African Journal of Accounting and Financial Research
ISSN: 2682-6690
Volume 8, Issue 3, 2025 (pp. 149-166)
www.abjournals.org

GOVERNMENT EXPENDITURE ON INFRASTRUCTURE DEVELOPMENT AND ECONOMIC GROWTH IN NIGERIA

Kupoluyi Joshua Oluyemi, Olalekan Akinrinola (Ph.D.), Dele Ojomolade (Ph.D.),

Barine Michael (Prof.), and Areghan Akhamolu Isibor (Ph.D.)

Department of Accounting, Finance and Taxation, Caleb University, Caleb.

Cite this article:

Kupoluyi Joshua Oluyemi, Olalekan Akinrinola, Dele Ojomolade, Barine Michael, Areghan Akhamolu Isibor (2025), Government Expenditure on Infrastructure Development and Economic Growth in Nigeria. African Journal of Accounting and Financial Research 8(3), 149-166. DOI: 10.52589/AJAFR-GTDGFAGX

Manuscript History

Received: 30 May 2025

Accepted: 2 Jul 2025

Published: 25 Aug 2025

ABSTRACT: *The study examined the effect of government expenditures on infrastructure development in economic growth in Nigeria, explores the effect of public spending across key sectors on economic growth, with Gross Domestic Product (GDP) as the dependent variable. The study used four proxies for government sectoral expenditure: expenditure on agriculture (GEA), education (GEE), health (GEH), and transportation (GET). A quantitative research design was employed, covering the period from 1990 to 2023. Data were collected from secondary sources, specifically the Central Bank of Nigeria (CBN) Statistical Bulletin and World Bank Development Indicators. The Autoregressive Distributed Lag (ARDL) technique was used for data analysis due to its suitability for small sample sizes and mixed orders of integration. The regression results show that the p-values for GEA (0.1903), GEE (0.8167), GEH (0.2825), and GET (0.4965) are all statistically insignificant on Gross Domestic Product (GDP) within the period studied. The study concluded that government expenditure in agriculture, education, health, and transportation has not yielded a statistically significant impact on Nigeria's economic growth over the past three decades.*

KEYWORDS: Agriculture, Education, Health, Transportation, Gross domestic product, Nigeria.

Article DOI: 10.52589/AJAFR-GTDGFAGX
DOI URL: https://doi.org/10.52589/AJAFR-GTDGFAGX

African Journal of Accounting and Financial Research
ISSN: 2682-6690
Volume 8, Issue 3, 2025 (pp. 149-166)

www.abjournals.org

INTRODUCTION

Background of Study

Infrastructure development in Nigeria plays a crucial role in fostering economic growth, enhancing productivity, and improving the quality of life. The country, as the most populous in Africa, requires significant infrastructural investments to support its rapidly growing population and urban expansion (Owusu-Manu et al., 2019). Despite Nigeria's vast natural and human resources, infrastructural deficits continue to pose challenges to economic development, with issues such as inadequate transportation networks, erratic power supply, poor healthcare facilities, and insufficient educational institutions persisting (Banerjee et al., 2020). These shortcomings hinder business operations, discourage foreign investment, and affect the overall well-being of citizens. Maciulyte-Sniukiene and Butkus (2022) suggest that well-developed infrastructure significantly contributes to sustainable economic development by enhancing connectivity, increasing efficiency, and reducing production costs.

Government expenditure in Nigeria is primarily categorized into recurrent and capital expenditures, with infrastructure projects falling under capital expenditure (Chandana et al., 2021). However, over the years, Nigeria's budgetary allocations have favored recurrent expenditure, leaving limited resources for capital projects (CBN, 2021). A large portion of government spending is directed toward salaries, pensions, and administrative costs, resulting in inadequate investments in critical infrastructure. This imbalance has slowed infrastructural growth, further exacerbating existing challenges in transportation, energy, water supply, and healthcare systems (Bhattacharya & Bose, 2023). Moreover, delays in budget implementation and fund misappropriation have led to incomplete or abandoned projects, reducing the overall impact of government spending.

Statement of the Problem

Infrastructure development is critical to the economic growth and social well-being of any nation, yet Nigeria continues to face severe infrastructure deficits despite significant government expenditure. Poor road networks, inadequate electricity supply, dilapidated healthcare facilities, and inefficient transportation systems remain prevalent issues across the country (World Bank, 2022). Despite budgetary allocations and increased borrowing to finance infrastructure projects, the impact of government expenditure on infrastructure development remains questionable. The persistent infrastructural gap raises concerns about the efficiency, transparency, and effectiveness of public spending (Foster et al., 2022).

One major problem is the mismatch between government spending and infrastructural outcomes. Over the years, Nigeria's budgetary allocations have favored recurrent expenditures, such as salaries and administrative costs, at the expense of capital expenditures required for infrastructure projects (CBN, 2021). Even when funds are allocated to infrastructure, issues such as project abandonment, cost overruns, and substandard execution have significantly limited impact. Studies suggest that corruption, poor governance, and lack of accountability in the disbursement and utilization of public funds contribute to these inefficiencies (Transparency International, 2022). There is a critical gap in understanding how effectively government expenditure translates into infrastructure development, particularly in key sectors such as transportation, power, and healthcare.

Article DOI: 10.52589/AJAFR-GTDGFAGX
DOI URL: https://doi.org/10.52589/AJAFR-GTDGFAGX

African Journal of Accounting and Financial Research
ISSN: 2682-6690
Volume 8, Issue 3, 2025 (pp. 149-166)

www.abjournals.org

Objectives of the Study

The main objective of this study was to examine the effect of government expenditure in infrastructure development on Nigeria economic growth. This research therefore seeks to:

i. examine the effect of government expenditure in agriculture on economic growth in Nigeria.

ii. examine the effect of government expenditure in education on economic growth in Nigeria.

iii. determine the effect of government expenditure in health on economic growth in Nigeria.

iv. determine the effect of government expenditure in the transportation on economic growth in Nigeria.

Statement of Research Questions

The following questions were formulated to achieve the objectives of the study:

i. what is the effect of government expenditure in agriculture on Nigeria economic growth?

ii. to what extent does government expenditure in education have effect on economic growth in Nigeria?

iii. what is the effect of government expenditure in health on Nigeria economic growth?

iv. to what extent does government expenditure in transportation have effect on economic growth in Nigeria?

Statement of Research Hypotheses

To achieve the objectives, the following hypotheses were formulated:

Ho_1: Government expenditure in agriculture has no significant effect on economic growth in Nigeria.

Ho_2: There is no significant effect between government expenditure in education economic growth in Nigeria.

Ho_3: Government expenditure in health has no significant effect on economic growth in Nigeria.

Ho_4: Government expenditure in transportation has no significant effect on economic growth in Nigeria.

Article DOI: 10.52589/AJAFR-GTDGFAGX
DOI URL: https://doi.org/10.52589/AJAFR-GTDGFAGX

African Journal of Accounting and Financial Research
ISSN: 2682-6690
Volume 8, Issue 3, 2025 (pp. 149-166)

www.abjournals.org

CONCEPTUAL REVIEW

Economic Growth

Economic growth refers to the sustained increase in a country's productive capacity, often measured by the rise in gross domestic product (GDP) over time. It is a fundamental objective of macroeconomic policy and a critical indicator of a nation's economic health and standard of living. Economic growth enhances a country's ability to create jobs, reduce poverty, improve infrastructure, and invest in social services such as healthcare and education (Kim & Ahn, 2020). A growing economy also attracts both domestic and foreign investments, which further stimulate production, income, and consumption levels (Ershov et al., 2021).

Infrastructure Development

Infrastructure development refers to the construction, expansion, and maintenance of essential physical systems and facilities that support economic growth and improve the quality of life in society. These include transportation networks, energy supply, water and sanitation systems, healthcare facilities, and educational institutions (Bhattacharya & Bose, 2023). A well-developed infrastructure is fundamental to national development, as it enhances productivity, facilitates trade, and attracts foreign investments. In developing countries like Nigeria, infrastructure development is often seen as a critical driver of economic transformation, reducing poverty and promoting sustainable growth (Opoku & Yan, 2019).

Government Expenditure

Government expenditure refers to the total amount of money that a government spends on goods, services, and public projects to promote economic growth and ensure social welfare. It is a crucial tool for fiscal policy, influencing macroeconomic stability, employment levels, and income distribution (Chugunov et al., 2021). Governments allocate spending across various sectors, including infrastructure, healthcare, education, defense, and social protection, to enhance national development and improve the standard of living for citizens (Kousar et al., 2023). In Nigeria, government expenditure plays a critical role in driving economic activities, particularly in infrastructure development, poverty reduction, and public service delivery.

Government Expenditure on Health

Government expenditure on health refers to the total public spending allocated to healthcare services, infrastructure, medical research, and health programs aimed at improving public health outcomes. It plays a crucial role in ensuring access to quality healthcare, reducing mortality rates, and promoting overall economic productivity (Owusu et al., 2021). A well-funded healthcare system enhances the quality of life by preventing and controlling diseases, increasing life expectancy, and boosting human capital development (Muhammed & Abubakar, 2022). In Nigeria, government health expenditure is critical to addressing major public health challenges, including maternal and child mortality, infectious diseases, and inadequate healthcare infrastructure.

Article DOI: 10.52589/AJAFR-GTDGFAGX
DOI URL: https://doi.org/10.52589/AJAFR-GTDGFAGX

African Journal of Accounting and Financial Research
ISSN: 2682-6690
Volume 8, Issue 3, 2025 (pp. 149-166)

www.abjournals.org

Government Expenditure on Agriculture

Government expenditure on agriculture refers to public spending on agricultural development, including infrastructure, subsidies, research, and rural development programs. It is a crucial component of economic policy, particularly in agrarian economies like Nigeria, where agriculture contributes significantly to employment and food security (FAO, 2021). Public investment in agriculture enhances productivity, reduces poverty, and ensures food sufficiency by supporting farmers with improved seeds, fertilizers, irrigation, and mechanized farming tools (Adepoju et al., 2022).

Government Expenditure on Education

Government expenditure on education refers to public spending on educational institutions, infrastructure, teacher salaries, and student support programs aimed at enhancing learning outcomes and human capital development. Education is widely recognized as a crucial driver of economic growth and social development, as it equips individuals with the skills and knowledge necessary to contribute effectively to the economy (Chaves-Avila & Gallego-Bono, 2020). In Nigeria, government spending on education has been inconsistent, often falling below the UNESCO-recommended benchmark of at least 15–20% of the national budget (World Bank, 2022). Insufficient investment in the sector has led to inadequate infrastructure, poor teacher remuneration, and limited access to quality education, especially in rural areas (Yu et al., 2024).

Government Expenditure on Transportation

Government expenditure on transportation is central to Nigeria's infrastructural development strategy, aiming to enhance economic connectivity, trade, and mobility. In recent years, the Nigerian government has increased investment in road, rail, and urban transit systems to boost national productivity and reduce logistical bottlenecks.

In the 2025 federal budget, the government allocated ₦256.8 billion to the transportation sector, a significant rise from ₦93.66 billion in 2023 (Adeleke, 2025). Of this, ₦41.49 billion was dedicated to railway infrastructure projects such as the Abuja-Kaduna, Lagos-Ibadan, and Itakpe-Ajaokuta rail lines. These rail systems are part of Nigeria's long-term plan to diversify transportation modes and reduce reliance on road networks (Adeleke, 2025).

THEORETICAL REVIEW

Endogenous Growth Theory

Endogenous growth theory was developed in the 1980s by economists Paul Romer (1986, 1990) and Robert Lucas (1988) as an extension of the Solow-Swan growth model. Unlike neoclassical growth theories, which attribute economic growth to external technological advancements, endogenous growth theory argues that growth is primarily driven by internal factors within the economy, such as investment in human capital, innovation, and knowledge spillovers (Ehrlich & Pei, 2020). The theory suggests that government policies, research and development (R&D), infrastructure investment, and education play critical roles in enhancing productivity and driving long-term economic growth (Wang & Zhang, 2020). It emphasizes

Article DOI: 10.52589/AJAFR-GTDGFAGX
DOI URL: https://doi.org/10.52589/AJAFR-GTDGFAGX

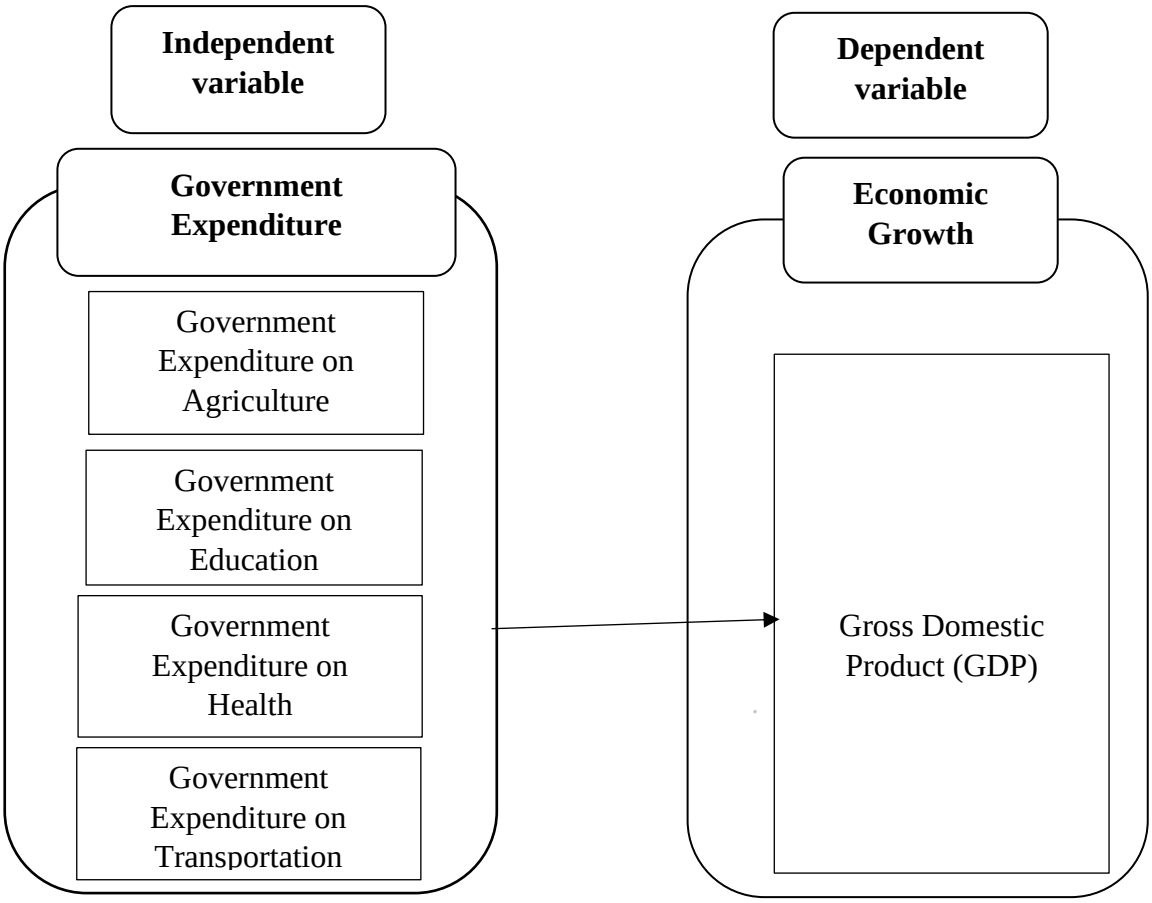
that technological progress and knowledge accumulation are not exogenous (external) but are the result of economic incentives and policies (Song et al., 2019).

Peacock-Wiseman Hypothesis

The Peacock-Wiseman Hypothesis was introduced by Alan Peacock and Jack Wiseman in 1961 as an explanation for the long-term growth of government expenditure. The theory is based on their empirical study of public spending patterns in the United Kingdom, where they observed that government expenditure does not increase smoothly over time but rather experiences significant jumps during periods of economic or social crises. These crises, such as wars, recessions, or natural disasters, create pressure on the government to increase spending, leading to a new and higher level of public expenditure that does not revert to its previous state once the crisis is over. This phenomenon is often referred to as the "displacement effect," where temporary increases in government spending become permanent due to societal acceptance of a higher level of government intervention (Dasgupta et al., 2022).

A key assumption of the Peacock-Wiseman Hypothesis is that governments are constrained by taxation limits set by public resistance to higher taxes.

Conceptual Model



Source: Researcher's Compilation (2025)

Article DOI: 10.52589/AJAFR-GTDGFAGX
DOI URL: https://doi.org/10.52589/AJAFR-GTDGFAGX

Empirical Review

Chijioke and Amadi (2020) examined the impact of public expenditure on infrastructure development in Nigeria. Using a time series analysis covering 1990 to 2022, they employed regression techniques to analyse the effect of government spending on roads, energy, and water supply. Their findings indicated a positive and significant relationship, suggesting that increased government investment in infrastructure leads to economic growth and improved living standards. However, they identified challenges such as corruption, inefficiencies in fund allocation, and poor maintenance culture as major obstacles to achieving long-term benefits from infrastructure investments.

Osakede (2021) investigated government expenditure on health and its effect on Nigeria's healthcare infrastructure. They applied a panel data regression model on health sector funding from 2000 to 2019 across different states. The study revealed that increased spending on health facilities significantly reduced mortality rates and improved healthcare accessibility. However, inefficiencies in fund allocation, mismanagement, and delays in project implementation limited the full impact of government allocations.

Oseni et al. (2020) analyzed the role of government spending on social community services in Sub-Saharan Africa, focusing on Nigeria, Ghana, and South Africa. They used a comparative case study approach and secondary data from government financial reports from 1995 to 2020. Their results demonstrated that increased public spending on social services such as housing, sanitation, and welfare significantly improved the quality of life. However, the study highlighted disparities in fund distribution, with urban centers benefiting more than rural areas. They recommended inclusive policies to ensure equitable access to social services across different population groups.

Gaps in Literature

Despite extensive research on the relationship between government expenditure and infrastructure development in Nigeria, significant gaps remain in the literature. One major gap is the inconsistency in empirical findings regarding the effectiveness of government spending in driving infrastructure growth. While some studies suggest a positive relationship between government expenditure and infrastructural development (Ajayi & Anifowose, 2023), others argue that corruption, misallocation of funds, and bureaucratic inefficiencies weaken the impact of such expenditures (World Bank, 2022).

Another gap lies in the lack of disaggregated analysis of government spending across different sectors of infrastructure. Most studies tend to generalize government expenditure without examining its impact on specific areas such as transportation, energy, water supply, and communication networks (NBS, 2023). This limitation makes it difficult to identify which sectors require urgent intervention and efficient allocation of resources.

Article DOI: 10.52589/AJAFR-GTDGFAGX
DOI URL: https://doi.org/10.52589/AJAFR-GTDGFAGX

African Journal of Accounting and Financial Research
ISSN: 2682-6690
Volume 8, Issue 3, 2025 (pp. 149-166)

www.abjournals.org

METHODOLOGY

Research Design

This study adopted ex-post facto research design, which is used to refer to studies which investigate possible cause-and-effect relationships by observing an existing condition or situation and searching in time for plausible causal factors.

Population of the Study

The focus of this study is Nigeria; hence the population of the study is derived from the parameters of the dependent and independent variables. This comprises of the variables of government expenditure on infrastructure development and economic growth in Nigeria. Gross domestic product is the component of economic growth; government expenditure on agriculture, government expenditure on education, government expenditure on health and government expenditure on transportation are components of government expenditure on infrastructure development for a period of 30 years (1993-2023).

Sources of Data

The suitable data needed for this study was obtained from secondary data. The secondary data were adjudged suitable and exhaustive for this study as all the government expenditure and infrastructure development variables could be appropriately measured using figures published by the Central Bank of Nigeria (CBN) Statistical bulletin and Nigeria Bureau of Statistics fact sheets.

Data Collection Instrument

The secondary data used for this study were sourced from accounts of the Central Bank of Nigeria (CBN) statistical bulletin and Nigeria Bureau of Statistics fact sheets for the time frame of thirty (30) years ranging from 1993 to 2023 chosen for this study.

Validity and Reliability of Data

The set of data for the study was valid and reliable because they are government published data.

Method of Data Analysis

The data set was analyzed using descriptive and inferential statistics and apply Autoregressive Distributed Lag (ARDL) a dynamic Ordinary Least Squares (OLS).

Model Description

The econometric model by Nzechukwu and Onodi (2024) was adopted for this study with some modifications to bridge the gap in the model and make this study more elaborate. However, based on the foregoing, data such as government expenditure on agriculture, government expenditure on education, government expenditure on health (explanatory variable); Economic services and social community services (dependent variable) were considered for this study. The model specification of this study is given as:

Article DOI: 10.52589/AJAFR-GTDGFAGX
DOI URL: https://doi.org/10.52589/AJAFR-GTDGFAGX

African Journal of Accounting and Financial Research
ISSN: 2682-6690
Volume 8, Issue 3, 2025 (pp. 149-166)
www.abjournals.org

Regression Model

$GDP_{it} = \beta_0 + \beta_1 GEA_{it} + \beta_2 GEE_{it} + \beta_3 GEH_{it} + + \beta_3 GEt_{it} \varepsilon_{it}$ .....Model 1

Where:

GDP = Gross Domestic Product, GEA = Government Expenditure on Agriculture

GEE = Government Expenditure on Education, GEH = Government Expenditure on Health

GET = Government Expenditure on Transportation, β = Constant

β_{1-3} = Coefficients, ε = error term, $_{t=}$ Time

PRESENTATION AND DISCUSSION OF RESULTS

Table 4.1: Descriptive Statistics

	GDP	GEA	GEE	GEH	GET
Mean	4.496692	1.289389	2.120667	1.834971	1.167102
Median	4.619833	1.517058	2.196563	1.973702	1.360556
Maximum	5.318476	1.993613	3.087639	3.083298	1.954377
Minimum	3.247677	0.073091	0.868218	0.320973	-0.351156
Std. Dev.	0.620322	0.573975	0.629218	0.757434	0.582299
Skewness	-0.416799	-0.791950	-0.479880	-0.529426	-1.044141
Kurtosis	1.875725	2.419155	2.237322	2.321394	3.157643
Jarque-Bera	2.448600	3.557648	1.878521	1.977091	5.482215
Probability	0.293963	0.168837	0.390917	0.372118	0.064499
Sum	134.9007	38.68168	63.62001	55.04914	35.01305
Sum Sq. Dev.	11.15917	9.553957	11.48155	16.63748	9.833105
Observations	30	30	30	30	30

Source: *Output from E-views 9*

Interpretation

The descriptive statistics presented for Gross Domestic Product (GDP) and government expenditure on agriculture (GEA), education (GEE), health (GEH), and transportation (GET) provide insights into their central tendencies, dispersions, and distributions over a 30-year observation period.

The mean GDP is 4.50, indicating a moderately growing economy, while the mean expenditures across sectors show that education (2.12) receives the highest average funding, followed by health (1.83), agriculture (1.29), and transportation (1.17). The median values are slightly higher than the means for most variables, suggesting mild left-skewness, particularly for GDP, GEA, GEE, and GEH. Transportation (GET), however, is significantly negatively skewed (Skewness = -1.04), indicating that most values are concentrated above the mean, with a few extremely low values pulling the average down. This skewness is further supported by the minimum GET value of -0.35, which may represent a year of negative growth or disinvestment in the transport sector.

Article DOI: 10.52589/AJAFR-GTDGFAGX
DOI URL: https://doi.org/10.52589/AJAFR-GTDGFAGX

African Journal of Accounting and Financial Research
ISSN: 2682-6690
Volume 8, Issue 3, 2025 (pp. 149-166)

www.abjournals.org

The standard deviations reflect the variability in expenditure, with GEH showing the highest volatility (Std. Dev = 0.76), possibly due to fluctuating health priorities or emergency health spending. GEE and GET also exhibit notable variation (0.63 and 0.58 respectively), while GEA is comparatively more stable. The kurtosis values for all variables fall close to 3, with GET showing a slightly leptokurtic distribution (3.16), implying a sharper peak and heavier tails than the normal distribution.

The Jarque-Bera test results suggest that none of the variables significantly deviate from normality at the 5% level (all p-values > 0.05), although GET is borderline (p = 0.064), warranting cautious interpretation.

Augmented Dickey-Fuller (ADF) Unit Root Results

The Augmented Dickey-Fuller (ADF) unit root test assesses stationarity in time series data. A significant test statistic (p-value < 0.05) indicates stationarity, while non-significance suggests the presence of a unit root.

	ADF		**Philip Peron test (PP)**		Order of Integration (ADF)	Order of Integration (PP)
Variables	Test Statistic	P-value	Test Statistic	P-value		
GDP	-4.692926	0.0008	-3.217555	0.0291	I(1)	I(1)
GEA	-6.635242	0.0000	-7.436661	0.0000	I(1)	I(1)
GEE	-4.273356	0.0023	-4.184132	0.0029	I(1)	I(1)
GEH	-4.482240	0.0014	-4.406863	0.0016	I(1)	I(1)
GET	-4.995156	0.0004	-4.983029	0.0004	I(1)	I(1)

Source: *Researcher's Compilation (2025)*

The Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root test results show that all variable such as Gross Domestic Product (GDP), Government Expenditure on Agriculture (GEA), Education (GEE), Health (GEH), and Transportation (GET) are integrated of order one, I(1). This means that each variable was non-stationary at the level but became stationary after first differencing. The ADF test statistics for all variables are significantly negative (e.g., -4.69 for GDP and -6.63 for GEA), with corresponding p-values less than 0.05, indicating rejection of the null hypothesis of a unit root. Similarly, the PP test also confirms stationarity at first difference, as evidenced by statistically significant test statistics and p-values below the 5% threshold (e.g., -4.98 for GET with p = 0.0004). These results imply that long-run equilibrium relationships can be tested using cointegration techniques since the variables exhibit similar integration orders, which is essential for meaningful time-series regression analysis.

Article DOI: 10.52589/AJAFR-GTDGFAGX
DOI URL: https://doi.org/10.52589/AJAFR-GTDGFAGX

African Journal of Accounting and Financial Research
ISSN: 2682-6690
Volume 8, Issue 3, 2025 (pp. 149-166)

ARDL Bounds Test

Test Statistic	Value	K
F-Statistics	26.31545	3
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.37	3.20
5%	2.79	3.67

Long run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.558498	0.157543	3.545059	0.0017
GDP(-1)	-0.149810	0.055079	-2.719922	0.0122
GEA	-0.049765	0.036878	-1.349453	0.1903
GEE	0.028042	0.119599	0.234470	0.8167
GEH	0.111995	0.101760	1.100575	0.2825
GET	-0.019245	0.027849	-0.691027	0.4965

EC = GDP - (-0.3322*GEA + 0.1872*GEE + 0.7476*GEH -0.1285*GET + 3.7281)

Source: *Researcher's Compilation (2025)*

The ARDL bounds test result shows an F-statistic value of 26.31545, which exceeds the upper critical bound (I1) at all significance levels (10%, 5%). This indicates strong evidence of a long-run relationship among the variables. Since the F-statistic is greater than the upper bound, the null hypothesis of no cointegration is rejected, confirming that the variables are cointegrated in the long run.

The long-run estimates of the ARDL model provide valuable insights into the relationship between government expenditure components and gross domestic product (GDP). The constant term (0.558498, p = 0.0017) is positive and statistically significant, indicating a stable baseline GDP level when all explanatory variables are held constant. The lagged GDP term (-0.149810, p = 0.0122) is negative and significant, which implies that any deviation from long-run equilibrium is gradually corrected over time, confirming the model's error-correction capacity.

Government expenditure on agriculture (GEA) has a negative coefficient (-0.049765) and is statistically insignificant (p = 0.1903), suggesting that long-run agricultural spending has not contributed meaningfully to GDP within the period studied. This may reflect issues such as poor implementation or weak returns on agricultural investments. Expenditure on education

Article DOI: 10.52589/AJAFR-GTDGFAGX
DOI URL: https://doi.org/10.52589/AJAFR-GTDGFAGX

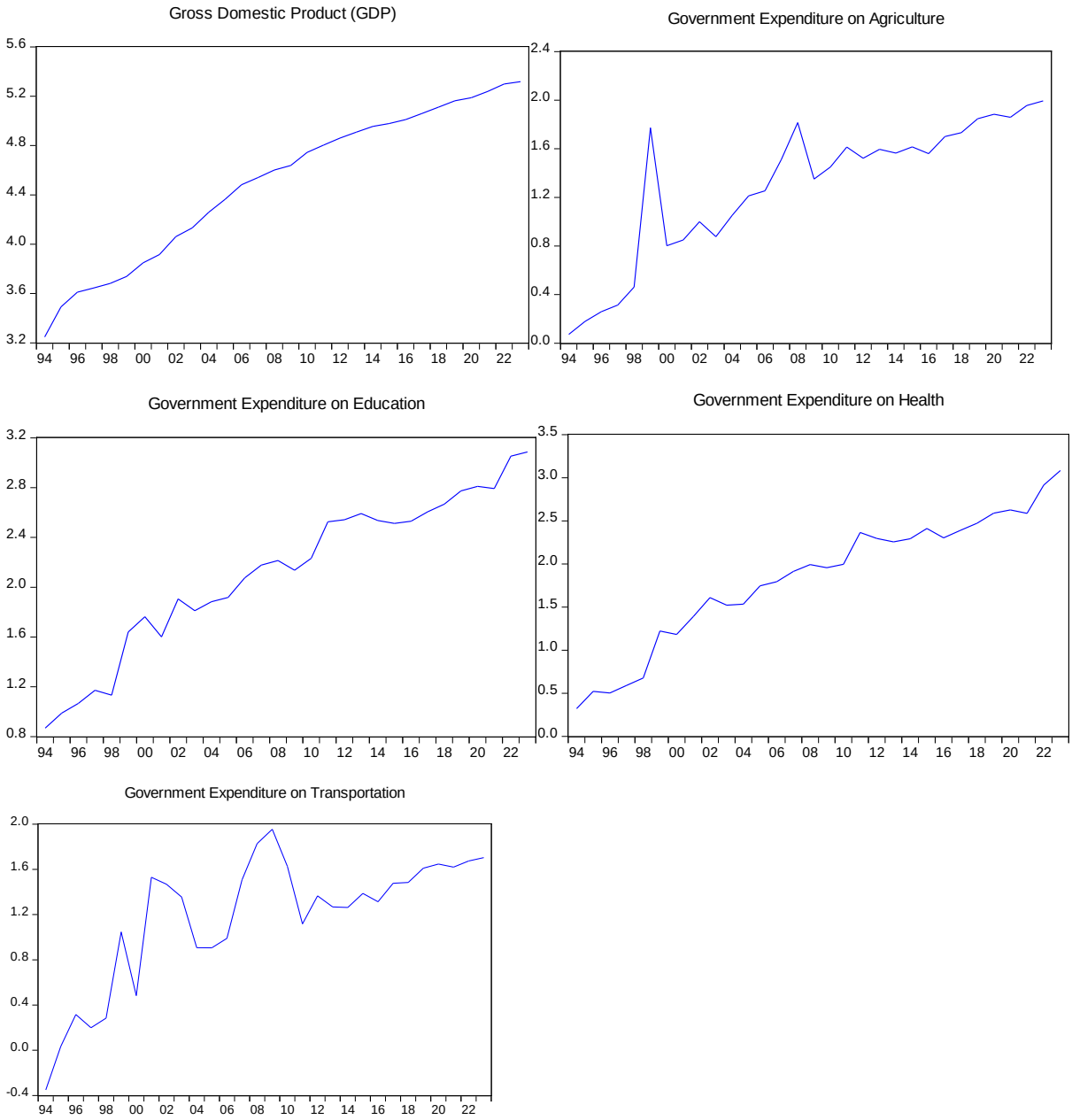
African Journal of Accounting and Financial Research
ISSN: 2682-6690
Volume 8, Issue 3, 2025 (pp. 149-166)
www.abjournals.org

(GEE) and health (GEH) are both positive (0.028042 and 0.111995, respectively), but neither is statistically significant (p = 0.8167 and 0.2825), implying that their long-term influence on GDP, though theoretically positive, lacks empirical strength in this model. Similarly, transportation spending (GET) has a negative but insignificant impact on GDP (coefficient = -0.019245, p = 0.4965).

The derived error correction equation which is provided as EC = GDP - (-0.3322GEA + 0.1872GEE + 0.7476GEH - 0.1285GET + 3.7281), outlines the long-run equilibrium condition. Deviations from this equilibrium prompt short-run adjustments.

Trend Analysis

Figure 1: Trend Analysis



Source: *Extract from E-views*

Article DOI: 10.52589/AJAFR-GTDGFAGX
DOI URL: https://doi.org/10.52589/AJAFR-GTDGFAGX

African Journal of Accounting and Financial Research
ISSN: 2682-6690
Volume 8, Issue 3, 2025 (pp. 149-166)

www.abjournals.org

Figure 1: The data presented from 1990 to 2023 highlights significant growth in government expenditure on key sectors such as education, health, agriculture, and transportation alongside Nigeria's rising Gross Domestic Product (GDP). This trend reflects Nigeria's fiscal response to development needs over three decades, with notable shifts in allocation and output performance.

In the early 1990s, government expenditure across all four sectors remained minimal. For instance, in 1990, only ₦2.40 billion was allocated to education, ₦0.50 billion to health, ₦0.26 billion to agriculture, and ₦0.29 billion to transportation, with the GDP at ₦494.6 billion. These low figures signify underinvestment in human capital and infrastructure during a period when Nigeria was transitioning from military to democratic governance. By 1999, education expenditure surged to ₦43.61 billion and health to ₦16.64 billion, indicating increasing attention to public services. However, agriculture peaked unusually at ₦59.32 billion, likely influenced by rural development initiatives under the democratic regime's early years.

The 2000s saw a steady increase across all sectors. By 2010, education spending reached ₦170.80 billion, while health rose to ₦99.10 billion, and GDP had climbed to ₦55,469.4 billion. Agricultural expenditure, however, fluctuated due to inconsistent policies and climatic challenges, though it showed an upward movement overall. Transport funding rose notably in 2001 (₦33.93 billion), then oscillated, reflecting episodic infrastructure projects rather than sustained investment.

A remarkable transformation occurred from 2015 onwards. Education funding rose from ₦325.19 billion in 2015 to ₦1,223.60 billion in 2023. Health also experienced exponential growth, from ₦257.70 billion in 2015 to ₦1,211.43 billion in 2023. Similarly, the agricultural and transport sectors recorded increases, though not as sharply. These rising figures coincided with GDP growth, which surged from ₦95,177.7 billion in 2015 to ₦208,197.53 billion in 2023, suggesting a possible correlation between sectoral investment and economic performance.

Analyses of Research Hypotheses

The Autoregressive Distributed Lag (ARDL) model is used in this study to examine the long-run and short-run relationships between economic growth indicators (GDP) and government expenditure on infrastructure variables such as government expenditure on education, government expenditure on agriculture, government expenditure on health and government expenditure on transportation in Nigeria. ARDL efficiently handles mixed-order integration variables.

Dependent Variable: GDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP(-1)	0.850190	0.055079	15.43593	0.0000
GEA	-0.049765	0.036878	-1.349453	0.1903
GEE	0.028042	0.119599	0.234470	0.8167
GEH	0.111995	0.101760	1.100575	0.2825

Article DOI: 10.52589/AJAFR-GTDGFAGX
DOI URL: https://doi.org/10.52589/AJAFR-GTDGFAGX

GET	-0.019245	0.027849	-0.691027	0.4965
C	0.558498	0.157543	3.545059	0.0017

R-squared	0.996662	Mean dependent var	4.539761
Adjusted R-squared	0.995936	S.D. dependent var	0.583870
S.E. of regression	0.037221	Akaike info criterion	-3.561916
Sum squared resid	0.031864	Schwarz criterion	-3.279027
Log likelihood	57.64778	Hannan-Quinn criter.	-3.473319
F-statistic	1373.414	Durbin-Watson stat	1.404007
Prob(F-statistic)	0.000000		

***Source**: Extracted from E-views, Version 9 (2025)*

The regression results analyze the impact of government expenditure on agriculture (GEA), education (GEE), health (GEH), and transportation (GET) on Nigeria's Gross Domestic Product (GDP), incorporating a lagged GDP variable to account for temporal dependency.

The coefficient for GDP(-1) is 0.850190 with a t-statistic of 15.43593 and a p-value of 0.0000, indicating a strong, statistically significant positive relationship between past and current GDP. This highlights GDP inertia where prior economic performance greatly influences current output levels. It supports the notion that GDP follows a path-dependent trend where investments, economic momentum, and policy continuity significantly contribute to future growth.

Government expenditure on agriculture (GEA) has a coefficient of -0.049765, with a t-statistic of -1.349453 and a p-value of 0.1903, suggesting a negative but statistically insignificant impact on GDP. This result may stem from structural inefficiencies in Nigeria's agricultural sector, such as poor mechanization, underfunding, or misaligned priorities, which dampen the effectiveness of government investments in fostering GDP growth.

The coefficient for government expenditure on education (GEE) is 0.028042, with a t-statistic of 0.234470 and a p-value of 0.8167, indicating a positive but very weak and statistically insignificant relationship with GDP. Although education contributes to human capital development and long-term productivity, the short-run impact within the study period appears negligible, possibly due to poor funding quality, delays in educational returns, or mismanagement.

For health expenditure (GEH), the coefficient is 0.111995, the t-statistic is 1.100575, and the p-value is 0.2825, showing a positive but statistically insignificant association with GDP. This reflects that while health investments can enhance labor productivity and life expectancy, the benefits may not manifest immediately or may be hindered by inefficiencies in healthcare delivery.

Government expenditure on transportation (GET) has a negative coefficient of -0.019245, with a t-statistic of -0.691027 and p-value of 0.4965. Though contrary to expectations, this may result from delays in project completion, cost overruns, or the misallocation of funds, rendering transportation investments ineffective in stimulating short-term economic output.

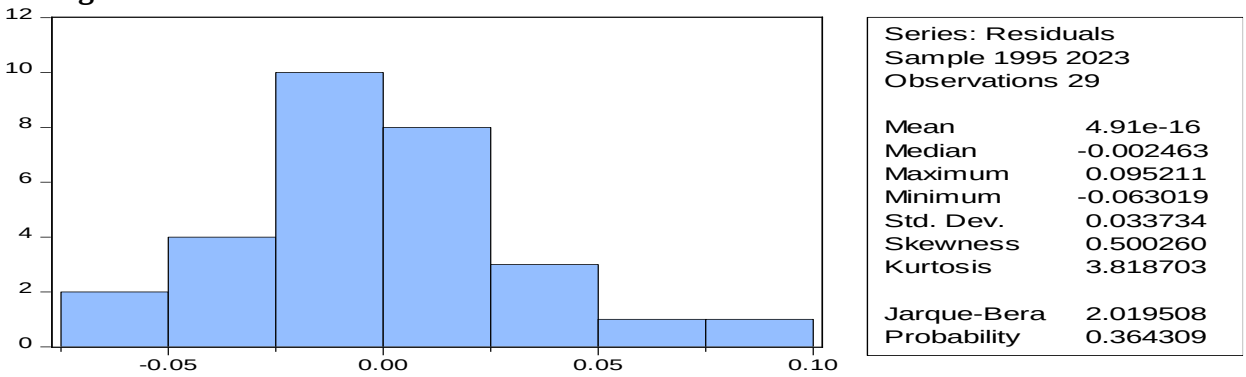
Article DOI: 10.52589/AJAFR-GTDGFAGX
DOI URL: https://doi.org/10.52589/AJAFR-GTDGFAGX

African Journal of Accounting and Financial Research
ISSN: 2682-6690
Volume 8, Issue 3, 2025 (pp. 149-166)
www.abjournals.org

The constant term (C) is 0.558498, statistically significant with a t-statistic of 3.545059 and p-value of 0.0017, implying the presence of other influential factors affecting GDP beyond the variables included in the model.

Model diagnostics show a high R-squared of 0.996662 and Adjusted R-squared of 0.995936, indicating the model explains over 99% of the variability in GDP. The F-statistic of 1373.414 with a probability of 0.000000 confirms the overall significance of the model. However, the Durbin-Watson statistic of 1.404007 suggests potential positive autocorrelation, which may warrant further econometric adjustments.

Histogram



The residuals appear normally distributed, as shown by the bell-shaped histogram and supported by the Jarque-Bera statistic of 2.019508 with a p-value of 0.364309, which is above the 0.05 significance level. This indicates that the residuals do not significantly deviate from normality. Additionally, the skewness (0.500260) and kurtosis (3.818703) fall within acceptable ranges, confirming the model's residuals are well-behaved.

DISCUSSION OF FINDINGS

The discussion of findings shows the effect of government expenditure on infrastructure development in Nigeria economic growth.

Government Expenditure in Agriculture and Gross Domestic Product of Nigeria

The findings reveal that government expenditure on agriculture has a negative and statistically insignificant effect on GDP, suggesting that agricultural spending did not contribute meaningfully to economic growth during the study period.

Government Expenditure in Education Sector and Gross Domestic Product

The findings suggest that government expenditure on education has a positive but statistically insignificant effect on economic growth. This implies that although education spending may support GDP growth, its impact was not strong enough to be statistically validated during the study period.

Article DOI: 10.52589/AJAFR-GTDGFAGX
DOI URL: https://doi.org/10.52589/AJAFR-GTDGFAGX

African Journal of Accounting and Financial Research
ISSN: 2682-6690
Volume 8, Issue 3, 2025 (pp. 149-166)

www.abjournals.org

Government Expenditure in Health sector and Gross Domestic Product

The findings reveal a positive but statistically insignificant relationship between government expenditure on health and GDP. This indicates that while increased health spending may contribute to economic growth, the impact is not strong enough to be deemed statistically meaningful within the study period.

Government Expenditure in Transportation Sector and Gross Domestic Product

The findings indicate a negative and statistically insignificant relationship between government expenditure on transportation and GDP. This suggests that increases in transport spending during the study period did not translate into significant economic growth.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The purpose of this study was to investigate the effect of government expenditure on infrastructure and economic growth in Nigeria. The study made use of data for thirty years from 1993 to 2023. Three specific objectives were set out to be achieved, leading to four answered research questions and four hypotheses tested using regression analysis and discussed. The results of the study's findings made the researcher to reach conclusions that:

In the hypothesis one, the coefficient for government expenditure on agriculture (β_1 = -0.049765) is negative and statistically insignificant (t = -1.349453, p = 0.1903). This implies that, within the period studied, spending on agriculture has an insignificant impact on GDP. Several factors may explain this: inefficiencies in fund allocation, corruption, poor implementation, or delays in agricultural returns.

In the hypothesis two, it was revealed that the coefficient for government expenditure on education (β_1 = 0.028042) is positive but statistically insignificant (t = 0.234470, p = 0.8167). This implies that while educational spending may contribute positively to economic growth, the effect is not strong enough within the period under study to be considered statistically meaningful. The delayed and indirect nature of returns from educational investment such as human capital development could explain this insignificance. It often takes time before educational reforms or expenditures translate into a more skilled workforce and increased productivity.

In the hypothesis three, it was revealed that Government expenditure on health has a positive coefficient of 0.111995, meaning that increased spending on health is associated with a rise in GDP. However, the effect is not statistically significant, as the t-value is 1.100575 and the p-value is 0.2825. This suggests that although there is a positive link between health spending and GDP, the effect is not strong enough in the short term to be considered statistically meaningful. The model performs well overall.

In the hypothesis four, it was revealed that the key independent variable, government expenditure on transportation (GET), has a negative coefficient of -0.019245. This implies that an increase in transportation spending is associated with a slight decline in GDP. However, the effect is statistically insignificant, as shown by a very low t-value of -0.691027 and a high p-

Article DOI: 10.52589/AJAFR-GTDGFAGX
DOI URL: https://doi.org/10.52589/AJAFR-GTDGFAGX

value of 0.4965. This suggests that, at least in the short run, transportation expenditure does not have a measurable impact on economic growth. The lack of immediate returns could be due to time lags in infrastructure project completion or inefficiencies in fund utilization. Despite this, the overall model fit is excellent.

RECOMMENDATIONS

i. The government should prioritize efficient allocation and monitoring of agricultural spending.

ii. Education and health sectors require targeted reforms. Although both exhibited positive but insignificant effects on GDP, this suggests inefficiencies in fund utilization. It is recommended that the government invest more in teacher training, curriculum modernization, and school infrastructure, as well as improve healthcare access, equipment, and personnel motivation. Doing so may enhance human capital development and, consequently, economic productivity.

iii. The study found that transportation spending had a negative and insignificant effect on GDP. This calls for a strategic overhaul of the transportation investment framework. Government must ensure transparency in contract execution, eliminate corruption, and focus on completing key infrastructure projects that have multiplier effects on trade, logistics, and job creation.

REFERENCES

Adeleke, T. (2025). *Overview of Nigeria's 2025 Federal Budget and Infrastructure Allocation*.

Adepoju, O., Esan, O., & Akinyomi, O. (2022). Food security in Nigeria: enhancing workers' productivity in precision agriculture. *Journal of Digital Food, Energy & Water*

Banerjee, A., Duflo, E., & Qian, N. (2020). On the road: Access to transportation infrastructure and economic growth in China. *Journal of Development Economics*, *145*, 102442.

Bhattacharya, R., & Bose, D. (2023). Energy and water: COVID-19 impacts and implications for interconnected sustainable development goals. *Environmental Progress & Sustainable Energy*, *42*(1), e14018.

CBN (2021). *Annual Statistical Bulletin*. Central Bank of Nigeria.

Chandana, A., Adamu, J., & Musa, A. (2024). Impact of government expenditure on economic growth in Nigeria, 1970-2019. *CBN Journal of Applied Statistics (JAS)*, *11*(2), 6.

Chaves-Avila, R., & Gallego-Bono, J. R. (2020). Transformative policies for the social and solidarity economy: The new generation of public policies fostering the social economy in order to achieve sustainable development goals. The European and Spanish cases. *Sustainability*, *12*(10), 4059.

Chijioke, A. K., & Amadi, A. I. (2019). Human capital investment as a catalyst for sustainable economic development in Nigeria. *International Journal of Management Science and Business Administration*, *5*(5), 13-22.

Chugunov, I., Pasichnyi, M., Koroviy, V., Kaneva, T., & Nikitishin, A. (2021). Fiscal and monetary policy of economic development. *European Journal of Sustainable Development*, *10*(1), 42-42.

Article DOI: 10.52589/AJAFR-GTDGFAGX
DOI URL: https://doi.org/10.52589/AJAFR-GTDGFAGX

Dasgupta, S., Wheeler, D., Bandyopadhyay, S., Ghosh, S., & Roy, U. (2022). Coastal dilemma: climate change, public assistance and population displacement. *World Development*, *150*, 105707.

Ehrlich, I., & Pei, Y. (2020). Human capital as engine of growth: The role of knowledge transfers in promoting balanced growth within and across countries. *Asian Development Review*, *37*(2), 225-263.

Ershov, M. V., Tanasova, A. S., & Sokolova, E. Y. (2021). Stimulating domestic demand as a key factor of economic growth. *Ekonomika Regiona= Economy of Regions*, (1), 114.

Foster, V., Rana, A., & Gorgulu, N. (2022). Understanding Public Spending Trends for Infrastructure in Developing Countries. *Policy Research Working Paper*, *9903*.

Kim, S. W., & Ahn, S. H. (2020). Social investment effects of public education, health care, and welfare service expenditures on economic growth. *Asian Social Work and Policy Review*, *14*(1), 34-44.

Kousar, S., Ahmed, F., Afzal, M., & Segovia, J. E. (2023). Is government spending in the education and health sector necessary for human capital development?. *Humanities and Social Sciences Communications*, *10*(1), 1-11.

Kousar, S., Ahmed, F., Afzal, M., & Segovia, J. E. (2023). Is government spending in the education and health sector necessary for human capital development?. *Humanities and Social Sciences Communications*, *10*(1), 1-11.

Maciulyte-Sniukiene, A., & Butkus, M. (2022). Does infrastructure development contribute to EU countries' economic growth?. *Sustainability*, *14*(9), 5610.

Muhammed, Z., & Abubakar, I. R. (2022). Improving the quality of life of urban communities in developing countries. In *Responsible Consumption and Production* (pp. 357-370). Cham: Springer International Publishing.

Opoku, E. E. O., & Yan, I. K. M. (2019). Industrialization as driver of sustainable economic growth in Africa. *The Journal of International Trade & Economic Development*, *28*(1), 30-56.

Osakede, U. A. (2021). Public health spending and health outcome in Nigeria: the role of governance. *International Journal of Development Issues*, *20*(1), 95-112.

Oseni, I. O., Akinbode, S. O., Babalola, D. A., & Adegboyega, S. B. (2020). Government spending and school enrolment in sub-Saharan Africa: A system GMM approach. *Journal of Economics and Management*, *40*(2), 91-108.

Owusu, P. A., Sarkodie, S. A., & Pedersen, P. A. (2021). Relationship between mortality and health care expenditure: Sustainable assessment of health care system. *Plos one*, *16*(2), e0247413.

Owusu-Manu, D. G., Jehuri, A. B., Edwards, D. J., Boateng, F., & Asumadu, G. (2019). The impact of infrastructure development on economic growth in sub-Saharan Africa with special focus on Ghana. *Journal of Financial Management of Property and Construction*, *24*(3), 253-273.

Song, M., Wang, J., Wang, S., & Zhao, D. (2019). Knowledge accumulation, development potential and efficiency evaluation: an example using the Hainan free trade zone. *Journal of Knowledge Management*, *23*(9), 1673-1690.

Vîrjan, D., Manole, A. M., Stanef-Puică, M. R., Chenic, A. S., Papuc, C. M., Huru, D., & Bănacu, C. S. (2023). Competitiveness—the engine that boosts economic growth and revives the economy. *Frontiers in Environmental Science*, *11*, 1130173.

Wang, Q., & Zhang, F. (2020). Does increasing investment in research and development promote economic growth decoupling from carbon emission growth? An empirical analysis of BRICS countries. *Journal of Cleaner Production*, *252*, 119853.

World Bank (2022). *Nigeria: Closing the infrastructure gap*. World Bank Report.

Yu, Y., Appiah, D., Zulu, B., & Adu-Poku, K. A. (2024). Integrating rural development, education, and management: Challenges and strategies. *Sustainability*, *16*(15).

Article DOI: 10.52589/AJAFR-GTDGFAGX
DOI URL: https://doi.org/10.52589/AJAFR-GTDGFAGX