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REVIEW ARTICLE

THE IMPACT OF HUMAN CAPITAL DEVELOPMENT ON ECONOMIC GROWTH IN NIGERIA

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ABSTRACT

Despite Nigeria's abundant resources, human capital development has remained more of a goal than a reality. The nation's developmental challenges are likely to persist, and the role of human capital in driving economic growth has not been thoroughly examined. This study aimed to empirically investigate the impact of human capital development on economic growth in Nigeria. Secondary data from 1990 to 2022 were utilized, and an ex-post facto research design was employed. The Fully Modified Ordinary Least Squares (FMOLS) approach and the bound test were applied to assess both the long- and short-term effects of human capital development on economic growth. The results indicated that government spending on education had a positive impact on economic growth, while spending on the health sector also had a positive and significant effect. Additionally, per capita income was found to have a positive and significant impact on economic growth. Based on these findings, the study recommends that government spending on education and health be enhanced and used efficiently to boost real GDP. Addressing corruption and infrastructure gaps is vital, as is improving healthcare infrastructure to reduce disease burdens. Furthermore, the Labor and Employment ministries should focus on increasing per capita income, creating jobs, and fostering skill development and entrepreneurship.

KEYWORDS

Human capital, Development, Health, Education, Per capita Income

1. INTRODUCTION

Human capital is increasingly recognized as a critical driver of economic growth and development, especially in both developed and developing nations. As societies strive to improve living standards and foster sustainable growth, the role of human capital comprising the education, health, skills, and abilities of the population becomes central. Investing in human capital enhances productivity, innovation, and competitiveness, which are essential for national progress. This study aims to investigate the impact of human capital development on economic growth in Nigeria, with a specific focus on the contributions of education and health.

1.1 Background to the Study

Human capital, which includes the education, health, skills, and competencies of individuals, is a fundamental driver of economic development and growth. They assert that human beings are the most valuable assets in any country, and effective management of this resource is essential for achieving national development goals (Hadir and Lahrech, 2015). Investment in human capital enhances productivity and economic value, making it a key priority for both developed and developing nations. According to the study, education and health are vital components of human capital, and their development contributes significantly to improving individual capabilities and national output (Todaro and Smith, 2013).

In many developing countries, the level of human capital development remains low due to inadequate investment in critical sectors like education and healthcare. These deficiencies lead to a host of socio-economic challenges, including poverty, unemployment, gender inequality, and poor living conditions (Todaroand Smith, 2011). Unlike developed nations that enjoy the benefits of robust human capital such as high productivity, equitable income distribution, and sustainable economic growth developing countries continue to struggle with limited resources and infrastructure, which hinder progress in human capital development and, by extension, economic performance.

Nigeria, as a developing country in Sub-Saharan Africa, has made several efforts to improve its human capital through educational reforms. However, initiatives such as the Universal Primary Education (UPE) introduced in 1976 and the Universal Basic Education (UBE) launched in 1999 have been largely unsuccessful due to corruption, poor funding, and a shortage of qualified teachers. They reported that a significant percentage of teachers in Nigerian primary schools lacked the minimum required qualifications, undermining the quality of education (Ogbeifum and Olisa, 2001). Despite these setbacks, the Nigerian government continues to recognize the importance of human capital development and has maintained its focus on improving education and healthcare as a strategy for achieving long-term economic growth.This study, therefore, seeks to analyze how human capital development particularly through education and healthcare affects economic growth in Nigeria.

1.2 Problem Statement

Despite Nigeria's large population of approximately 217 million and its abundant human resource potential, the country continues to face persistent developmental challenges due to its inability to effectively develop and harness its human capital. Critical shortcomings in the education and healthcare sectors including inadequate funding, poor infrastructure, corruption, exam malpractice, and brain drain have hindered progress. Efforts such as the National Health Promotion Policy (NHPP) introduced in 2006 and revised in 2019 faced implementation challenges due to weak inter-sectoral collaboration and limited understanding of health promotion. Similarly, the National Policy on

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Education, rooted in post-colonial reforms and introduced in 1977 through initiatives like the Universal Primary Education (UPE) and Universal Basic Education (UBE), has struggled to meet its goals, with significant disparities and inconsistencies in implementation across states. Although Nigeria has made efforts toward developing its human capital, the nation still struggles to transform this potential into tangible socioeconomic outcomes. The mechanisms through which human capital influences economic growth remain underexplored, especially in light of high unemployment rates among educated individuals, underscoring the need for empirical investigation into the impact of human capital development on Nigeria's economic growth.

1.3 Research Questions

- What is the relationship between per capita income and economic growth in Nigeria?
- To what extent does government spending on the education sector influence economic growth in Nigeria?
- What is the nature of the relationship between government expenditure on the health sector and economic growth in Nigeria?

1.4 Objectives of the Study

- To analyze the connection between per capita income and economic growth in Nigeria.
- To evaluate the impact of government expenditure on the education sector on Nigeria's economic growth.
- To explore the relationship between government spending on the health sector and economic growth in Nigeria.

1.5 Scope of the Study

This study focuses on examining the impact of human capital development on economic growth in Nigeria from 1990 to 2023, with particular emphasis on key components such as education, health, and per capita income. It analyzes the relationship between government expenditure in the education and health sectors and their influence on Nigeria's economic performance over the specified period. By evaluating trends and policy outcomes within this timeframe, the study aims to provide a comprehensive understanding of how investment in human capital has contributed to the country's economic growth and to offer evidence-based recommendations for future development planning.

2. Literature Review

Endogenous growth theory has sparked significant interest among economists regarding the empirical evidence from cross-country comparisons, particularly concerning the relationship between human capital formation and real output growth rates. Growth models that treat human capital as a simple input to production suggest that changes in education levels should positively correlate with growth rates. In contrast, models that view human capital as a driver of innovation and its diffusion throughout the economy argue that the stock of human capital, rather than its flow, is what influences overall productivity growth.

Early studies on the impact of human capital on growth, focused on data from over 100 countries during the post-1960 period (Mankiw, et al., 1992; Barro, 1991). These studies used narrow flow measures of human capital, like school enrollment rates at the primary and secondary levels, which were found to correlate positively with output growth. Barro found that economic convergence was strongly linked to human capital formation: poorer countries with higher levels of human capital relative to GDP tended to catch up with wealthier nations.

They survey of econometric studies on cross-country growth equations presents more robust results (Krueger and Lindahl's, 1998). First, changes in the stock of human capital do not appear to affect growth rates as predicted model, which contrasts with the robust evidence from micro-level studies on education and income (Lucas's, 1988). When accounting for measurement errors, changes in education stock correlate positively with economic growth. Second, the positive effect of the human capital stock on growth is more robust, though the effect size varies across countries. Other findings include the greater impact of secondary and higher education on growth compared to primary education, and the negligible or negative impact of female education on output growth. Regarding the latter, Krueger and Lindahl suggest that gender discrimination in labor markets may explain why female education has a minimal effect in some countries. In countries with high female labor market participation, variations in female education have a small positive impact on growth rates.

It incorporates human capital as an additional input in the production of goods while maintaining other features of the neoclassical growth model (Lucas, 1988). In this framework, human capital accumulates through time spent in education or on-the-job training, with a trade-off between current output production and future productivity gains.

Barro and Sala-i-Martin (1995, Ch.12), along with others, included life expectancy and infant mortality as proxies for tangible human capital in growth regressions, complementing intangible human capital measures like school inputs or cognitive tests. Their findings indicate a strong positive relationship between life expectancy and growth.

While there is convincing evidence that initial human capital levels are positively related to output growth, the link between changes in human capital and growth remains unclear. Researchers suggest that the direction of causality may run from growth to schooling, as higher anticipated growth reduces the discount rate, leading to higher demand for education(Bils and Klenow, 2000). Their empirical tests suggest that the channel from schooling to growth is weak, but the growth-to-schooling connection could account for the positive association found by (Barro, 1991; 1993).

The model human capital transmission across generations in an overlapping generations framework, where agents inherit the human capital of the previous generation (Azariadis and Drazen, 1990). They argue that the lack of consideration for intergenerational spillovers in human capital investment leads to technological externalities, which can result in increasing returns to human capital at the societal level.

In models like those of Solow-Swan and Ramsey, physical capital accumulation alone determines the evolution of output. When human capital is included, an additional sector for human capital growth is needed. The assumption that technology for human capital generation exhibits constant returns allows for a positive growth rate of output per worker in the steady state, with higher output growth tied to the productivity of education or on-the-job training.

Itformalizes how positive spill-over effects from workers' educational and training investments can create increasing returns to human capital at the macro level (Acemoglu, 1998). His model suggests that as workers and firms make their investments in human and physical capital, respectively, the return on human capital increases with the amount of complementary physical capital available, thereby boosting overall returns across the economy. Similarly, the model implies that physical capital also experiences increasing returns, resulting from the social interaction between human and physical capital.

2.1 Theoretical Literature Review

Human capital development has been widely discussed in economic theory, particularly within the framework of endogenous growth models. These models suggest that internal factors especially investments in education, health, and innovation play a critical role in promoting long-term economic growth. Unlike the neoclassical growth model that assumes diminishing returns to capital, endogenous growth theory, as introduced and further developed, posits that investments in human capital generate positive externalities and increasing returns, thus sustaining economic growth over time (Romer, 1986; Lucas, 1988). According to this perspective, a well-educated and healthy labor force enhances productivity, drives technological advancement, and fosters innovation, which are essential for sustained growth. This theory aligns with findings from, who found strong empirical support linking human capital indicators such as education levels and health outcomes with national economic performance (Barro, 1991; Mankiw, et al., 1992).

Additionally, theoretical extensions have highlighted the complex mechanisms through which human capital influences growth. For instance, emphasized that while human capital stock correlates positively with output growth, measurement errors can obscure the effects of changes in human capital over time (Krueger and Lindahl, 1998). Furthermore, models such as those introduced the idea of spillover effects and intergenerational transmission, where the societal return on investment in education and health may exceed individual returns (Acemoglu, 1998; Azariadis and Drazen, 1990). These models suggest that collective investments in human capital not only increase worker productivity but also lead to broader technological diffusion and institutional development. Thus, theoretical literature underscores that for countries like Nigeria, strategic investments in human capital—through improved access to education and healthcare—are vital for breaking cycles of underdevelopment and achieving sustained economic growth.

2.2 Empirical Literature Review

Examined the influence of human capital on economic growth in Nigeria using time series data from 1970 to 2019 (Bachama et al., 2021). Their findings showed a positive and significant relationship between economic growth and spending on health and education, both in the short- and long-term. However, labor was found to have a major negative impact on economic growth. They recommended that the Nigerian government prioritize improving the health and education sectors, allocate substantial resources to these areas, and promote job creation through skill development and vocational training to reduce unemployment. They studied the relationship between technical progress, structural change, and economic growth in Nigeria (Fashanu and George, 2020). Their research, using time series data and the Growth Decomposition model, addressed contradictory findings regarding structural change in the country. The study concluded that structural change fosters growth and suggested increasing government spending and implementing policies to stimulate aggregate demand, particularly for manufactured goods reliant on human labor productivity. They explored the causality between human capital and productivity growth in Nigeria, revealing low and unstable productivity growth (Adejumo and Adejumo, 2017). The study found that productivity growth led to human capital development, but human capital development did not drive productivity growth. They investigated the impact of sectoral government spending on economic growth using the Auto Regressive Distributed Lag model (Aremu et al., 2015). Their findings showed that defense spending negatively affected economic growth, while agricultural expenditure promoted it. However, government spending on education and transport/communication had no significant long-term impact on growth, and none of the expenditures contributed to short-term growth objectives. Analyzed the relationship between human capital and economic growth in Nigeria using time series data from 1981 to 2010 (Anyanwu et al., 2015). Using the ARDL framework, they found a positive impact of human capital development on economic growth but did not fully explore the long- and short-run effects of government expenditure on human capital development, with a four-year time lag that failed to capture the current relationship between government spending and growth.

3. Theoretical Framework

The theoretical foundation of this study is anchored on the Human Capital Theory and the Endogenous Growth Model. Human Capital Theory, as developed by Schultz and Becker, posits that investments in education and health enhance the productivity and efficiency of individuals, thereby contributing to economic growth. It emphasizes that skills, knowledge, and abilities are forms of capital that can yield economic returns similar to physical investments. Complementing this, the Endogenous Growth Model introduced by Romer highlights the role of internal factors such as human capital, innovation, and government policy in sustaining long-term economic growth. This model argues that continuous investment in human capital particularly through education and healthcare drives productivity and innovation, which in turn stimulate economic development. Together, these theories provide a robust framework for analyzing the relationship between government expenditure on health and education, per capita income, and economic growth in Nigeria.

3.1 Human Capital Theory

Economists from the Chicago School, particularly Schultz and Becker, played a key role in developing the concept of human capital during the 1960s. Schultz, a leader of the Chicago School, highlighted the importance of both innate and acquired skills as essential elements of human capital. In 1981, he emphasized the need to invest in and enhance these skills to build human capital. Gary Becker, a central figure in human capital theory, made a significant contribution with his seminal work, where he laid the theoretical groundwork for investment decisions in human capital within the context of neoclassical economics (Human Capital, 1964). Becker equated investments in human capital to investments in other production resources, like factories or mines. Schultz expanded on Becker's ideas by investigating how the returns on education could be measured in countries with different income levels and attitudes toward sacrificing earnings for human capital development. Human capital theory argues that the skills, knowledge, and abilities of the workforce are crucial for an organization's competitive edge, focusing on human resource management, development, and reward strategies. Education, within this theory, is seen as an investment with both private and social returns (Marginson, 2019).

3.2 The Endogenous Growth Model

In 1987, Paul Romer introduced endogenous growth theory, offering an alternative to the traditional neoclassical growth model. This theory questioned the conventional explanation for persistent wealth disparities between developed and underdeveloped countries. While neoclassical theory suggests diminishing returns on investments in physical capital, such as infrastructure, endogenous growth theory argues that long-term prosperity is driven by internal factors like human capital, innovation, and investment, rather than by external forces. Proponents of endogenous growth contend that productivity gains are directly tied to innovation and increased human capital investments. They emphasize the role of both the government and private sector in encouraging innovation through incentives like research and development (RandD) funding and intellectual property rights. In a knowledge-based economy, investments in technology and human capital continue to yield returns, particularly in high-tech sectors such as telecommunications and software.

Key principles of endogenous growth theory include the idea that government policies can enhance a country's growth rate by fostering market competition and stimulating product and process innovation. The theory also highlights the increasing returns to capital investment, especially in areas like education, healthcare, and infrastructure. Private sector investment in RandD is seen as a crucial driver of technological advancement, while protecting intellectual property rights and patents is essential to encourage business and entrepreneurial engagement in RandD. Furthermore, the theory stresses the importance of investing in human capital as a key element of growth and supports government policies that promote entrepreneurship to create new businesses, generate jobs, and spur further innovation.

4. Methodology

This research utilized an ex-post facto design, focusing on the collection and analysis of pre-existing data. Key variables such as Real Gross Domestic Product, government spending on health, government spending on education, and per capita income were examined, with data obtained from the Central Bank of Nigeria's statistical bulletins, ensuring the reliability of the time series data. The analysis was conducted using the Fully Modified Ordinary Least Squares (FMOLS) method to explore the relationships and dynamics among the variables. The study employed the Endogenous Growth Model, considering government spending on education, health, and per capita income as independent variables influencing economic growth.

As proxy, the implicit function is

LRGDP = f (LGSE, LGSEH, LPCI) (1)

Where:

LRGDP= Log of Real Gross Domestic Product

LGSE = Log of Government Spending on Education

LGSH = Log of Government Spending on Health

LPCI = Log of Per Capital Income

It is expressed explicitly as

$$PR_t = \alpha + \beta_1 LGSE_t + \beta_2 LGSH_t + \beta_3 PCI_t + \mu_t \quad (2)$$

Where;

α= intercept

$\beta_1 - \beta_3$ = parameter estimates of the regressors

μ_1 = stochastic error terms.

4.1 Data Presentation And Analysis

Table 1: Summary of Descriptive Statistics

	LRGDP	LGSE	LGSH	LPCI
Mean	4.245752	0.601778	4.249740	278767.7
Median	4.212993	0.445085	3.965180	280947.0
Maximum	15.32916	5.876543	7.342166	365972.7
Minimum	-2.035119	0.315114	2.366820	196800.5

Table 1 (cont): Summary of Descriptive Statistics				
Std. Dev.	3.905546	0.935396	1.317315	62832.73
Skewness	0.500458	5.506884	0.777457	-0.055796
Kurtosis	3.486541	31.57269	2.981691	1.328478
Jarque-Bera	1.754617	1328.411	3.425629	3.975788
Probability	0.415901	0.000000	0.180357	0.136984
Sum	144.3556	20.46047	144.4912	9478102.
Sum Sq. Dev.	503.3586	28.87386	57.26549	1.30E+11
Observations	34	34	34	34

Source: Authors Computation, (Eview-10), 2025

From the table above, each series name (e.g., LRGDP, LGSE, LGSH, LPCI) represents a specific variable or dataset column used for statistical analysis. The table provided is a descriptive statistics summary of these four series over 34 observations. For instance, LRGDP might represent the log of real GDP, while LGSE and LGSH could indicate logarithmic forms of government spending on education and health expenditure, respectively, and LPCI may stand for per capita income. The statistics such as mean, median, maximum, and standard deviation help summarize the central tendency and dispersion of each series. For example, LRGDP has a mean of 4.25 and ranges from -2.04 to 15.33, showing a wide spread, while LGSE has a high skewness (5.51), suggesting it is heavily right-skewed.

Additionally, the Jarque-Bera test and its associated probability values test for normality in the distribution of each series. A low p-value (typically below 0.05) would indicate a non-normal distribution. In this case, LGSE significantly deviates from normality (p-value = 0.000), while the other series such as LRGDP, LGSH, and LPCI have higher p-values (above 0.05), suggesting they are approximately normally distributed. These descriptive statistics are useful in understanding the behavior of your data and determining which transformations or estimation methods are appropriate in your econometric analysis.

Table 2: Summary of unit Root Text Result						
VARIABLE NAME	**ADF TEST**	**CRITICAL VALUES**			**LEVEL**	**CONCLUSION AT 5% S.L**
		1%	**5%**	**10%**		
LRGDP	-3.783312	-3.632900	-2.951125	-2.614300	1st DIFF	STATIONARY
LGSE	-6.185740	-3.639407	-2.951125	-2.614300	1st DIFF	STATIONARY
LGSH	-5.633583	-3.639407	-2.951125	-2.614300	1st DIFF	STATIONARY
LPCI	-3.373775	-3.632900	-2.948404	-2.612874	1st DIFF	STATIONARY

Source: Authors' Compilation using Eviews10.

The ADF (Augmented Dickey-Fuller) unit root test results show that all variables LRGDP, LGSE, LGSH, and LPCI were non-stationary at level but became stationary after first differencing, as indicated by their ADF test statistics being more negative than the 5% critical values. For instance, LRGDP has an ADF value of -3.78, which is less than the 5% critical value of -2.95, confirming stationarity at first difference. Similarly, LGSE, LGSH, and LPCI all show significant results at the 5% level after first differencing. This means the data series are integrated of order one, I(1), and are suitable for cointegration and long-run relationship analysis such as FMOLS.

Table 3: Cointegration Bound Test				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
LGSE	32.98108	13.67426	3.556463	0.0013
LGSH	75.74180	15.48761	2.177393	0.0000
LPCI	12.81608	1.632566	6.002917	0.0000
C	21412.98	1752.258	12.76508	0.0005

Source: Authors' Compilation using Eviews 10.

The Cointegration Bounds Testresults indicate the presence of a long-run equilibrium relationship among the variables, as the calculated F-statistic value of 12.32327 exceeds all the upper bound critical values at the 10%, 5%, and even 1% significance levels, for both the asymptotic and finite sample sizes. Since the F-statistic is higher than the upper bound (I(1)) values (e.g., 5% finite sample bound is 4.194 and 12.32 > 4.194), we reject the null hypothesisof no levels relationship. This confirms that the variables are cointegrated, meaning they move together in the long run despite being individually non-stationary, and it justifies the use of long-run estimation methods like FMOLS.

Null Hypothesis: Series are not cointegrated

Cointegration Bound Test

Table 4: Summary of Fully Modified ordinary Least square (FMOLS) Dependent Variable: RGDP				
F-Bounds Test		**Null Hypothesis**: No levels relationship		
Test Statistic	**Value**	**Signif.**	**I(0)**	**I(1)**
			Asymptotic: n=1000	
F-statistic	12.32327	10%	2.37	3.2
K	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66
Actual Sample Size	33		Finite Sample: n=35	
		10%	2.618	3.532

Table 4 (cont): Summary of Fully Modified ordinary Least square (FMOLS) Dependent Variable: RGDP				
		5%	3.164	4.194
		1%	4.428	5.816
			Finite Sample: n=30	
		10%	2.676	3.586
		5%	3.272	4.306
		1%	4.614	5.966

Source: Authors' computation, (Eviews-10) 2025

The Fully Modified Ordinary Least Squares (FMOLS) method Is a technique used to estimate long-run relationships in cointegrated time series models, especially when variables are non-stationary but move together over time. In the output above, FMOLS was applied to estimate the impact of independent variables (LGSE, LGSH, and LPCI) on a dependent variable (likely economic growth or income, though the dependent variable name is not shown). The coefficients represent the strength and direction of each variable's effect. For example, a one-unit increase in LGSE (log of government spending on education) is associated with a 32.98 unit increase in the dependent variable, holding other factors constant.

The associated t-statistics and p-values indicate that all explanatory variables are statistically significant at conventional levels (mostly 1% or 5%). For instance, LGSE has a t-statistic of 3.56 with a p-value of 0.0013, indicating a strong and statistically significant impact. LGSH (likely log of spending on health) and LPCI (log of per capita income) also have positive and significant effects. The constant term C has a high value of 21412.98, reflecting the intercept of the regression equation. Overall, the FMOLS results suggest that education, health, and income per capita significantly contribute to the long-run level of the dependent variable, aligning with economic theory that investments in human capital and higher income drive economic outcomes.

5. Empirical Analysis

Drawing from the results across all the tables provided including descriptive statistics, the ADF unit root test, cointegration bounds test, and FMOLS estimation the analysis presents a comprehensive view of the relationship between government spending and economic growth. The descriptive statistics indicate that the variables used in the study, such as LRGDP, LGSE, LGSH, and LPCI, vary considerably across observations, with LPCI (per capita income) showing a high mean and large standard deviation, reflecting disparities in income distribution. The skewness and kurtosis values suggest that while most variables are moderately skewed and close to normal distribution, LGSE is highly skewed and leptokurtic, which may indicate irregular patterns in education spending. The ADF unit root test results confirm that all variables are non-stationary at level but become stationary at first difference, justifying further long-run analysis. The cointegration bounds test further supports a long-term equilibrium relationship among the variables, as the F-statistic value of 12.32 far exceeds the upper critical bounds at all significance levels, thereby rejecting the null hypothesis of no cointegration.

Building on this foundation, the FMOLS estimation reveals that government spending on education (LGSE) has a positive and statistically significant impact on real GDP, with a coefficient of 32.98 and a p-value of 0.0013, suggesting that a 1% increase in education spending results in a substantial gain in GDP. However, this outcome may contrast with practical realities where inefficient spending, misalignment of educational programs with economic needs, or corruption as commonly seen in school feeding programs dilutes the effectiveness of such investments. Similarly, health spending (LGSH) shows a highly significant positive effect on GDP (75.74 coefficient; p = 0.0000), highlighting the economic importance of a healthy workforce. Per capita income (LPCI) also contributes positively (12.82 coefficient; p = 0.0000), indicating that higher income levels drive consumption and productivity. Together, the statistical and econometric results align to show that while education, health, and income all have potential to support economic growth, the actual impact depends heavily on the quality of governance, policy implementation, and coordination with broader development goals.

6. Summary of The Finding

The findings of the study reveal that government spending on education, health, and per capita income significantly influence economic growth in Nigeria. The results show that both health expenditure and per capita income have strong positive and statistically significant effects on real GDP, indicating that investments in human capital and improved income levels are essential drivers of economic development. While education spending also shows a positive impact, the effectiveness of such investments may be undermined by issues like poor policy implementation, corruption, and lack of coordination. Overall, the study confirms that strategic, transparent, and well-managed public investments in human capital are critical for fostering long-term economic growth.

7. Conclusion and Policy Recommendations

This study emphasizes the crucial role that government expenditure on education, health, and per capita income plays in driving economic growth in Nigeria. The empirical evidence, supported by statistical analyses including descriptive statistics, unit root tests, and FMOLS regression, affirms that strategic investment in human capital is essential for fostering economic advancement. Specifically, the results indicate a significant positive relationship between health spending and real GDP, as well as between per capita income and real GDP, highlighting the need for continuous public investment in sectors that directly enhance the population's productivity and standard of living. Although the relationship between education spending and economic growth was negative in the regression output, this may point more toward issues of inefficiency, mismanagement, and poor policy alignment rather than the ineffectiveness of education itself.

In light of these findings, several key policy recommendations are proposed.

Firstly, government spending on education must be reassessed to ensure that funds are directed toward impactful initiatives such as curriculum modernization, teacher training, learning infrastructure, and technology integration. Corruption and inefficiency within the educational system must be addressed through stronger regulatory oversight and accountability mechanisms. The Ministry of Education should ensure that expenditures translate into tangible improvements in learning outcomes and workforce readiness. Secondly, the positive contribution of health expenditure to economic growth underscores the need for a well-funded and efficiently managed healthcare system. Investment in preventive and primary healthcare services, disease control, and access to quality care should be prioritized. Collaborative partnerships with private and non-governmental health actors can further strengthen service delivery.

Lastly, to leverage the economic benefits of rising per capita income, the Ministry of Labour and Employment should promote job creation through industrialization, support for small and medium enterprises (SMEs), and policies that incentivize innovation and entrepreneurship. Efforts to reduce unemployment, expand vocational training, and increase financial access for low-income earners can significantly improve household income levels and aggregate demand, thereby spurring economic growth. Creating an enabling environment through sound fiscal and monetary policies will further encourage private sector participation and overall economic resilience.

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