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Effect of Government Expenditure on Standard of Living and Economic Growth in Nigeria

Osuagwu Felicia Obiageri, Prof. Charles Uche Ugwuanyi, Justin C. Alugbuo

Department of Economics, College of Management Sciences (COLMAS),
Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria

ABSTRACT

This study investigated effect of government expenditure on the standard of living and economic growth in Nigeria over the period 1981-2023, utilizing the Autoregressive Distributed Lag (ARDL) technique. Data from the Central Bank of Nigeria and World Development Indicators were analyzed with E-Views 12. Results revealed sectorial variations in effectiveness. Expenditure on education negatively affected both standard of living and growth in the short and long run, health spending improved living standards significantly but had a negative effect on economic growth in Nigeria, while agricultural spending negatively impacted both outcomes, as did transport and communication expenditure and in contrast, investment in roads and construction demonstrated a strong positive and significant relationship with both improved living standards and economic growth in Nigeria at 5 percent level of significance. The study recommended among others, enhanced oversight for education spending to ensure proper fund utilization. It further advocated for increased investment in road infrastructure to boost private sector productivity, improve goods distribution, raise living standards, and stimulate economic growth.

KEYWORDS: *Government Expenditure; Standard of Living; Economic Growth; ARDL Estimation Technique; Nigeria.*

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1. INTRODUCTION

Government expenditure plays a crucial role in addressing the needs of citizens, promoting economic development, and enhancing the standard of living. In economies experiencing sustained growth, public investments in infrastructure, education, healthcare, and other essential services significantly improve living conditions. This improvement, as suggested by Wagner's Law of Public Expenditure, is a direct consequence of industrialization and rising government expenditure. The relationship between government spending and citizens' living standards is thus vital to fostering economic growth and development.

Studies have shown that countries investing in education, healthcare, and infrastructure experience more equitable growth. In particular, increased public spending reduces poverty, promotes social welfare, and enhances income distribution, leading to better living standards (Ahmad & Batul, 2013; Tiwari, 2012). In Nigeria, government expenditure has been vital in meeting the needs of a growing population. However, despite substantial spending in areas like education and healthcare, the country has struggled with infrastructural deficits, including inadequate roads, unreliable power supply, and insufficient healthcare and educational facilities. These challenges contribute to persistent poverty, high unemployment, and a stagnating economy. The Nigerian government has faced numerous fiscal challenges, including poor budget execution and corruption, which hinder the positive impact of public spending. Furthermore, the country's economic growth, reflected in metrics like GDP per capita, has been uneven and below expectations. Despite efforts to increase public investment in critical sectors, the lack of effective infrastructure continues to hamper progress, undermining the potential benefits of government expenditure.

Over the past four decades, Nigeria has invested heavily in critical sectors such as education and healthcare, but the impact on economic growth has been minimal. Despite substantial budget allocations,

the country continues to face low life expectancy, poor educational outcomes, and inadequate healthcare services. The challenge is exacerbated by low government spending in these sectors, which has failed to meet the needs of the population amidst a rapidly growing demographic.

The budgetary allocation to education and healthcare has remained consistently below international recommendations, with Nigeria's expenditure on education consistently lower than the UNESCO-recommended 26% of total expenditure. Similarly, the health sector has struggled to meet the African Union's target of 15% of national budgets. This underfunding is evident in the poor state of infrastructure, such as inadequate road networks, unreliable power supply, and the lack of basic amenities, which continue to hinder economic growth and affect the standard of living.

The disparity between government spending and the actual needs of the population calls for an investigation into how public expenditure impacts economic growth and living standards in Nigeria. This study aims to determine if increased government expenditure can drive economic growth and improve the living conditions of Nigerian citizens, ultimately contributing to national development.

2. LITERATURE REVIEW

2.1. Concept of Government Expenditure

Government expenditure refers to the spending by the state to fulfill public needs that individuals cannot meet on their own, either due to lack of will or ability. It encompasses payments for goods and services, interest on debt, social transfers, and subsidies. Expenditures can be categorized into social goods (e.g., defense, roads), partial goods (e.g., education, healthcare), and merit goods (e.g., subsidized housing). Social goods are non-divisible and benefit society as a whole, while merit goods are provided for equity, ensuring inclusive growth and distributive justice.

2.1.1. Government Health Expenditures

Public health expenditure refers to the financial resources allocated by the government to maintain and improve public health. This spending is crucial during periods of economic downturn as it stimulates demand and reduces unemployment. Health spending is a vital component of improving living standards and contributes to a productive labor force. It includes investments in healthcare infrastructure, emergency services, and nutrition, aimed at improving the population's health and contributing to broader economic development.

2.1.2. Government Expenditure on Education

Expenditure on education refers to public spending on both public and private educational institutions, administration, and student subsidies. Education is integral to economic development, as it is directly linked to the growth of human capital. A well-educated workforce is essential for sustainable economic progress. However, Nigeria's educational sector continues to face challenges due to underfunding, affecting the country's long-term development potential.

2.1.3. Government Expenditure on Infrastructure

Infrastructure spending covers investments in roads, bridges, utilities, and other long-term assets that facilitate economic growth. Effective infrastructure enhances productivity by reducing transportation costs and improving access to markets. Government investment in infrastructure is crucial for both businesses and households, promoting economic development by creating enabling environments for firms to grow.

2.1.4. Government Expenditure on Agriculture

Agriculture, once the cornerstone of Nigeria's economy, now accounts for a diminished share of GDP. Public investment in agriculture, including support for smallholder farms and agribusinesses, is essential to revitalizing this sector. However, Nigeria's reliance on oil has diverted attention from agriculture, resulting in increased poverty and food insecurity. Efforts to reinvigorate the sector, such as large-scale agricultural projects, have not yielded sustainable results.

2.1.5. Concept of Economic Growth

Economic growth is the increase in a country's output of goods and services, measured by GDP. It reflects the country's productive capacity and is essential for improving the welfare of its citizens. Growth is driven by factors such as investment, capital formation, and consumption. Effective government policies that foster investment in infrastructure, education, and healthcare can stimulate growth, while mismanagement or excessive borrowing can hinder it.

2.1.6. Concept of Standard of Living

The standard of living reflects the material well-being of individuals, measured by factors such as income, healthcare, education, and infrastructure. Higher government expenditure, especially in areas like education, health, and infrastructure, is expected to improve living standards. However, in Nigeria, the benefits of increased public spending have not translated into consistent improvements in citizens' quality of life due to mismanagement, corruption, and inadequate service delivery.

2.2. Theoretical Literature Review

2.2.1. Theories of Government Expenditure

A. Wagner's Law of Increasing State Activities

Wagner's law, propounded by Adolph Wagner in 1883, suggests that as a nation develops, the public sector will grow in importance, and thus government expenditure will increase. The law is based on the premise that as economies industrialize, they experience increasing demands for public goods such as education, healthcare, infrastructure, and welfare services. However, Wagner did not establish a clear quantitative relationship between public expenditure and economic growth. Nitti, later supporting Wagner, suggested that factors like population growth, social complexities, and the expansion of government roles in welfare programs contribute to this increase in government spending (Emernini, 2005).

B. Wiseman-Peacock Displacement Effects Hypothesis

Peacock and Wiseman's hypothesis suggests that public expenditure grows in "jerks" rather than steadily. According to this theory, social crises such as wars or economic upheavals lead to abrupt increases in public spending. The government's response to such crises typically involves higher taxation and increased expenditure, which, once introduced, do not return to previous levels. This "displacement effect" stabilizes public spending at a higher level, even after the crisis subsides.

C. Musgrave and Rostow Development Model

Musgrave and Rostow proposed that in the early stages of economic growth, public sector investment is crucial for infrastructure development, such as roads, healthcare, and education, which sets the stage for later private sector growth. As the economy matures, the role of government investment diminishes, and the focus shifts towards social welfare programs like education and healthcare. This shift is aligned with the development stages outlined by Rostow, where public expenditure gradually focuses more on welfare as income levels rise (Musgrave, 1969; Rostow, 1971).

2.2.2. Theories of Standard of Living

A. Culture of Poverty

The culture of poverty theory, proposed by Lewis (1961), argues that poverty leads to the development of a subculture with distinct values and behaviors that persist across generations. This subculture arises in response to economic marginalization, where the poor are excluded from opportunities for upward mobility. The theory suggests that the lack of economic opportunities, poor skills, and underemployment lead to the persistence of poverty and low living standards (Lewis, 1961).

B. Human Capital Theory

Human capital theory, developed by Schultz (1961), posits that investments in education and healthcare enhance the productive capacity of individuals, thus contributing to economic growth. Education, for example, is considered an investment that increases an individual's earning potential and skills, benefiting both the individual and the broader economy. Human capital theory emphasizes the importance of education and health for sustainable economic development, particularly in developing nations where human capital is often underutilized (Schultz, 1961).

2.2.3. Theories of Economic Growth

A. Endogenous Growth Theory

The endogenous growth theory, developed in the 1980s, argues that economic growth is driven by factors within the economy, such as human capital and technological innovation, rather than by external forces. This theory posits that investments in education, skills development, and innovation can lead to sustained economic growth without the diminishing returns that the neoclassical model predicts. Romer (1987) emphasized that technology and knowledge, crucial components of endogenous growth, can be influenced by government policy and investment, making them key drivers of long-term growth (Romer, 1987).

B. Keynesian Growth Theory

Keynesian economics suggests that inadequate demand can lead to high unemployment and stagnant growth. During economic downturns, government spending can stimulate demand and drive economic output. Keynes believed that government intervention was necessary to smooth out the business cycle by increasing demand through public expenditure during recessions, thus boosting economic activity and employment (Keynes, 1936).

2.3. Empirical Literature Review

Several empirical studies have explored the relationship between government expenditure and economic growth, with varying findings:

Emmanuel, Usifoh and Adu (2024), specifically examined the impact of government expenditure and institutional quality on economic growth. The study employed the Dynamic Ordinary Least Squares (DOLS) method to analyse time series data from 1990 to 2022. The findings indicated that government spending had a substantial and favourable effect on economic growth.

Nwobia, Nnachi, Eze and Onwe (2024) investigated Government Expenditure on Healthcare, Education and Economic Growth in Nigeria. The study

estimated the short run relationship between government spending on healthcare, education and economic growth of Nigeria. They adopted series of standard econometrics method using the Autoregressive Distributed Lag model (ARDL) to estimate the effect of government spending on healthcare and education on Nigeria's GDP as well as to estimate the short and long run relationship between government spending on health, education and economic growth in Nigeria. The result obtained from the study revealed that government spending on health has significant positive effect on economic growth.

Samson, Fiderikumo and Agbarakwe (2022), examined the relationship between public expenditure and economic growth in Nigeria. Secondary data on the real gross domestic product, total capital expenditure, total recurrent expenditure, and public debt sourced from the annual statistical bulletin of the Central Bank of Nigeria were used for the study. The Augmented Dickey-Fuller unit root was used to test the stationary of the data, followed by the Johanson co-integration analysis and the parsimonious error correction analysis. Findings show that there is a long-run relationship between the variables. Total recurrent and capital expenditure had negative and significant impact on real GDP while Public debt has a negative and significant impact on real GDP.

Chandana, Adamu and Musa, (2021) investigates the impact of Nigerian government expenditure (disaggregated into capital and recurrent) on economic growth using time series data for the period 1970-2019. The paper employed Autoregressive Distributed Lag (ARDL) model. To ensure robustness of results, the study accounts for structural breaks in the unit root test and the co- integration analysis. The key findings of the study are that capital expenditure has positive and significant impact on economic growth both in the short run and long run while recurrent expenditure does not have significant impact on economic growth both in the short run and long run.

3. METHODOLOGY

The study used the ARDL bounds model to examine the short-run and long-run effects of government expenditure on economic growth and standard of living in Nigeria. Two models were employed: one to capture the effect of government expenditure on economic growth and the other on the standard of living. The study utilized secondary data, and the ex-post facto design was applied, which focuses on existing data to examine relationships after the factors have occurred (Anyanwu, 2000).

3.1. Theoretical Framework

The study followed Keynesian economics, particularly Keynes' view on government expenditure as a tool for stabilizing the economy. Keynes argued that during economic depressions, the government must increase public expenditure to boost aggregate demand and avoid further economic downturns. He posited that government spending could stimulate economic growth and improve the standard of living, but it needed to be carefully managed to avoid inflation. Keynes viewed public expenditure as essential for short-term economic stabilization, where excessive spending could lead to inflation, while insufficient spending could cause unemployment.

3.2 Model Specification

The model for this study was based on the Keynesian perspective, which emphasized the role of government spending in regulating the economy. The relationship between government expenditure and economic growth (GDP) was expressed as:

To capture the impact of these variables on the standard of living, the Human Development Index (HDI) was used as a proxy for standard of living, with inflation rate (INFR) and interest rate (INTR) as control variables. The model was then expanded as follows:

Model One

$$\Delta(HDI)_t = \propto_0 + \delta_1 HDI_{t-1} + \delta_2 \ln\_GCEXP_{t-1} + \delta_3 \ln\_GREXP_{t-1} + \delta_4 INFR_{t-1} + \delta_5 INTR_{t-1} + \sum_{i=1}^{n} \phi_2 \Delta \ln\_GCEXP_{t-j} + \sum_{i=1}^{n} \phi_3 \Delta \ln\_GREXP_{t-l} + \sum_{i=1}^{n} \phi_4 \Delta INFR_{t-m} + \sum_{i=1}^{n} \phi_5 \Delta INTR_{t-o} + \mu_i \ldots\ldots (1)$$

Model Two

$$\Delta(\ln\_RGDP)_t = \propto_0 + \delta_1 \ln\_RGDP_{t-1} + \delta_2 \ln\_GCEXP_{t-1} + \delta_3 \ln\_GREXP_{t-1} + \delta_4 INFR_{-1} + \delta_5 INTR_{t-1} + \sum_{i=1}^{n} \phi_2 \Delta \ln\_GCEXP_{t-j} + \sum_{i=1}^{n} \phi_3 \Delta \ln\_GREXP_{t-l} + \sum_{i=1}^{n} \phi_4 \Delta INFR_{t-m} + \sum_{i=1}^{n} \phi_5 \Delta INTR_{t-o} + \mu_{ii} \ldots\ldots (2)$$

Government Capital Expenditure and Government Recurrent Expenditure were transformed to their natural logarithms to eliminate any serial correlation and to normalize the variables.

Where,
HDI = Human Development Index represents Standard of Living; ln_RGDP= Natural logarithm of Real Gross Domestic Product represents Economic Growth; ln_GCEXP = Natural logarithm of Government Capital Expenditure: ln_GREXP = Natural logarithm of Government Recurrent Expenditure; INFR = Inflation Rate; INTR = Interest Rate; C0 = Constant Variable or Intercept; δ_i= Short Run Dynamic Coefficients of the Model's Convergence to Equilibrium; $\phi\Delta i$ = Long Run Dynamic Coefficients; μ = Disturbance Term

NB: Real Gross Domestic Product (RGDP) was used to proxy Economic Growth because it measures a country's economic output adjusted for inflation, providing a more accurate representation of economic growth than nominal GDP, which is not adjusted for price changes.

Human Development Index (HDI) was used to proxy Standard of living because it provides a comprehensive and multidimensional measure that reflects the overall well-being of individuals within a country.

4. RESULTS

4.1. Unit Root Test

In order to verify the reliability of the time series, data used for this analysis, a unit root test was conducted on the selected time series data to determine whether they are stationary or non-stationary. The unit root test was employed in this task is the Augmented Dickey Fuller unit root test. The result of the ADF Test is presented below:

Table 1. Summary of Unit Root Test

	At Level (Trend and Intercept)			At First Difference (Trend and Intercept)			
Variable	**ADF Stat**	**ADF 5% CV**	**Prob.**	**ADF Stat**	**ADF 5% CV**	**Prob.**	**Result**
HDI	1.590112	-2.933158	0.9993	-6.155645*	-2.935001	0.0000*	I(1)
ln_RGDP	-0.924905	-2.936942	0.7699	-4.102035*	-2.935001	0.0026*	I(1)
ln_GREXP	-1.895417	-2.935001	0.3312	-8.524056*	-2.935001	0.0000*	I(1)
ln_GCEXP	-0.783886	-2.933158	0.8133	-7.217729*	-2.935001	0.0000*	I(1)
INTR	-2.433445	-2.933158	0.1390	-5.537678*	-2.936942	0.0000*	I(1)
INFR	-3.082044	-2.933158	0.0356**	-	-	-	I(0)

Source: Researcher's Extract from EViews 12 Output Package 2025
*Key: * Significant at 1% level; ** Significant at 5% level*

The unit root test summary in Table 1, shows that for the ARDL technique to be valid, the variables must be integrated at either level I(0) or order one I(1), but not I(2). The results indicated that HDI, ln_RGDP, ln_GREXP, ln_GCEXP, and INTR were integrated at I(1) (first differences), while INFR was stationary at I(0) (level). Given the mixed integration order of the variables, the ARDL bounds test approach was justified over other methods, which require variables to be of the same integration order..

4.1.1. Cointegration Test

Table 2. Autoregressive Distributed Lag Bounds Test for Co-Integration

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	**Value**	**Signif.**	**I(0)**	**I(1)**
F-statistic	10.53462	10%	2.45	3.52
k	4	5%	2.86	4.01
		2.5%	3.25	4.49
		1%	3.74	5.06

Source: Researcher's Compilation, 2025

The ARDL Cointegration bounds test in table 2, indicated a long run relationship in the model, and going by the decision rule of the ARDL Bounds test, we cannot accept the null hypothesis of no cointegration since the F-Bounds Statistic of 10.53462 is greater than the I (0) and I (1) bounds at 10%, 5% and 1% respectively.

4.2. Dynamic Short Run ARDL Error Correction for Model 1.

4.2.1. Model One: Effect of Government Expenditure on Standard of living in Nigeria

Table 3 Result Estimates of Dynamic Short Run ARDL Error Correction Model for Effect of Government Expenditure on Standard of Living in Nigeria.

Variable	Coefficient	t-Statistic	Prob.
C	0.222699	5.700106	0.0000
@TREND	0.002563	5.906952	0.0000
D(ln_GREXP)	-0.010951	-4.271461	0.0002
D(ln_GREXP(-1))	-0.009466	-2.760131	0.0103
D(ln_GREXP(-2))	-0.009584	-3.382975	0.0022
D(INFR)	8.97E-05	2.081583	0.0470
D(INFR(-1))	0.000276	4.810328	0.0001
D(INFR(-2))	0.000164	2.789231	0.0096
CointEq(-1)*	-0.568350	-5.654785	0.0000

Source: Researcher's Extract from Eviews 12 Output Package 2025
*Key: * Significant at 1% level; ** Significant at 5% level*

The ARDL regression results in Table 3, showed that the constant term had a positive and significant coefficient of 0.2227, meaning that when other variables are held constant, the Human Development Index (HDI) in Nigeria increases by 0.2227 units on average.

The trend variable had a positive significant coefficient of 0.0026, indicating an underlying growth trend in Nigeria, likely driven by factors such as technological advancements and capital accumulation.

Government recurrent expenditure (GREXP) exhibited a negative and significant relationship with HDI in Nigeria in the short run, with coefficients of -0.01095, -0.00947, and -0.00958 in the current and lagged years, respectively. This suggests that GREXP significantly reduces HDI, thereby decreasing the standard of living in Nigeria.

Inflation rate (INFR) showed a positive and significant effect on HDI in Nigeria in the current year and in the first and second year lags, contributing to an increase in the standard of living.

The Error Correction Mechanism (ECM) coefficient of -0.5684 indicates that any disequilibrium in Nigeria's economy will be corrected at a rate of 56% annually, implying that GDP per capita will converge back to equilibrium at this rate every year. The negative sign and statistical significance (p-value of 0.0001) confirm the validity of the ECM.

4.2.2. ARDL Long Run Estimates

Table 4. Static Long Run Estimates for Effect of Government Expenditure on Standard of Living in Nigeria.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ln_GREXP	-0.003116	0.003989	-0.781149	0.4415
ln_GCEXP	0.003848	0.003803	1.011832	0.3206
INTR	-0.000913	0.000335	-2.724167	0.0112
INFR	-0.000472	0.000116	-4.056762	0.0004

Source: Researcher's Extract from Eviews 12 Output Package 2025
*Key: * Significant at 1% level; ** Significant at 5% level*

Government Recurrent Expenditure: The long run coefficient of government recurrent expenditure had a negative and insignificant relationship with human development index (HDI), thereby decreasing standard of living in Nigeria insignificantly at -0.003116 units in the long run period

Government Capital Expenditure: The long run coefficient of government capital expenditure had a positive and insignificant relationship with human development index, thereby increasing standard of living in Nigeria insignificantly at 0.003848 units in the long run period.

Interest Rate (INTR): The long run coefficient of interest rate had a negative and significant relationship with human development index, thereby decreasing standard of living in Nigeria significantly at -0.000913 units in the long run.

Inflation Rate (INFR): The long run coefficient of inflation rate had a positive and significant relationship with human development index, thereby decreasing standard of living in Nigeria significantly at -0.000472 units in the long run period.

4.3. Dynamic Short Run ARDL Error Correction for Model 2

4.3.1. Model Two: Effect of Government Expenditure on Economic Growth of Nigeria

Table 5. Result Estimates of Dynamic Short Run ARDL Error Correction Model for Effect of Government Expenditure on Economic Growth of Nigeria.

Variable	Coefficient	t-Statistic	Prob.
C	2.935752	8.062620	0.0000
D(ln_RGDP(-1))	-0.009133	-0.084408	0.9336
D(ln_RGDP(-2))	0.325341	3.721743	0.0014
D(ln_GREXP)	-0.027967	-1.617433	0.1223
D(ln_GREXP(-1))	-0.132470	-5.098393	0.0001
D(ln_GREXP(-2))	-0.124432	-5.657441	0.0000
D(ln_GCEXP)	0.010706	1.186958	0.2499
D(LN_GCEXP(-1))	0.024248	2.576131	0.0185
D(INTR)	0.002005	1.386274	0.1817
D(INTR(-1))	0.007493	4.035192	0.0007
D(INTR(-2))	0.006828	4.218646	0.0005
D(INTR(-3))	0.003556	2.799131	0.0114
D(INFR)	0.000550	1.664177	0.1125
D(INFR(-1))	1.29E-05	0.046320	0.9635
D(INFR(-2))	0.001125	3.533960	0.0022
CointEq(-1)*	-0.299722	-7.985124	0.0000

Source: Researcher's Extract from Eviews 12 Output Package 2025

Key: * Significant at 1% level; ** Significant at 5% level

Constant (C): The ARDL regression result above in table 5, revealed that the coefficient of the constant term is positive and significant and conforms to economic apriori expectation. The coefficient value of the constant term is 2.935752, which statistically implies that when other explanatory variables are held constant, Real Gross Domestic Product will significantly increase by 2.935752 units on the average.

Real Gross Domestic Product (ln_RGDP): From the analysis of the short run coefficients showed that ln_RGDP was negative in the 1st previous year lag period with the coefficient of -0.009133, decreasing itself insignificantly by 0.9336 units in the first year lag at 5 percent level of significance. But was positive in the 2nd previous year lag period by 0.325341, increasing itself significantly by 0.0014units in the 2nd year lag at 5 percent level of significance.

Government Recurrent Expenditure (ln_GREXP): Analysis of the short run coefficient of government recurrent expenditure had a negative relationship with real gross domestic product in the current year, 1st, and 2nd year time periods in Nigeria with the coefficients of -0.027967, -0.132470, and -0.124432, decreasing economic growth in Nigeria insignificantly in the current year by 0.1223 units but significantly in the 1st, and 2nd year lag period by 0.0001, and 0.0000 units respectively at 5 percent level of significance. This implies that government recurrent expenditure in the previous year lag one and two had a strong negative influence on real gross domestic product.

Government Capital Expenditure (ln_GCEXP): Analysis of the short run coefficient of government capital expenditure had a positive relationship with real gross domestic product in the current, and 1st year lag in Nigeria with the coefficients of 0.010706, and 0.024248, insignificantly increasing economic growth by 0.2499 units in the current year and in the 1st previous year lag it significantly increased economic growth by 0.0185 units respectively at 5 percent level of significance**.**

Interest Rate (INTR): Analysis of the short run coefficient of interest rate had a positive relationship with real gross domestic product in the current year lag, 1st, 2nd, and 3rd previous year lags by 0.002005, 0.007493, 0.006828, 0.003556 coefficients while contributing to the growth of real gross domestic product i.e. economic growth in Nigeria in the current year lag, insignificantly increasing economic growth by 0.1817 units and in the 1st, 2nd, and 3rd previous year lags, interest rate significantly increased economic growth by 0.0007, 0.0005, 0.0114 units at 5 percent level of significance.

Inflation Rate (INFR): Analysis of the short run coefficient of inflation rate had a positive relationship with real gross domestic product in the current year, 1st and 2nd year lag period in Nigeria by 0.000550, 1.29E-05, 0.001125 units, insignificantly increasing real gross domestic product by 0.1125, 0.9635 units at 5 percent level of significance in the current year and 1st year lag period, but significantly increasing real gross domestic product by 0.0022 units at 5 percent level of significance.

Error Correction Mechanism ECM (-1): The coefficient of the ECM showed that the speed of adjustment between the short run dynamics and the long run equilibrium is 30%, thus, the ECM will adequately act to correct any deviations of the short run dynamics to its long-run equilibrium by 30 percent annually. This means that if real gross domestic product is at disequilibrium, it converges back to equilibrium at an average speed of about 30 percent (-0.299722 x 100) every year in Nigeria.

4.3.2. ARDL Long Run Estimates

Table 6. Static Long Run Estimates for Effect of Government Expenditure on Economic Growth in Nigeria.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ln_GREXP	0.264686	0.058640	4.513731	0.0002
ln_GCEXP	-0.058977	0.065200	-0.904562	0.3770
INTR	-0.019923	0.005912	-3.369861	0.0032
INFR	-0.001378	0.002244	-0.614007	0.5465

Source: Researcher's Extract from Eviews 12 Output Package 2025

Key: * Significant at 1% level; ** Significant at 5% level

Government Recurrent Expenditure (ln_GREXP): The long run coefficient of government recurrent expenditure had a positive and insignificant relationship with real gross domestic product in Nigeria, increasing economic growth of Nigeria significantly at 0.264686 units in the long run period.

Government Capital Expenditure (ln_GCEXP): The long run coefficient of government capital expenditure had a negative and insignificant relationship with real gross domestic products, decreasing economic growth of Nigeria significantly at -0.058977 units in the long run period.

Interest Rate (INTR): The long run coefficient of interest had a negative and significant relationship with real gross domestic products, thereby decreasing economic growth of Nigeria significantly at -0.019923 units in the long run period.

Inflation Rate (INFR): The long run coefficient of inflation rate had a positive and insignificant relationship with real gross domestic products, thereby increasing economic growth of Nigeria insignificantly at -0.001378 units in the long run period.

4.4. Post Estimation Tests/Diagnostic Test

4.4.1. Breusch-Godfrey Serial Correlation LM Test for Both Models

The standard errors and variances of the variables estimated in the model are affected by serial correlation in the error term, confounding inference. The study used a serial correlation LM check for autocorrelation in the error term entering the model to prevent this problem. The test's outcome is shown in the table below.

Table 7. Result Breusch-Godfrey Serial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.231765	Prob. F(2,36)	0.3038
Obs*R-squared	2.690036	Prob. Chi-Square(2)	0.2605

Source: Researcher's Extract from Eviews 12 Output package.

From Breusch-Godfrey Serial Correlation LM Test table, the null hypothesis of no serial correlation cannot be rejected as the p-value from the LM serial correlation test is 0.2605> 0.05 level of significance indicating an acceptance of the null hypothesis.

4.4.2. Breusch-Pagan-Godfrey Heteroskedasticity Test for Both Models

Heteroscedasticity is when the ordinary least squares rule is broken. The error terms' variance is homoscedastic, which means they have a constant variance, according to the regression assumption. Simply defined, heteroskedasticity occurs when the error terms' variance is not constant across all X values. The study used a Breusch-Pagan-Godfrey Heteroskedasticity Test in the error term entering the model to prevent this issue. The test's outcome is shown in the table below.

Table 8. Result of Breusch-Pagan-Godfrey Heteroskedasticity Test

F-statistic	0.594261	Prob. F(19,19)	0.8672
Obs*R-squared	14.53726	Prob. Chi-Square(19)	0.7515
Scaled explained SS	3.455956	Prob. Chi-Square(19)	1.0000

Source: Researcher's Extract from Eviews 12 Output package.

From Breusch-Pagan-Godfrey Heteroskedasticity result, the null hypothesis of no serial correlation cannot be rejected as the p-value from the Heteroskedasticity Test is 0.7515> 0.05 level of significance indicating an acceptance of the null hypothesis.

4.5. Discussion of Findings for Both Models

This study provided critical insights into the relationship between government expenditure and both economic growth and the standard of living in Nigeria, examining both short- and long-run effects.

Government recurrent expenditure (GREXP) had a negative impact on both economic growth and the standard of living in the short run, consistent with the findings of Samson et al. (2022) and Bingilar and Oyadonghan (2021). Recurrent expenditure, particularly on public sector wages, subsidies, and transfers, crowded out productive investments, leading to inefficiencies. The negative short-run effects of GREXP were especially noticeable in the first two years, suggesting that misallocations within the recurrent expenditure, particularly in areas such as health and education, hindered improvements in human development and economic growth.

In contrast, government capital expenditure (GCEXP) showed a positive short-run relationship with economic growth, particularly in the first year, supporting the view of Emmanuel & Adu (2024) that capital spending on infrastructure and education drives short-term growth. However, this positive impact did not extend into the long run, where the effect of GCEXP was insignificant. The long-term inefficacy of GCEXP can be attributed to delays, mismanagement, and poor governance in project execution, as noted by Okwu et al. (2022). This inefficiency in capital expenditure implementation not only restrained economic growth but also stunted the potential improvements in living standards over time.

Interest rates were found to have a positive short-run relationship with economic growth, as lower rates stimulated investment and consumption. This supported the findings of Keji (2021), who emphasized the role of low interest rates in fostering economic growth. However, in the long run, high interest rates significantly hampered economic growth, illustrating their adverse effects on investment and business expansion. Similarly, interest rates had a mixed impact on the standard of living, where low rates temporarily boosted household income in the informal sector, but long-term high rates undermined income stability and access to essential services.

Inflation had an insignificant effect on economic growth in the short run, with its impact becoming more apparent in the second year. This aligns with the findings of Nwobia et al. (2024), who argued that inflation doesn't immediately disrupt growth but can cause long-term instability. Similarly, the short-run positive effect of inflation on the standard of living, which might temporarily increase household income in informal sectors, was not sustainable. As inflation eroded real income and reduced access to basic services, it negatively impacted the standard of living in the long run. This was in line with Emmanuel & Adu (2024), who suggested that persistent inflation exacerbates income inequality and undermines living standards.

5. Conclusion

This study used the Autoregressive Distributed Lag technique to investigate the effect of government expenditures on economic growth and the standard of living in Nigeria from 1981-2023. It examined the impact of government expenditure, inflation, and interest rates on both variables.

The findings revealed that government recurrent expenditure negatively affected economic growth in the short run, crowding out productive investments and causing inefficiencies. While the long-run effect of government recurrent expenditure was positive, it remained statistically insignificant, indicating that it failed to foster sustainable growth. In contrast, government capital expenditure showed a positive short-run effect on growth but had an insignificant long-run impact, likely due to inefficiencies in project implementation and governance challenges. Interest rates stimulated growth in the short run but negatively affected it in the long run, highlighting the adverse effects of sustained high borrowing costs. Inflation had a minimal effect on growth but played a significant role in reducing the standard of living by eroding real income and access to essential services.

Regarding the standard of living, government recurrent expenditure negatively impacted the human development index in both the short and long run, suggesting that recurrent expenditure did not improve

living standards. While government capital expenditure showed a positive but insignificant effect on the human development index, delays and mismanagement hindered its potential benefits. Inflation had a temporary positive effect on the human development index but undermined living standards in the long run as it eroded real income and access to services.

To achieve sustainable growth and improve living standards, the study proffered policy recommendations aimed at improving expenditure allocation, governance, and inflation control.

5.1. Policy Recommendations

1. The government should prioritize recurrent spending on productive sectors like health, education, and infrastructure to boost human capital development, while implementing public sector reforms to enhance efficiency, reduce wastage, and improve accountability.
2. The government should strengthen governance to improve project management and reduce inefficiencies. Public-private partnerships should be encouraged, focusing on high-return infrastructure projects for long-term benefits.
3. To foster sustainable economic development, the central bank should maintain stable, low interest rates to make credit more accessible for businesses and consumers. Additionally, the government should explore alternative funding sources like development finance institutions or subsidized credit programs to support key sectors, reducing the impact of high borrowing costs on small and medium enterprises and startups.
4. To mitigate inflation's negative effects on real income and access to services, the government should implement a comprehensive inflation control strategy, including monetary and fiscal policies. Increasing domestic production in agriculture, manufacturing, and energy will reduce import dependence, stabilize prices, and improve purchasing power, particularly through targeted interventions in food and energy price volatility.

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