GOVERNMENT SPENDING ON EDUCATION AND ECONOMIC GROWTH IN NIGERIA

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Abstract

This study investigates the relationship between government expenditure on education and economic growth in Nigeria using quarterly data from 1994 to 2023. Employing an ex-post-facto research design and the Autoregressive Distributed Lag Model (ARDL), the study examines how government spending on education, health, and defense, alongside the control variable of interest rates, influence Gross Domestic Product (GDP). The findings reveal that government expenditure on education has a significantly positive impact on GDP in the long run, highlighting its crucial role in fostering economic growth. Similarly, investments in health and defense also show positive effects on GDP. Conversely, interest rates do not exhibit a significant influence on economic growth. Based on these results, the study proposes policy recommendations focusing on increasing investment in education and healthcare while sustaining defense expenditure to enhance economic growth in Nigeria and similar economies.

Keywords: government spending, education, economic growth, Autoregressive Distributed Lag Model

Introduction

Inadequate education funding in Nigeria has exacerbated the dilapidated condition of government-owned schools, where numerous facilities require renovation. With rising educational demands, school administrators have urged stakeholders in the education sector to take decisive actions to improve infrastructural facilities (Akindele, 2012).Apart from the deteriorating infrastructure, frequent strikes by workers highlight the underfunding issues in the sector. Various school unions have repeatedly protested against delays in regular salary payments, earned academic allowances, salary arrears, and other welfare issues. Despite efforts such as the National Association of Nigerian Students' decision to halt political parties' primary elections, negotiations between unions and the government have not resolved the union's demands. Consequently, ongoing events in the education sector continue to disrupt the educational system.

The inadequate government funding for education in Nigeria, significantly lower than that of many other developing countries, is a contributing factor to the country's low GDP (Ayeni & Omobude, 2018). A government dedicated to fostering human capital development and economic growth would prioritize increased investment in education. However, in Nigeria, education receives only 6.3% of the annual budget (as exemplified in the 2021 budget allocation), falling short of the UNESCO standard (Okpabi, 2022).

Additionally, Nashayya (2010) examined the distribution of staff, organizational structure, resources, and provisions within the school system, highlighting the critical importance of principles in school finance and resource allocation for effective school management. Education plays a significant role in the Nigerian economy, fostering incentives and subsidizing economic activities (Ahmed, 2015).

Nonetheless, further investigation is warranted to analyze the impact of educational budget allocations on the growth of the Nigerian economy.Ahmad (2007) emphasized that the development of Nigeria's educational system is closely tied to the state of its economy, as budget allocations and expenditures for education are interconnected with economic growth. Furthermore, deficiencies in education and shortages of skilled labor pose significant obstacles to social development and the economy. Abdulkarim and Saidatula (2021) affirmed that while there is a legal mandate for financial allocations to education in the country, the implementation process may vary widely.

Prior to colonialism in Nigeria, the education system consisted of two main types: native education and religious education. These forms of education focused on practical skills such as sweeping, cleaning the environment, fishing, and farming. Teenagers were taught self-reliance and contributed to family income through these activities (Omonkalo, 2014).The allocation of government funds to education and its reciprocal impact on economic growth have been subjects of enduring debate for decades. Academics have extensively discussed the relationship between government spending on education and its influence on economic growth. According to Razzolini and Shughart (2017), government plays dual roles of providing protection and ensuring the provision of essential public goods. Increased government expenditure on socioeconomic and physical infrastructure contributes positively to economic growth. Investments in sectors like health and education enhance labor productivity and national output. Likewise, infrastructure investments in areas such as transportation, communication, and energy reduce production costs, stimulate private sector investment, and improve corporate profitability, all of which foster economic expansion.

According to Ahsan, Kwan, and Sahni (2012), Kolluri, Panik, and Wahab (2016), as well as Ghali (2018), the expansion of government expenditure positively contributes to economic growth. There is a widespread consensus that government spending, whether recurrent or capital, especially on social and economic infrastructure, can stimulate growth. One of the primary challenges for economic development in developing countries like Nigeria is ensuring adequate infrastructure services to meet the needs of businesses, households, and other users. Consequently, there has been a significant increase in infrastructure services such as transportation, power, water supply, sanitation, telecommunications, and irrigation (World Bank Development Report, 2020).

Government spending in Nigeria has risen steadily, driven by substantial revenues from crude oil production and sales, coupled with increasing demands for public utilities such as roads, telecommunications, power, education, and healthcare. There is also a growing need for both domestic and international security measures to benefit the populace and the nation. According to data from the Central Bank of Nigeria (CBN), total government expenditure, encompassing both capital and recurrent expenditures, has shown consistent growth over the past three decades. For instance, overall government recurrent expenditure escalated from N4,805.20 million in 2000 to N984,277.60 million in 2010, and further to N2,482,617.80 million in 2017.

Ige (2016) argued that prioritizing education quality should be a paramount concern for Nigerians. Government schools are significantly underfunded, leading to unfavorable learning conditions characterized by inadequate infrastructure, insufficient learning materials, and a shortage of qualified teachers. Additionally, a substantial number of children in the country lack access to education. The rise in education expenditure correlates with the rapid expansion of the school system nationwide. However, the education sector faces limitless needs and demands amid limited financial resources, necessitating careful budgeting to prioritize these requirements (Banamali & Ksh, 2014). Effective achievement of strategic objectives in school management heavily relies on a robust budgetary system. Therefore,

identifying school objectives, allocating resources, and implementing them are crucial steps toward attaining these goals.

Therefore, education is crucial due to its positive impact on human capital, leading to enhanced productivity and economic growth. The foundation of Nigeria's educational system lies in its recurrent expenditure trends, as evidenced by allocations of N392.4 billion in 2015 and N369.6 billion in 2016, constituting approximately 15.05% and 9.32% respectively (CBN, 2019). In contrast, Ghana allocates 31% of its budget to education, highlighting Nigeria's perceived neglect of educational development. This allocation falls well below the United Nations Educational, Scientific and Cultural Organization's (UNESCO) recommended benchmark of 26% (UNICEF, 2019). The consequences of underfunding education are manifested in frequent and prolonged institution closures due to strikes and other disruptions.

The National Policy on Education (FGN, 2004) emphasizes that educational expenditures, including social and institutional costs, are substantial and require adequate funding for successful implementation, ultimately contributing to economic growth. Ogungbenle and Edogiawerie (2016) noted that the Macpherson Constitution of 1951 designated education as a concurrent matter, allowing both central and provincial councils to legislate on the issue as needed. After independence and the creation of states, funding for education in Nigeria was decentralized to the federal, state, and local governments.

Data from the Nigerian Central Bank (2022) reveals a downward trend in educational expenditure and sectoral output in Nigeria from 2011 to 2022. This trend has been influenced by several factors, including insufficient funding, misappropriation, leakages, industrial strikes, and regulatory issues. For instance, in 2007, total allocations amounted to 179.6 billion Naira, but both recurrent and capital expenditures on education decreased to 164 billion and 48.8 billion Naira, respectively, by 2008, and further dropped to 137.1 billion and 43.4 billion Naira in 2009, reflecting a 5.1 percent decline in federal government aggregate expenditure. However, there was a significant 102.6 percent increase (87.7 billion Naira) in education spending in 2010. In 2011, the education sector faced challenges such as insecurity due to industrial actions, closure of unauthorized universities, and accreditation crises in some tertiary institutions (CBN, 2011).

The Education Trust Fund (ETF) was transformed into the Tertiary Education Trust Fund (TETFUND), coinciding with the establishment of nine federal universities. In 2012 and 2013, allocations amounted to ₦273.3 billion and ₦295.4 billion respectively. By 2014, recurrent expenditure in education totaled ₦243.8 billion, while capital expenditure declined from ₦148.2 billion in 2013 to ₦40.8 billion in 2014. According to the Central Bank of Nigeria's economic report for the first half of 2016, recurrent expenditure on education was ₦160.03 billion and capital expenditure was ₦30.06 billion, with sectoral output reaching ₦644.44 billion (CBN, 2018; NBS, 2019).Therefore, this study aims to explore the intricate relationship between government expenditure on education and economic growth in Nigeria.

Statement of the Problem

The issue of economic growth in Nigeria appears intricately tied to spending patterns, where substantial expenditures have been consistently allocated each year, yet the economy's performance has consistently fallen short of expectations. Nigeria's fiscal management has thus been perceived as deficient. Using the 2019 budget as a case study, a greater proportion of funds are allocated to recurrent expenditure compared to capital expenditure, with the infrastructure sector receiving a notable allocation of 87% for capital expenditure and 12.2% for recurrent expenditure. In other sectors, the breakdown is as follows: social

sector with capital expenditure at 11.4% and recurrent expenditure at 88.6%, economic sector with capital expenditure at 40.1% and recurrent expenditure at 59.9%, and security sector with capital expenditure also at 40.1% and recurrent expenditure at 59.9% (Budget, 2019).

Despite the consistent annual increase in budgetary allocations and the growth in expenditures observed over the years, the anticipated reduction in poverty and significant impact on the country's overall growth and development have not materialized. Nigeria possesses abundant human and material resources that should ideally position it as a leading economy. However, the disconnect between government spending and economic growth has resulted in skewed economic performance and widespread corruption. Addressing these issues requires more than theoretical discussion; empirical research is needed to understand why public spending has not translated into sustainable economic growth in Nigeria.

It is disconcerting to note that the growth in government expenditure has not mirrored a corresponding level of economic growth in Nigeria. For instance, between 2010 and 2019, government expenditure grew by 15.53% and 2.15% respectively, whereas GDP growth rates were 8.79% and 2.21% during the same periods. This discrepancy indicates that government expenditure growth has outpaced GDP growth over the same timeframe, with Nigeria experiencing a GDP growth rate of -1.79% as of 2020.

This study seeks to investigate the impact of government expenditure on education, health, and defence on economic growth, offering recommendations for policy formulation and implementation aimed at fostering sustainable economic development in Nigeria.

Literature Review

Government Expenditure on Education

Government expenditure on education encompasses spending on schools, universities, and other public education entities, including support for educational services. This expenditure is crucial for fostering human capital development, which can significantly enhance productivity and economic growth (Gootjes, de-Haan, Jong-A-Pin, 2021). Education spending by the government includes current and capital expenditures, which cover the costs of running educational institutions, administrative costs, and subsidies for private entities such as students and households (Nikiforos, 2021).

Recent studies have emphasized the importance of public education spending in driving economic growth. According to Svitlana and Gridin (2022), direct expenditure on educational institutions and related public subsidies contribute significantly to human capital development. This, in turn, can lead to a more skilled workforce, thereby increasing the productivity of both physical and human resources. Ratna, Rossieta, and Martani (2022) assert that education spending is a critical factor in economic development, as it provides a foundation for higher-paying jobs and improved living standards.

Furthermore, education spending by the government plays a pivotal role in promoting growth and equity, helping to eliminate poor quality education and enhance equity through various channels (Leonardo, 2023; Postiglione & Wright, 2023). Studies by Hugh, Brown, and Cheung (2023) highlight that increased government expenditure on education leads to better outcomes in terms of job prospects and economic stability, as individuals with higher education levels are more likely to secure well-paying positions.

Economic Growth

Economic growth is a fundamental macroeconomic goal, as it facilitates higher living standards and job creation. It is defined by an increase in a country's productive capacity, measured through metrics such as Gross Domestic Product (GDP). For developing countries, the relationship between government spending and economic growth is particularly significant (Ogundipe & Oluwatobi, 2023).

Muritala and Taiwo (2022) describe economic growth as a long-term increase in a country's capacity to supply increasingly diverse economic goods to its population. This growth is based on advancing technology and the necessary institutional and ideological adjustments. They emphasize that economic growth involves an increase in real GDP, which translates to increased national output and wealth.

Recent empirical studies have provided further insights into the relationship between government spending and economic growth. Ijuo and Andohol (2023) note that ensuring rapid and sustainable economic growth is a major goal for most economies. They argue that effective government spending is crucial for achieving this goal, especially in developing countries like Nigeria, where public spending has steadily increased over time.

Theoretical Review

Maslow's Hierarchy of Needs Theory

Maslow's Hierarchy of Needs is a motivational theory that categorizes human needs into five levels: physiological, safety, love/belonging, esteem, and self-actualization. This theory is instrumental in character building and fostering professionalism in students through self-regulated learning (Jerome, 2023).

Addressing the physiological needs of students involves providing a conducive learning environment, including subsidized meals and comfortable facilities. Safety needs can be met through effective classroom management, emergency procedures, and a supportive environment. Promoting a sense of belonging is achieved through interaction and collaboration in schools. Instructional designs should focus on building self-esteem, while self-actualization can be encouraged through creative activities that allow students to explore their potentials.

Adolph Wagner's Law

Wagner's Law posits that as a nation's income increases, its public sector will grow in relative significance. Wagner argued that increased complexity in legal relationships and communications, resulting from industrialization, leads to a larger role for the state in regulatory and protective activities (Peters, 2023). As nations develops, the demand for public services such as law and order and economic regulation increases, necessitating higher public expenditures.

Keynesian Theory of Public Expenditure

The Keynesian theory suggests that government spending can positively contribute to economic growth by increasing employment, profitability, and investment through multiplier effects on aggregate demand. According to Keynes, public expenditures are exogenous factors that can be used as policy instruments to promote growth (Ewubare & Eyitope, 2023).

Methodology

The study employs an ex-post-facto research design using quarterly data from 1994 - 2023 published by the Central Bank of Nigeria while the Autoregressive Distributed Lag Model (ARDL) was used to estimate the relationship between the dependent and the independent variables of the study. The variables estimated in the study include; gross domestic product was used as dependent variable while government expenditure on education, government expenditure on health and government expenditure on defense were used as independent variables while interest rate was used as the control variable.

Model Specification

To empirically analyse the impact of government expenditure on education on economic growth in Nigeria, the study adopted and modified the model built by Omojimite (2020)where Gross domestic product at current prices (GDP) was used as the dependent variable, while government expenditure was used as the independent variable. Hence, the model is specified below;

$$GDP = F(GEE, GEH, GED, INR) \quad 1$$

The linear regression equation derived from the functional relationship above is:

$$GDP = b_0 + b_1 GEE + b_2 GEH + b_3 GED + b_4 INR + \mu \quad 2$$

Where, GDP = Gross Domestic Product, GEE = Government Expenditure on Education, GEH = Government Expenditure on Health, GED = Government Expenditure on Defense, and INR = Interest Rate.

Economic Criteria (Apriori Expectation)

The expected signs for the coefficients in the regression model are as follows: an increase in government expenditure on education (GEE) is anticipated to positively affect Gross Domestic Product (GDP) ($b1>0b$); similarly, higher government expenditure on health (GEH) is expected to have a positive impact on GDP ($b2>0$). Government expenditure on defense (GED) is also expected to positively influence GDP ($b3>0$), whereas an increase in the interest rate (INR) is likely to negatively affect GDP ($b4<0$).

Results

This chapter focuses on the presentation of the estimation results and analysis of the data employed to address the objectives of the study. The analysis is based on standard econometric techniques such as unit root test and Autoregressive Distributed Lag Model (ARDL) which are conducted to examine the short run dynamics and long run equilibrium relationship.The variables considered in this research work are: Gross Domestic Product (GDP) which is the dependent variable and the independent variables were government expenditure on health, government expenditure on education, government expenditure on defence and interest rate. The results and their discussions are presented below:

Unit Root Results

The Augmented Dickey-Fuller (ADF) unit root test was employed to test for stationarity or the existence of unit roots in the data. The test result is as presented below:

Table 1: Augmented Dickey Fuller Unit Root Test Results

ADF tests at Level				ADF tests at 1st Difference			
Series	ADF Statistic	5% Critical Level	p-Values	ADF Statistic	5% Critical Level	p-Values	Order of Integration
LGDP	-7.580614	-3.450807	0.0000	-	-	-	I(0)
LGEE	-2.536141	-3.448021	0.3105	-11.51310	-3.448348	0.0000	I(1)
LGEH	-2.068481	-3.448021	0.5576	-11.69361	-3.448348	0.0000	I(1)
LGED	-3.260786	-3.448021	0.0780	--6.727794	3.449365	0.0000	I(1)
INR	-4.211353	-2.936942	0.0019				I(0)

*NB: I(0) stands for stationary at level while I(1) stands for stationary at first difference.
Source: Researcher's Estimate from Eview 9.0 (2024)

The Augmented Dickey-Fuller (ADF) unit root test presented in Table 1above disclosed that the gross domestic product and interest rate were stationary at level while the government expenditure on education, government expenditure on health, and government expenditure on defense were stationary at first difference.

The Phillip-Perron unit root tests were used to confirm the authentication of the ADF unit root test result. The Phillip-Perron unit root test results are presented in Table 2 as thus

Table 2: Phillips-Perron Unit Root Test

ADF tests at Level				ADF tests at 1st Difference			
Series	ADF Statistic	5% Critical Level	p-Values	ADF Statistic	5% Critical Level	p-Values	Order of Integration
LGDP	-3.571716	-3.526609	0.0453				I(0)
LGEE	-2.598995	-3.523623	0.2828	-4.868724	-3.526609	0.0017	I(1)
LGEH	-1.607827	-3.523623	0.7725	-4.978541	-3.526609	0.0013	I(1)
LGED	0.209935	-3.523623	0.9973	-5.037854	-3.526609	0.0011	I(1)
INR	-8.046304	-3.523623	0.0000				I(0)

*NB: I(0) stands for stationary at level while I(1) stands for stationary at first difference.
Source: Researcher's Estimate from Eview 9.0 (2024)

The Phillip-Perron test results for the stationarities of the time series data used in this study as presented in Table 2 revealed that there exists a mixed order of integration among the variables of interest used in this study. The Phillip-Perron result further indicated that the real gross domestic product and interest rate were stationary at level while the government expenditure on education, government expenditure on health, and government expenditure on defense respectively were stationary at first difference. Therefore, both the ADF and the Phillip-Perron test results agreed that there exists a mixed order of integration among the variables under investigation. Both the ADF and the Phillip-Perron tests also agreed that none of the variables used in the study was stationary at the second difference.

ARDL Bound Test

The ARDL bound test result is presented as thus

Table 3: ARDL – Bound Test Result

Test Statistic	Value	k
F-statistic	6.446495	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

Sources: Researchers' estimate from E-view, 9.0, 2024

The ARDL bound test result as presented in table 3indicated that the F-statistic computed from the test was 6.446495 at 5% level of significance, suggesting a long-run relationship between government expenditure and economic growth in Nigeria over the period from 1994Q3 to 2023Q4. This finding implies that changes in government expenditure have been associated with changes in economic growth in the long term according to the data analyzed.

The ARDL Short Run Result

Table 4: The Short Run Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LGDP(-1))	-0.203002	0.084293	-2.408294	0.0177
D(LGEE)	0.015887	0.016572	0.958689	0.3398
D(LGEH)	0.018778	0.011614	1.616798	0.1088
D(LGED)	0.016905	0.011851	1.426474	0.1566
D(INR)	0.000250	0.000250	1.000920	0.3191
CointEq(-1)	-0.415047	0.109746	-3.781880	0.0002

Sources: Researchers' estimate from E-view, 9.0, 2024

The short run result presented in table 4 above revealed that the lagged difference of GDP (D(LGDP(-1))) has a negative and significant coefficient (-0.203002) with a t-statistic of -2.408294 (p = 0.0177), indicating that past GDP values negatively influence current GDP growth in the short run. Government expenditure on education (D(LGEE)) in the short run has a positive but insignificant coefficient (0.015887) with a t-statistic of 0.958689 (p = 0.3398), suggesting that changes in education spending do not immediately impact GDP. Similarly, government expenditure on health (D(LGEH)) shows a positive but insignificant short-run effect (0.018778) with a t-statistic of 1.616798 (p = 0.1088). The coefficient for government expenditure on defense (D(LGED)) is positive but not significant (0.016905) with a t-statistic of 1.426474 (p = 0.1566). The interest rate's short-run effect on GDP (D(INR)) is minimal and insignificant (0.000250) with a t-statistic of 1.000920 (p = 0.3191). However, the insignificant of the short run coefficient may be attributed to diversion of public funds by public office holders among others.

The error correction term (CointEq(-1)) has a coefficient of -0.415047 with a t-statistic of -3.781880 (p = 0.0002), indicating a significant adjustment speed towards the long-run equilibrium. The negative sign confirms that any deviation from the long-run equilibrium is corrected by approximately 41.5% each quarter.

The ARDL Lung Run Result

Table 6: The Long Run Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LGEE	0.337902	0.090091	3.750655	0.0003
LGEH	0.102407	0.043657	2.345731	0.0208
LGED	0.092036	0.033779	2.724673	0.0074
INR	0.003877	0.004133	0.937954	0.3503
C	9.760607	0.322453	30.269860	0.0000

Sources: Researchers' estimate from E-view, 9.0, 2024

The long run result presented in table 6 above indicated that,government expenditure on education (LGEE) has a positive and highly significant impact on GDP (0.337902) with a t-statistic of 3.750655 (p = 0.0003), suggesting that increased spending on education substantially contributes to long-term economic growth. Similarly, government expenditure on health (LGEH) shows a positive and significant effect on GDP (0.102407) with a t-statistic of 2.345731 (p = 0.0208), indicating that health investments promote economic growth. Expenditure on defense (LGED) exhibits a positive and significant relationship with GDP (0.092036) with a t-statistic of 2.724673 (p = 0.0074), reflecting its importance in economic stability and growth. The interest rate (INR) does not significantly affect GDP in the long run (0.003877) with a t-statistic of 0.937954 (p = 0.3503), suggesting that other factors may play a more dominant role in influencing GDP growth. The constant term (C) is highly significant (9.760607) with a t-statistic of 30.269860 (p = 0.0000), indicating strong baseline GDP growth independent of the other variables.The post diagnostic tests conducted revealed that there was no presence of serial correlation, nor heteroskedasticity and also the residual of the model was normally distributed.

Policy Recommendations

Based on the long-run findings of this study, the following policy recommendations are proposed to enhance economic growth in the selected African countries through strategic government expenditure:

Increase Investment in Education: The significant positive impact of government expenditure on education on long-term economic growth underscores the need for increased investment in this sector. Policymakers should allocate more resources to improve educational infrastructure, enhance teacher training, and expand access to quality education at all levels. Emphasis should be placed on technical and vocational education to equip the workforce with the skills needed for a modern economy.

Enhance Healthcare Funding: Government expenditure on health has been shown to positively and significantly impact economic growth. Therefore, increasing healthcare funding is crucial. Policymakers should focus on improving healthcare facilities, ensuring the availability of essential medical supplies, and investing in preventive care programs. Expanding access to healthcare services, particularly in rural and underserved areas, will improve the overall health of the workforce, thereby boosting productivity and economic output.

Sustain Defense Expenditure: Although often debated, defense spending has a positive long-term impact on GDP. Policymakers should ensure that defense expenditure is maintained at a level that promotes stability and security, which are essential for economic activities. However, this should be balanced with investments in other critical sectors like education and health to avoid the over-militarization of the economy.

Conclusion

This study investigated the impact of government expenditure on economic growth in selected African countries, focusing on expenditures in education, health, and defense over the period from 1994 to 2023. Utilizing the ARDL model, the findings reveal significant positive relationships between government spending in these key sectors and long-term economic growth.

The empirical results indicate that government expenditure on education is particularly crucial for fostering economic growth. Investments in education enhance human capital, which is fundamental for productivity and innovation. Similarly, healthcare expenditure positively influences economic growth by ensuring a healthy workforce capable of sustaining productivity levels. Defense spending, while often debated, also shows a positive impact, underscoring the importance of maintaining security and stability for economic activities.

The study underscores the importance of efficient allocation of resources, transparency in government spending, and the need for stable and sustained fiscal policies to maximize the benefits of public expenditure. The significant positive impacts observed in the long run suggest that policymakers should prioritize long-term investments in education, health, and defense to drive sustainable economic growth.

In light of these findings, the study recommends several policy measures, including increased investment in education and healthcare, fostering efficient resource allocation, encouraging public-private partnerships, and implementing pro-growth interest rate policies. Addressing structural bottlenecks and regularly reviewing and adjusting policies to meet evolving economic conditions are also essential for ensuring the effectiveness of government expenditure.

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