637375	0.727103

Source: Author's Computation Using EViews-12 (2024)

Table 7 is the breusch-godfrey serial correlation LM Test checks for autocorrelation in the residuals of the regression model. Autocorrelation occurs when residuals are not independent of each other, which can lead to inefficient estimators and biased standard errors. The outcome of this test, with an F-statistic of 2.727078 and a probability of 0.1026, suggests that there is no significant serial correlation in the model. A high p-value indicates that the paper fails to reject the null hypothesis of no serial correlation, thus confirming that the residuals of the model are independent across time, which is a desirable property in time series analysis. Also, the heteroscedasticity breusch-pagan-godfrey Test is used to detect the presence of heteroscedasticity, a condition where the variance of the errors is not constant across all levels of the independent variables. Heteroscedasticity can render the standard errors inaccurate, leading to unreliable hypothesis tests. The test yields an F-statistic of 1.071781 with a probability of 0.4500, indicating that there is no significant evidence of heteroscedasticity within the model. This means that the variance of the error terms is constant, allowing for confidence in the estimated standard errors and the statistical tests that rely on them. Finally, the Normality Test, specifically the Jarque-Bera test, is employed to determine whether the residuals of the model are normally distributed. The normality of residuals is an important assumption, as it underpins the validity of various statistical tests, including the t-tests on the estimated coefficients and the F-test on the overall model. The Jarque-Bera statistic is 0.637375 with a probability of 0.727103, which indicates that the residuals are normally distributed. With a high p-value, the null hypothesis that the residuals are normal cannot be rejected, satisfying another critical assumption of the classical linear regression model.

Discussion of Findings

The paper focused on the impact of financial inclusion on economic growth in Nigeria. Based on the specific objectives of the research, the results for administration expenditure (ADM) show an insignificant impact on real gross domestic product (RGDP), which does not align with theoretical expectations such as the Keynesian theory, which postulates that government spending, particularly in administrative services, should stimulate economic growth by enhancing public services. This finding also contrasts with the results of Wobilor and Darius (2015), who found that administrative expenditures significantly affect economic growth in Nigeria.

The economic services expenditure (ESC) variable also shows an insignificant effect on RGDP, contrary to the expectation based on endogenous growth theory, which suggests that productive government spending in areas such as infrastructure and economic services should directly boost economic output. This result is inconsistent with Maingi (2017), who found a positive relationship between government spending on economic services and growth in Kenya, emphasizing the critical role of such expenditures in fostering long-term growth. For social community services expenditure (SCS), the findings show an insignificant impact, which conflicts with the human capital theory that posits that government spending on social services such as education and health enhances the productivity of the workforce, ultimately promoting economic growth. These findings contradict the work of Uremadu *et al.* (2019), who highlighted the importance of social expenditures in driving economic development, particularly in Nigeria.

Lastly in the case of transfers (TFS), the result shows a negative and significant relationship with RGDP, aligning with the fiscal discipline theory, which argues that unchecked transfer payments, such as subsidies or welfare programs, could crowd out productive investments, leading to a reduction in economic efficiency. This outcome supports the findings of Olonite *et al.* (2021), who found that transfer payments had a distorting effect on economic growth in Nigeria, emphasizing the need for efficient allocation of resources.

Conclusion and Recommendations

In conclusion, the investigation revealed through ARDL results that among the independent variables, a mixed outcome across the different types of expenditures. While administration, economic services, and social community services expenditures demonstrated insignificant relationships with real gross domestic product, transfer payments showed a significant negative impact. These results highlight the complexities involved in government spending and its influence on economic performance. It underscores the importance of ensuring that government expenditures are effectively targeted to areas that can foster long-term economic growth. Additionally, the findings call attention to the need for a more efficient allocation of resources in sectors that could drive productivity and development. Therefore, this paper recommended the following policies which are:

- i. The Ministry of Finance and the National Planning Commission should re-evaluate how administrative funds are allocated, ensuring that they are directed towards initiatives that improve public sector efficiency and service delivery. Regular assessments and monitoring systems should be put in place to measure the productivity of administrative expenditures.
- ii. The Federal Ministry of Works, Transport, and Power should intensify efforts to ensure that capital investments in infrastructure and other economic services are executed efficiently and sustainably. There is a need for comprehensive monitoring of projects to ensure timely completion and avoidance of cost overruns, as these investments are critical for stimulating economic growth.

- iii. The Ministries of Health, Education, and Social Development should focus on improving the quality of public service delivery in these sectors. Government agencies should enhance social service infrastructure and human capital development, which are essential for long-term economic growth, in line with human capital theory.
- iv. The Ministry of Humanitarian Affairs, Disaster Management, and Social Development should review transfer payment programs to ensure that they are targeted and do not negatively affect economic productivity. Reforms could include implementing more conditional transfer systems that encourage recipients to engage in activities that contribute to economic growth.

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