



IMPACT OF HUMAN CAPITAL DEVELOPMENT ON ECONOMIC GROWTH IN NIGERIA

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ABSTRACT

Nigeria's human capital development has been a goal rather than a reality, despite abundant resources. The country's development challenges are likely to persist, and the impact of human capital on economic growth is underexplored. The study was an attempt to empirically examine the impact of human capital development on Economic growth in Nigeria. The study made use of secondary data which spanned from 1990 to 2022. The ex-post facto research design was adopted while the Fully modified ordinary least square (FMOLS) approach and the bound test were used for the estimation of the long and short-run impact of human capital development on economic growth in Nigeria. Based on the coefficient and probability values the results revealed that government spending on education sector in Nigeria has an inverse and significant impact on economic growth in Nigeria, the government spending on the health sector in Nigeria has a positive and significant impact on economic growth in Nigeria, the per capital income has a positive and significant impact on economic growth in Nigeria,. Therefore, the study recommended that Government spending on education and health significantly impacts real domestic product, requiring increased investments and efficient utilization. Addressing corruption and inadequate infrastructure is crucial. Health policies should improve healthcare infrastructure and reduce disease burdens for a healthier population and robust economy. Labor and employment ministries should focus on increasing per capita income, stimulating job creation, skill development, and entrepreneurship.

KEYWORDS: Human capital, Health, Education, Per capital Income

Jel Classification: O16, I15, I25, G51

1. INTRODUCTION

Economic growth refers to the expansion of a country's production of goods and services, typically measured through Gross Domestic Product (GDP). It serves as a crucial indicator of a

nation's overall economic well-being, influencing the standard of living and prosperity of its citizens. Various factors drive economic growth, including technological progress, human capital, investment, trade, natural resources, and political stability.

Jhingan (2005) emphasizes that discussions on economic growth often prioritize the accumulation of physical capital over human capital. While physical capital includes tangible assets like machinery and infrastructure, human capital, encompassing education, training, and healthcare, plays a pivotal role in enhancing productivity, increasing income levels, and fostering positive personal attributes.

The term "human capital" is frequently used by economists, including Todaro and Smith (2013), to refer to education, health, and other human abilities that contribute to increased productivity. Research, including studies in the United States, consistently shows that individuals with higher education levels tend to earn above-average incomes, demonstrating the economic benefits of investing in human capital. Human capital development involves enhancing knowledge, skills, abilities, and health in a society or workforce. It includes elements such as education, healthcare, information technology, social inclusion, early childhood development, skills training, and labor market policies. Recognizing the significance of human capital, economists agree that its development is fundamental for a country's socio-economic and political transformation.

Human capital is a key factor in economic growth models, including neoclassical and endogenous growth models. Neoclassical models emphasize external technical progress, while endogenous growth models assign a more prominent role to human capital. The commitment to building human capital is identified as a key factor in the remarkable performance of developed and industrializing countries.

Before the Second World War, there was limited academic discussion on the link between education and the economy. However, subsequent studies by influential economists like Schultz (1961) and Denison (1962) provided substantial evidence of the critical role of education in economic growth. Health also emerged as a determinant of economic performance, contributing directly to well-being

and serving as a form of human capital. Scholars like Schultz (1992) argue that the quality of a population, including education and health, is a pivotal factor of production. Investments in education and health are considered essential components of human capital development, aligning with research by Bloom and Canning.

Problem Statement

Nigeria, with its sizable population of approximately 217 million people, possesses abundant human resources. However, the country has faced enduring developmental challenges, and a significant contributor to these issues is its struggle to cultivate an effective human capital mix. Ifejika (2017) points out that Nigeria's attempts to build a robust human capital foundation are impeded by various shortcomings in the education and healthcare sectors. These challenges include insufficient funding, lack of infrastructure, corruption, widespread exam malpractice, and the phenomenon of "Brain Drain."

In 2006, the Nigerian government introduced the National Health Promotion Policy (NHPP) to enhance the health promotion capabilities of the national healthcare system. The aim was to provide comprehensive healthcare services covering promotion, protection, prevention, restoration, and rehabilitation for all citizens. However, the implementation of the NHPP (2006) faced obstacles such as weak inter-sectoral collaboration, inadequate management structures, deficient infrastructure, and limited understanding of health promotion concepts and consumer rights at all levels. Responding to these gaps and evolving health promotion practices, the National Health Promotion Policy was revised in 2019. Inoue, S., & Yamada, S. (2006)

Before 1977, Nigeria followed an educational policy inherited from its colonial history with Britain, which did not align with the country's aspirations. In 1969, a National Curriculum Conference was convened to reevaluate the curriculum. The introduction of the National Educational Research and Development Council

(NERDC) in 1973 led to the formulation of the National Policy on Education in 1977.

Analyzing the implementation efforts of Nigeria's primary and secondary education policy sheds light on the relationship between policies and goal achievement, especially through the Universal Basic Education (U.B.E.) initiative that began in 1976 as Universal Primary Education (U.P.E.). However, the rollout of the 3-3 aspects of the national education policy has been contentious, with some states implementing it in 1982 and others following gradually. Nearly 22 years later, concerns persist about the subpar standard of secondary education in Nigeria. Ogujiuba, K. (2013).

Nigeria, as a developing nation, stands as a notable example where the development of human capital has been more of an aspiration than a reality. Despite having abundant human resources, the country has struggled to effectively harness and convert this potential into significant socio-economic development gains. As long as the challenge of nurturing a valuable pool of human resources persists in Nigeria, the nation's development challenges are likely to endure and exacerbate.

The precise mechanisms through which human capital impacts economic growth have received limited research attention. Despite extensive political discourse on this matter, there is a need for scientific investigation, particularly in the context of Nigeria, where there are high unemployment rates among highly educated individuals. Therefore, this study aims to examine the impact of human capital development economic growth in Nigeria following the following objectives which include Examining the relationship between per capita income and economic growth in Nigeria, Assess the extent to which government spending on education sector affects economic growth in Nigeria and Investigate the relationship between government spending on health sector and economic growth in Nigeria.

2. MATERIALS AND METHODS

Conceptual Review

Human Capital Development

Human capital development is characterized as both an end and a means of development. It serves as a way to unlock the potential of individuals by expanding their capabilities, implying the empowerment of people to actively participate in their own development. Additionally, human capital development is a means in itself, as it enriches the skills, knowledge, productivity, and ingenuity of individuals through a broad process of human capital formation. This approach positions human capital development as a people-centered strategy rather than one centered around goods or production in the development context. According to a report from the African Development Bank (2001), human capital development is not only a crucial means for sustained economic growth but also an end in its own right. Simpasa *et al* (2015) Aigbedion (2017) contends that human capital development serves as the primary instrument for alleviating poverty. The author argues that poverty alleviation can be accomplished by providing education to the underprivileged, leading to the creation of more job opportunities, increased individual income, and overall economic advancement for a country.

Economic Growth

Economic growth often falls prey to definitional pluralism and is occasionally misconstrued as economic development. The term "economic growth" is challenging to pin down, with various schools of thought in the social sciences attributing different meanings to it. In some instances, it is mistakenly equated with economic development (Raymond & Ekponaanuadum, 2021). Achieving economic growth involves an increase in both the overall and per-person output of goods and services annually (Wilson, 2017). Simply put, a nation is considered to be developing if it can consistently raise its Gross National Product at a rate between 5 and 7 percent each year.

According to Guru (2016), there are two ways to describe economic growth. One perspective

characterizes it as a consistent annual increase in the real national income of an economy over an extended period, reflecting an upward trend in the net national product when prices are held constant. However, some economists criticize this definition as inadequate, pointing out that the average standard of living may decline even if the overall national income is rising—especially when the population is growing more rapidly than the total national income. As a more preferable method, Guru's second perspective (2016) defines economic growth as the long-term annual increase in a country's real per capita income.

Empirical Review

Bachama, *et al* (2021) investigated the impact of human capital on economic growth in Nigeria using time series data from 1970 to 2019. Their findings revealed a positive and significant relationship between economic growth and spending on health and education, both in the short- and long-term. However, labor was identified as having a major negative impact on economic growth. Their recommendations emphasized the need for the Nigerian government to focus on enhancing the health and education sectors, allocating a significant portion of government spending to these areas, and creating more job opportunities through skill development and vocational training to lower the unemployment rate in the country.

Fashanu and George (2020) explored the connection between technical progress, structural change, and economic growth in Nigeria. Contradictory findings on the presence and pattern of structural change in Nigeria were addressed through a retrospective research approach using time series data and the Growth Decomposition model. The study concluded that structural change in Nigeria is growth-promoting and recommended raising government expenditure and instituting new policies to boost aggregate demand, particularly for manufactured goods that heavily rely on the productivity of human labor.

Adejumo and Adejumo (2017) investigated the direction of causality between human capital and

productivity growth in Nigeria. The study revealed low and unstable productivity growth in Nigeria and found that while productivity growth caused human capital development, human capital development did not cause productivity growth.

Aremu *et al.* (2015) analyzed the impact of sectoral government expenditures on economic growth in Nigeria using the Auto Regressive Distributed Lag model. The study revealed that government expenditure on defense retards economic growth, while expenditure on agriculture promotes it. However, government expenditure on education and transport/communication showed no impact on economic growth in the long run, and none of the expenditures contributed to the growth objective in the short run.

Anyanwu *et al.* (2015) investigated the relationship between human capital and economic growth in Nigeria with time series data covering the periods of 1981-2010. Using the autoregressive distributed lag (ARDL) framework, the study found a positive impact of human capital development indicators on economic growth. However, it did not critically examine the long run and short run relationships of government expenditure on human capital development and had a time lag of four years, not reflecting the current effect of the relationship between government

Theoretical Framework

Human Capital Theory

Economists from the Chicago School in the 1960s, particularly Schultz and Becker, played a pivotal role in elaborating on the concept of human capital. Schultz, a leader of the Chicago School, emphasized the importance of considering both innate and acquired skills as crucial components of human capital. In 1981, he underscored the significance of investing in and expanding these skills to form human capital.

Gary Becker, a prominent figure in human capital theory, made a substantial contribution with his classic work "Human Capital" in 1964. This work provided a theoretical foundation for making investment decisions in human capital within the

framework of neoclassical economics. Becker likened investment in human capital to investments in other means of production, such as factories or mines.

Theodore Schultz further developed Becker's ideas by exploring how rates of return from education could be calculated in countries with varying income levels and different attitudes toward forgoing earnings for human capital development. Human capital theory posits that the competencies, skills, knowledge, and abilities of the workforce are integral to an organization's competitive advantage. This theory directs attention to resourcing, human resource development, and reward strategies and practices. According to Human Capital Theory, education is viewed as an investment, believed to yield both private and social benefits. Marginson, S. (2019).

The Endogenous Growth Model

In 1987, Paul Romer introduced an alternative perspective to neoclassical growth theory known as endogenous growth theory. This theory challenged the conventional understanding of how wealth gaps between developed and underdeveloped countries persist. While neoclassical theory suggests diminishing returns for investments in physical capital like infrastructure, endogenous growth theory argues that a sustained rate of prosperity is influenced by internal factors such as human capital, innovation, and investment capital, as opposed to external, uncontrollable forces.

Endogenous growth economists contend that improvements in productivity can be directly linked to accelerated innovation and increased investments in human capital. They advocate for both government and private sector institutions to foster innovation initiatives and provide incentives for creativity, such as research and development (R&D) funding and intellectual property rights.

In a knowledge-based economy, the spillover effects from investments in technology and human capital continue to generate returns, particularly in

influential sectors like telecommunications, software, and other high-tech industries.

Key tenets of endogenous growth theory include:

- Government policies can raise a country's growth rate by promoting intense competition in markets and stimulating innovation in products and processes.
- There are increasing returns to scale from capital investment, especially in infrastructure and investments in education, health, and telecommunications.
- Private sector investment in R&D is a crucial driver of technological progress.
- Protecting property rights and patents is essential to incentivize businesses and entrepreneurs to engage in R&D.
- Investment in human capital is a vital component of growth.
- Government policy should encourage entrepreneurship as a means of creating new businesses, which serves as an important source of new jobs, investment, and further innovation.

Methods and Model Specification

This study employed an ex-post facto research design, involving the collection and analysis of existing data. Variables such as Real Gross Domestic Product, Government Spending on the Health sector, Government Spending on Education, and Per Capita Income were utilized, with data sourced from the Central Bank of Nigeria statistical bulletins, providing reliable time series data.

The data analysis employed the Fully Modified Ordinary Least Squares (FMOLS) test, allowing for the examination of relationships and dynamics among the variables under investigation. The study adopted the Endogenous Growth Model, with government spending on education, health, and per capita income serving as independent variables in relation to an increase in economic growth

As proxy, the implicit function is

$$RGDP = f(GSA, GSE, PCI) \text{ ----- (1)}$$

Where:

GSE = Government Spending on Education

GSH = Government Spending on Health

PCI = Per Capital Income

It is expressed explicitly as

$$PR_t = \alpha + \beta_1 GSE_t + \beta_2 GSH_t + \beta_3 PCI_t + \mu_t \text{ ----- (2)}$$

Where;

α = intercept

$\beta_1 - \beta_4$ = parameter estimates of the regressors

u_1 = stochastic error terms.

3. DATA PRESENTATION AND ANALYSIS

Table 1: Descriptive Statistics

	RGDP	GSE	GSH	PCI
Mean	44776.99	57.03333	139.7545	1260.800
Std. Dev.	20286.06	159.5701	184.6275	1000.918
Skewness	0.202675	5.081699	1.987728	0.423700
Kurtosis	1.401126	28.07139	7.278939	1.652053
Jarque-Bera	3.740972	1006.320	46.90616	3.485694
Probability	0.154049	0.000000	0.000000	0.175021
Observations	33	33	33	33

Source: Authors Computation, (Eview-13), 2023

The descriptive results presented in Table 1 reveal that the annual average Real Gross Domestic Product (RGDP) in Nigeria over the 33-year period (1990-2022) is 44,776.99, with a standard deviation of 20,286.06. This indicates a substantial deviation from both sides of the mean by 24,490.93, suggesting wide dispersion and fluctuations in RGDP growth, which has been relatively low over the years. The performance of RGDP appears to be highly uncertain.

The average Government Spending on Education (GSE), Government Spending on Health (GSH), and Per Capita Income (PCI) are 57.03333, 139.7545, and 1,260.800, respectively, with standard deviations of 159.5701, 184.6275, and 1,000.918. This indicates high disparity in GSE and moderate disparity in GSH and PCI figures. The skewness coefficients for RGDP, GSE, GSH, and PCI are all positive (0.202675, 5.081699,

1.987728, and 0.423700), suggesting positively skewed distributions that are not symmetrical around the mean.

The kurtosis values for GSE and GSH (28.07139 and 7.278939, respectively) are greater than three, indicating leptokurtic distributions (slim or long-tailed), suggesting peakedness relative to a normal distribution. On the other hand, the kurtosis values for RGDP and PCI (1.401126 and 1.652053, respectively) are less than 3, signifying platykurtic distributions, indicating flatness relative to a normal distribution.

The descriptive normality results suggest that GSE and GSH are not normally distributed, while RGDP and PCI follow a normal distribution. This is supported by the Jarque-Bera probability values of 0.000000 (RGDP and PCI) and 0.154049 (RGDP) and 0.175021 (PCI), all found to be less than 0.05, indicating non-normal distribution for GSE and GSH and normal distribution for RGDP and PCI.

Table 2: Summary of unit Root Test Result

VARIABLES	ADF TEST STATISTICS	CRITICAL VALUES	ORDER OF INTEGRATION
Real Gross Domestic Product (RGDP)	-5.969216	-3.562882	I(1)
Government Spending on Education (GSE)	-4.776283	-3.562882	I(1)
Government Spending on Health (GSH)	-5.208967	-3.580622	I(1)

Per Capital Income (PCI)	-4.865291	-3.562882	I(1)
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Source: Authors Computation, 2022 (Eviews-12)
 Note: The test includes both Trend and Intercepts and all at 5% level of significance.

The ADF test revealed that all variables were stationary at the first difference and at the 5% level of significance. The unit root ADF test was therefore rejected for each of the interesting variables.

Table 3:
Cointegration Bound Test

F-Bounds Test	Value	Null Hypothesis: relationship	No I(0)	levels I(1)
F-statistic	11.37780	10%	3.47	4.45
K	3	5%	4.01	5.07
		2.5%	4.52	5.62

Source: Authors' computation, (Eviews-13) 2023
 The co-integration test results presented in Table 3 indicate that the F-statistic value of 11.37780 exceeds both the lower I(0) and upper bound I(1) critical values of 4.01 and 5.07, respectively, at the 5% significance level. This implies that the variables are co-integrated, establishing a long-run equilibrium relationship between Economic Growth and Human Capital Development in Nigeria from 1990 to 2022. Consequently, the null hypothesis of no long-run relationship is rejected at a 5% significance level. Since the unit root test reveals that the variables are stationary at order one I(1), we can proceed to estimate the Fully Modified Ordinary Least Squares (FMOLS)

Table 4:
Fully Modified ordinary Least square (FMOLS)
Dependent Variable: RGDP

Null Hypothesis: Series are not cointegrated

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GSE	-34.91595	13.08168	-2.669071	0.0125
GSH	74.72701	14.70619	5.081332	0.0000
PCI	11.55911	1.712672	6.74917	0.0000
C	21492.76	1712.881	12.54773	0.0000

R-squared	0.950864		
Adjusted R-squared	0.945599		
F-statistic	125.9496		
Prob(F-statistic)	0.0000		

Source: Authors' computation, (Eviews-12) 2023
 In Table 4, with government spending on education, government spending on health, and per capita income held constant, the real gross domestic product stood at N 21,492.76 billion. In simpler terms, when human capital development is maintained at a constant level, the real domestic product amounts to N 21,492.76 billion worth of goods. The table further illustrates a inverse relationship between government spending on education and real domestic product, a positive relationship between government spending on health and real domestic product, and a positive relationship between per capita income and real domestic product over the reviewed period. This implies that an increase in government spending on education will lead to decrease in economic growth while an increase in government spending on health, and per capita income results in an increase in real domestic product. This relationship is statistically significant, with a probability value less than 0.05.

The model's goodness of fit, indicated by R2 and adjusted R2 values of 0.95 or 94%, signifies a strong fit. Specifically, the adjusted R2 value of 94% suggests that 94% of the total variation in observed real domestic product output in Nigeria is jointly explained by variations in government spending on education, government spending on health, and per capita income. The remaining 6% is attributed to the stochastic error term. The overall significance of the model was tested using the F-statistic and its associated p-value of 125.9496 and 0.0000, respectively, indicating high significance and confirming the model's strong explanatory power, with a significance level less than 0.05%

Post Estimation Diagnostic Test

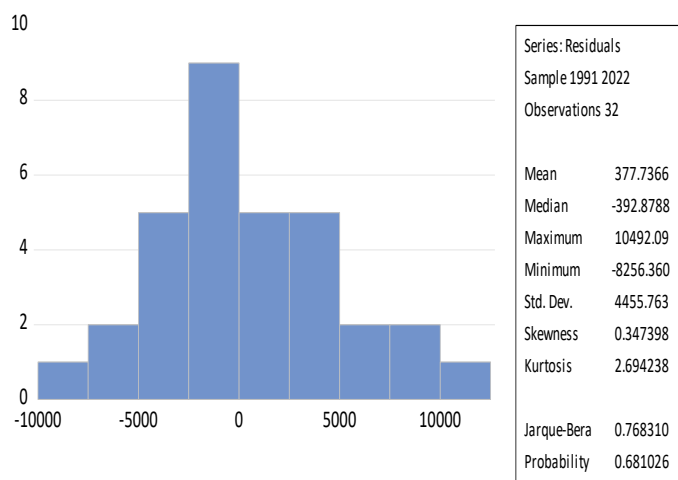


Figure 1: Normality test

Source: Authors' computation, (Eviews-12) 2023

The outcome depicted in Figure 1 reveals that the probability value of the Jarque-Bera test, at 0.681026, suggests that the hypothesis of normal distribution can be accepted.

Discussion of Findings

The analysis findings indicate an inverse relationship between government spending on education and real domestic product. Specifically, for every one billion increase in government spending on education, real domestic product is expected to decrease by 34.91595 billion. This relationship is statistically significant, with a probability value of 0.0125. This relationship prove that government spending is not directed towards improving the quality of education, including curriculum development and teacher training, the resulting workforce may lack the necessary skills to contribute meaningfully to the economy, for example the school feeding program has no direct effect on the sector also, The absence of coordination between educational policies and broader economic development strategies has result in a failure to leverage the full potential of an educated workforce and lastly Widespread corruption and mismanagement of funds within the education sector can hinder the effective utilization of resources. Embezzlement and diversion of funds away from critical areas may limit the positive effects on economic growth. This does not aligns

with the findings of Aremu et al. (2015) on the impact of sectoral government expenditures on economic growth in Nigeria.

Additionally, the study reveals a positive and significant relationship between government spending on health and real domestic product. For every one billion increase in government spending on health, real domestic product is projected to increase by 74.72701 billion. This suggests that government spending on health not only addresses health concerns but also contributes to increased disposable income, thereby benefiting the overall economy. This finding is consistent with the work of Anyanwu et al. (2015) on the relationship between human capital and economic growth.

Lastly, the study shows a positive relationship between per capita income and real domestic product. With every one billion increase in per capita income, real domestic product is expected to rise by 11.55911. This implies that higher income levels result in increased purchasing power and consumption, ultimately bolstering the country's economy

4. CONCLUSIONS AND RECOMMENDATIONS

In conclusion, the study underscores the crucial role of government spending on education, health, and per capita income in fostering economic growth in Nigeria. The positive relationships observed indicate that strategic investments in human capital development significantly contribute to the overall economic well-being of the nation.

Based on the analysis of the regression model and its findings, the following policy recommendations can be made:

- I. Given the substantial impact of government spending on education there is a need for a comprehensive reevaluation of government spending on education to ensure its alignment with economic development goals. Efforts should focus on addressing issues of corruption, mismanagement, and the lack of coordination. Policymakers through the ministry of education and health should prioritize and increase

investments in these sectors. This involves not only allocating more funds but also ensuring efficient utilization and addressing existing challenges such as corruption and inadequate infrastructure.

- II. The positive association between government spending on health and economic growth emphasizes the need for sustained and effective health policies by government and stakeholders. Continuous efforts to improve healthcare infrastructure, reduce disease burdens, and enhance access to healthcare services can contribute to a healthier population and, subsequently, a more robust economy.
- III. Policymakers through the ministry of labor and employment should focus on strategies to increase per capita income, as it is positively linked to real domestic product growth. This may involve implementing policies that stimulate job creation, enhance skills development, and promote entrepreneurship. Creating an environment conducive to economic activities and income generation is vital.

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