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ANALYSIS OF THE IMPACT OF HUMAN CAPITAL DEVELOPMENT ON ECONOMIC GROWTH IN NIGERIA

MSHELIA CHARLES IBRAHIM

Department of Economics, Nile University of Nigeria, Abuja, Nigeria. Email: Charlesmshelia5@gmail.com

Abstract

The Study examined the "impact of human capital development on the economic growth in Nigeria: 1980-2024". The variables of interest are Economic growth rate (EGR), Government Expenditure on Health (GEH), Government Expenditure on Education (GEE), Poverty rate (GPR) and Employment Generation rate (EGP). Augmented Dickey-Fuller (ADF) was employed to test for the stationarity of the variables under study. The result of the unit root test revealed that Economic growth rate (EGR) was stationary at level while Government Expenditure on Health (GEH), Government Expenditure on Education (GEE), Poverty rate (GPR) and Employment Generation rate (EGP) were stationary at first difference. The ARDL BOUNDS test revealed that there is a long run co-integrating relationship between the dependent variable and the independent variables. Both the ARDL short run and long-run results indicate that Government Expenditure on Health had a negative and significant impact on economic growth in Nigeria, while Government Expenditure on Education had a positive and insignificant impact on the economic growth in Nigeria during the period under consideration. Findings also revealed that Government poverty reduction programmes had positive and significant impact on economic growth in Nigeria whereas, employment generation rate impacted negatively and insignificantly on the economic growth in Nigeria. The diagnostic test revealed that F-stats and probabilities obtained reflect positivity as they all suggest the rejection of null hypothesis for each category of diagnostic tests. Explicatively, the serial correlation test result shows the absence of serial correlation as an econometric problem. Lastly, the Granger causality test results show that unidirectional relationship runs between Employment generation rate and Economic growth in Nigeria, while there is no causality between economic growth and other remaining independent variables. A number of recommendations were made based on the findings prominent among them is the need for Government and other relevant authorities to increase the expenditure on health as such can boost the health status of the people which is likely to fill the health care delivery service gap already being experienced in the country.

Keywords: Human Capital Development, Economic Growth, Poverty Rate, Employment Generation Rate, Government Expenditure on Health and Education, Nigeria.

INTRODUCTION

The role of human capital development in economic growth across the globe cannot be overemphasized. The development of human capital has been recognized by development economists to be an important prerequisite and an invaluable asset for a country's socio-economic and political transformation. It has been posited by many that human capital formation has contributed immensely to economic growth. This has been achieved through increased knowledge, skills and capabilities acquired through education and training by all the people in country. There can be no significant economic growth in any country without adequate human and natural resources (Lucas, 2024). In the past, much of the planning in Nigeria was centered on the accumulation of physical capital for rapid growth and development, without recognition of the important role played by human capital in the development process. The stock of human capital like the stock of natural and physical capital will deteriorate and decay if not increased and maintained through improvement in public

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health and sanitation, social welfare service, good nutrition and guaranteed employment schemes. Therefore, these human capital formation indices should be integrated into the planning process in order to achieve a sustainable growth and development (Ayo, 2023).

Education has positive impacts on the economy, investment in education and training is imperative if the aim is to propel the economy to higher levels of productivity and income and there by accelerate the rate of economic growth. Education increases the number of knowledgeable workers by improving their skills and enabling them to handle new challenges. In addition, education enhances their occupational mobility, reduces the level of unemployment in the economy, increases the earning capacity and productivity of the country's workforce, improves access to health information which will increase life expectancy and at the same time, lower the fertility rate Abas (2021). Education also enhances income distribution and social equity, for example, the success story of East Asia was largely because of successful educational strategies (World Bank, 2023). The economic benefits of human capital formation stem from the fact that people are made more productive by improving their nutrition, health, education and other social indices through adequate and proper investments.

Human beings constitute the key development input as producers and at the same time, the key beneficiaries of economic growth. This is because natural and physical resources would lie idle and remain unexploited without man. They are processed and developed by and for the use of human beings. In line with this argument, Umo (2022) and Yesufu (2021) believe that without labour, all other factors of production are passive.

Oladeji and Adebayo (2022) assessed the importance of human capital in the development process, according to them, raw resources are a critical variable in the growth process and worthy of development, to achieve economic progress. It is apparent that the underdevelopment and under-utilization of the skills and knowledge of the people of a country will lead to economic retardation of such a country. This is because ignoring human capital in the growth process would mean lowering the productive capacity of such an economy and hence, reducing growth. Since healthy and educated people make an economy more productive and this propels growth, human capital development is imperative. Investment in human capital entails equipping people through education and training not only for employment but also to enable them perceives new opportunities and initiate and organize innovative programs. Investment in human capital creates a broad technological trained human capital base well suited to rapid economic growth. Therefore, human capital formation is a concomitant if not a driver of rapid economic growth (Adamu,2023). Human resources are all embracing, that is, it is inclusive of persons who work now or are likely to be productively employed sooner or later. In effect, human resources development encompasses virtually the whole population as its target. Therefore, human capital formation is a continuum, a continuing process from childhood to old age and a must for any society or enterprise that wishes to survive under the complex challenges of a dynamic world (Adebayo, 2022). Against this backdrop, the study seeks to examine the impact of human capital development on the economic growth in Nigeria. The paper is structured as follows, section one is introduction, section two reviews the related literature on the subject matter. Section three is the methodology of the study. Section four is the

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presentation of results and discussion. Finally, section five is conclusion and policy recommendations.

LITERATURE REVIEW

Conceptual Review

Human Capital Development

Human capital development is any attempt to increase human knowledge, enhance skills and productivity and stimulate resourcefulness of citizens. Olapede (2022) define human capital development as the totality of efforts aimed at developing and grooming of human beings so as to present them fit and qualified to be productive to themselves in particular and the society in general. Human capital development "is the process of acquiring and increasing the number of persons who have the skills, education and experience which are critical for economic and political development of a country". Human capital development is associated with investment in man and his development as a creative and productive resource (Oloni, 2022). Human capital is defined by economists as the knowledge, health, and other qualities of people that, if increased, might raise productivity (Todaro& Smith, 2003). Human capital formation (development) refers to the process of acquiring and growing the number of people who have the skills, education, and experience that are essential for economic for economic growth and development of a country. Human capital refers to the abilities and skills of a country's human resources (Okojie, 2018). Human capital is directly helpful in the industrial process, according to Becker (2019). It boosts a worker's productivity across the board, albeit it may vary depending on the task, the organisation, and the environment.

The concept of human capital refers to the abilities and skills of the human resources of a country, while human capital formation refers to the process of acquiring and increasing the number of persons who have the skills, education and experience that are critical for economic growth and political development of a country, Human capital information, “is thus associated with investment in man and his development as a creative and productive person.” The totality of the effort and cost involved in this massive upgrading of the productive capacity of the peoples constitutes investment in human resources, which is also referred to as manpower development or human resources development (Abromowats, 2023).

Human capital is used to describe education, health and human capacities that can raise productivity when increased. Health is defined as a state of fitness of the body to carryout various tasks effectively and efficiently. Education is defined as the training given to people through which they learn to develop and use their mental and physical power in doing particular work or jobs (Bello, 2023). Human capital formation involves investment in education, training, health and other social services like transport facilities and housing. Some authors are of the view that a formal educational system is the major institutional mechanism for building and advancing people’s knowledge, skills and attitudes (Babalola 2022). Education clearly plays a critical role in economic growth. Studies have shown that many of the advanced countries today enjoy rapid growth and a well-developed and purposeful educational (Benhabib

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and Spiegel, 2022).Education is a sound economic investment for individuals and families because it raises the quality of life, improves health, productivity and living standards, increases access to paid employment and emancipates them for social and political participation in the economy (Bloom and Jaypee, 2019). In any case, investing in education complements investment in physical capital when a sound macroeconomic policy is put in place.

The concept of human capital formation refers to a conscious and continuous process of acquiring requisite knowledge, education, skills and experiences that are crucial for the rapid economic growth of a country (Salleh 2022). The importance of human capital has been emphasized in the World Bank Report on sub-Saharan Africa (2023) which calls for a doubling of public expenditure on human resources development from 4-5 percent of GDP in 2005 to 8-10 percent by year 2015 (World Bank 2023).

The concept of human capital refers to the abilities and skills of human resources of a country. According to OECD (2022), human capital is concerned with knowledge, skills competitiveness and attributes embedded in an individual that facilitates the creations of personal, social and economic wellbeing.

Economic Growth

Economic growth is a term that is hard to define, and it is often believed that this is because there are so many different schools of thought in the social sciences and elsewhere that attribute different meanings to it. It could be seen as, for example, economic development (Raymond &Ekponaanuadum, 2021). To achieve that, both the overall and per-person output of goods and services must increase each year (Wilson, 2022). In other words, a nation would be considered developing if it could consistently raise its Gross National Product at a rate of between 5 and 7 percent year. According to Guru (2023), there are two methods to describe economic growth. Economic growth can be characterised in one sense as consistent annual gains in the real national income of an economy over an extended period of time. In other words, economic growth is the upward trend in the net national product when prices remain constant. Some economists have critiqued this description as being insufficient and unsatisfactory. They contend that even while the overall national income may be rising, the average level of living may be declining. When the population is growing more quickly than the total national income, this can occur. Therefore, defining economic growth in terms of per capita income is the second and preferable method. According to Guru's second perspective (2019), economic growth is the long-term annual rise in a country's real per capita income.

Economic growth, according to Amadeo (2022), is measured by how much more the economy produces than it did previously, and if the economy is creating more, it motivates enterprises to work harder. The money can be used by businesses to grow and hire more staff. According to Daly, Czech, Blackwelder, Magnus-Johnston, and Zencey, the phrase "economic growth" has two separate meanings (2023). On rare occasions, it might be connected to the growth of our economy (the physical subsystem of our world made up of the stocks of population and wealth; and the flows of production and consumption). The phrase also has a second,

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marginally distinct meaning that describes economically healthy expansion that makes a profit when advantages outweigh disadvantages. According to Kessier (2022), economic growth happens when a society is able to generate more commodities and services as a result of increased productivity. Therefore, economic growth can be defined as the sustained annual rise or development in a nation's real per capita income (real GDP per capita or production per person). The yearly real GDP, which is the monetary value of all finished products and services at market prices, and 2010 as the base year are used to compute this. Investment, human capital, innovation and R&D activities, trade openness, foreign direct investment (FDI), institutional framework, political concerns, and social-cultural aspects are a few of the elements that affect economic growth.

Economic growth has been regarded as sin qua non for economic development process way back in the history of economics. This early view of economic development dominated the thinking then, with a bias towards the objective of high economic growth with such notion, nation economic planners strove to expand production capacity to enhance economic growth, unfortunately, that was not to be as the incidence of income inequality and poverty continued to increase despite the growth recorded in some countries. It must be admitted; however, that economic is a necessary but insufficient condition for improving the lives of the poor. This become clearer when one compares the standard of living of people in Western Europe and North America where there are almost consistent high growth rates with that of their counterparts in Africa who record very low growth rates (Meier, 2022)

Health

According to Walterer (2020), the subject of health as human capital relies on three interrelated dimensions. Firstly, an analysis of the ideal investments in health by all stakeholders: individuals, drug companies and governments`. Secondly, there should be development on the literature that analyzes the amounts that people are willing to spend for improvements in their probabilities of surviving different ages (Taniguchi, 2020). Thirdly, Pritchelt (2019) underlines the significance of complementarities in relating health to education and the other types of human capital investments, and in linking investments in health to discount rates in order to progress in fighting different diseases (Pandalino and Vivarelli, 2020).

In addition, Health expenditure is the total amount spent on healthcare goods and services in a particular country or region over a specified period, usually a year. It encompasses government and private sector spending on healthcare services, infrastructure, medical equipment, pharmaceuticals, and personnel, among other healthcare-related expenses. In Nigeria, health expenditure is a critical aspect of its healthcare system and has significant implications for its population's overall health and well-being.

Understanding health expenditure is essential for assessing healthcare services' adequacy, efficiency, and effectiveness and identifying areas that require improvement.

A mix of public and private spending characterizes health expenditure in Nigeria. Public health expenditure includes spending by the government at all levels (federal, state, and local) on healthcare services and programs. This spending is often allocated through the national budget

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and includes funding for primary healthcare centers, hospitals, healthcare personnel salaries, and medical supplies and equipment procurement. Private health expenditure, on the other hand, includes spending by individuals, households, and private organizations on healthcare services. This can consist of out-of-pocket payments for medical consultations, hospitalizations, medications, and private health insurance premiums.

Education

According to Psach (2022), "that education has some value may be self-evident. Otherwise, why are trillions of dollars spent annually on education around the globe? Both states and individuals who incur such expense must expect a benefit in return. But whether the benefits actually exceed the education expenses is not a trivial question''. The value of education can be measured by either the input method or the output method. The input method assesses the resources committed to education by families, students, and the state. This method looks at the value of education from an accounting point of view. By contrast, the output method assesses what is produced by education, such as a higher standard of living enjoyed by the more educated relative to the less educated (Alani, 2024).

The comparison between the education inputs and outputs leads to measures of efficiency in the use of resources. The intervention of the state as a tax collector and financier of education leads to issues of equity in the distribution of education resources. This method looks at the value of education from an economic point of view. In this field, expenditures on education (the input side) are treated as investment in human capital (Chete and Adeoye,2019). The value of such investment is measured by the returns it yields over the lifetime of a more educated person relative to a less educated one (output side), over and above the investment costs. To the extent that equity considerations enter into society's values, the equity or inequity effects of particular education investments are taken into account (Akangbon, 2021).

Employment

The term employment is used to describe a situation whereby able-bodied men and women who are qualified by the condition to work in any given society can gainfully secure jobs whereby he or she will not be exploited on securing the job and equally optimize his or her capability in terms of his marginal labour production. The full employment of labour does not imply that there is no allowable unemployment percentage level but if it is not within the framework of the accepted level considered as full employment for either the developed or developed countries as the case may be, it will not be a serious case for policy decisions (Adeyemi et al, 2020). Employment is a relationship between two parties, usually based on a contract, one being the employer and the other being the employee. It is also defined as situations whereby able-bodied men and women who are qualified by the condition to work in any given society can gainfully secure jobs whereby he or she will not exploited on securing the job and equally optimise his or her capability in terms of his marginal labour production (Babasanya, 2018). The term employment is used to describe a situation whereby able-bodied men and women who are qualified by the condition to work in any given society can gainfully secure jobs whereby he or she will not be exploited on securing the job and equally optimize

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his or her capability in terms of his marginal labour production (Abaukaka, 2024).

Poverty

Oladunni (2021) defines poverty in terms of insufficient income for securing the basic necessities of life such as food, potable water, clothing and shelter. She also say poverty may be viewed in terms of the consequences: such as deficient provision of goods and services, deprivation and lack of rights such as it affects the girl-child due to male child preference, insufficient capability as well as social and economic exclusion mechanisms. Poverty may be absolute, relative, chronic, transient, mass or localised. Absolute poverty is lack of physical minimum requirements for a person's or household's existence. On the other hand, relative poverty refers to a situation where a person or households is/are with provision of goods and services which is lower than that of other person(s) or group (Ayo, 2023).

Consequently, poverty is defined simply as a condition in which an individual does not have enough food to eat; poor drinking water; sanitation; nutrition, shelter; high infant mortality rate; low life expectancy, energy, low consumption, educational opportunities; lack of productive participation in the decision making process either as it affects the individuals or in national arena be it management or political. Awoseyila (2023) defines relative poverty as a condition in which households, overtime, fall short of the resources to maintain their standard of living. Applying the concept of poverty to Nigeria, Awoseyila (2017) states that those classified as poor included households below the poverty like those lacking access to basic economic and social services, rural dwellers with lack of essential infrastructure, the unemployed, among others. Measured in absolute and relative terms, poverty in Nigeria is generally more severe in rural communities and among vulnerable groups in urban centres. The incidence differs with household size, gender, educational, age and occupational distribution of households heads.

Poverty has been defined as the inability to attain a minimum standard of living by the world Development Report, 1990. The report constructed two indices based on a minimum level of consumption and standard of living. While the first index was a country's specific poverty line, the second was global, allowing cross-country comparison. The United Nations uses other indices as life expectancy, infant mortality rate, primary school enrolment, and the number of persons per physician, for example. Poverty defies objective definition because it is multi-dimensional in nature. Ravallion and Bidani (2023) refer to poverty as a lack of command over basic consumption needs, in other words, an inadequate level of consumption, insufficient food, clothing and shelter (Aluko, 1975). Obadan (2007) discussed the issue of poverty by looking at the general framework of poverty in Nigeria. He sees poverty reduction as a necessary but not sufficient condition for economic growth. He argues that investment in human capital is necessary to equip the poor to enable them share in the benefits of development. According to the World Bank (2021) poverty is hunger, lack of shelter, being sick and not being able to go to school, not knowing how to read, not being able to speak properly, not having job, fear for the future, losing a child to illness brought about by unclean water, powerlessness, lack of representation and freedom

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Theoretical Framework

This study adopted the human capital theory, it states how education increases the productivity and efficiency of workers by increasing the level of their cognitive skills. Theodore Schultz, Garry Becker and Jacob Mincer introduced the notion that people invest in education to increase their stock of human capital. The proponents see human capital as the stock of economically productive human capabilities, which can be formed by combining innate abilities with investments in human beings (Babalola 2023).

Examples of such investments include expenditures on education, on-the-job-training, health and nutrition. Such expenditures increase future productive capacity at the expense of current consumption. However, the stock of human capital increases in a period only when gross investment exceeds depreciation with the passage of time, with intense use or with lack of use. The provision of education is seen as a productive investment in human capital, an investment which the proponents of the human capital theory consider to be equally or even more equally worthwhile than that in physical capital. In fact, contemporary knowledge in the United States acknowledges that investment in human capital is three times better than that in physical inputs. Human capital theorists have established that basic literacy enhances the productivity of workers in low-skill occupations. They further state that an instruction that demands logical or analytical reasoning, or provides technical and specialized knowledge, increases the marginal productivity of workers in high-skill or professional positions. Moreover, the greater the provision of schooling, the greater the increases in national productivity and economic growth. The researcher adopted this theory in that investment in education, health and human capital are key to the economic growth and development of any Country.

Empirical Review

Several empirical studies have attempted to investigate the relationship between human capital development and economic growth and these studies have shown mixed results.

Eigbiremolen and Anaduaka (2024), examined the impact of human capital development on economic growth in Nigeria. The data covered 1990- 2023. they employed the technique of Autoregressive Distributed Lag (ARDL) model. The result of the study revealed that human capital development had significant positive impact on economic growth in Nigeria. The study recommended that government and policymakers should initiate measures aimed at building and developing human capacity through adequate educational funding across all levels.

Grammy and Assane (2024) investigated the relationship between human capital and growth rate of real per capita. They employed Ordinary least square (OLS) method,using school enrollment rates as proxies for human capital. Findings showed that the growth rate of real per capita is positively related to human capital. The study recommended that government and other key stakeholders should embark on measures aimed at boosting school enrollment rates.

Abbas (2024) analyzed the impacts of human capital development on economic growth in Nigeria. The data covered 1986-2022, using the technique of Autoregressive Distributed Lag (ARDL) model, findings showed that primary schooling enrollment rates had negative while

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secondary and higher schooling enrollment rates had positive and significant impact on economic growth in Nigeria during the period under review. The study has also combined the schooling enrollment rates at different levels of education with employment to generate effective labor input that performed better as compared to simple schooling enrollment rates and it is again concluded that there is an important growth effects associated with human capital. The study recommended that government and other key stakeholders in education sector should embark on policies geared towards increasing primary schooling enrollment rates.

Adebayo (2024) investigated human capital development and economic growth in Nigeria. Secondary data was used for the study covered 1990-2023 and Gross Domestic Product (GDP) served as a proxy for economic growth while the proxy for human development was total government expenditure on education and health and the enrolment pattern of primary, secondary and tertiary school. Using Ordinary least square (OLS) method, the findings of the study showed that there is a strong positive relationship between human capital development and economic growth. The study recommended that stakeholders need to evolve a more pragmatic means of developing human capacities since it is seen as an important tool for economic growth in Nigeria.

Akangbou (2024) examined the nexus between human capital and economic growth in Nigeria, with focus on the social and private returns to the different levels of education-primary, secondary and university. The study employed cross-sectional data and ordinary least square techniques. On the basis of the positive rate of returns often computed, inference is made about the positive role of human capital on economic growth. Based on the findings, the study recommended increased budget allocation to education sector.

Odusola (2024) investigated the empirical relationship between human capital development and economic growth in Nigeria. Using ordinary least square technique, study revealed that human capital, proxy by real capital and recurrent expenditure on education, is positively related to economic growth, although the relationship is weak. It was recommended that Government and other relevant stakeholders should initiate measures aimed at increasing capital and recurrent expenditures on education.

Adamu (2024) undertook an empirical investigation to determine the impact of human capital formation on economic growth in Nigeria between 1990 and 2023, using cointegration and error-correction mechanisms. The results indicate that investment in human capital in the form of education and training can lead to economic growth because of its impact on laborproductivity. The study recommended increased investment in education and training of youths by Government at all level and other key stakeholders.

Chete and Adeoye (2023) explored the association between human capital investment and economic growth in Nigeria, covering the period 1986-2022. A number of methodological approaches were employed to examine this link. Specifically, the Granger causality tests were inconclusive on the direction of causality. The variance decomposition analysis shows that "own shocks" constitute the predominant source of variation in employment growth's forecast

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errors and income growth's forecast errors, and that innovations of employment growth can be better predictors of income growth. The impulse response analysis reveals that there are considerable oscillations in the response patterns of income and employment to unanticipated shocks in each other. The study observed a mismatch between the manpower needs of the country and the skills turned out by the educational system. Based on the findings, the study recommended that Government and other key players in the education sector should urgently embark on measures such as introduction of entrepreneurship and vocational education at all levels to ensure graduates are well equipped with requisite skills needed in the society.

Uwatt (2023) assessed the role of human resource development proxies by enrolment in educational institutions on economic growth in Nigeria 1980-2022, using the augmented Solow growth model and relying on co-integration and error-correction methodology. The results showed that human resource development does not only contribute positively to economic growth in Nigeria, but its impact is strong and statistically significant. This occurs despite the decline in the quality of education at all levels since the mid-1980s. The study recommends that Government and other policymakers should endeavor to embark on measures aimed at sustaining the positive and significant impact already achieved during the period under review.

Ayara (2023) conducted a study on the relationship between human capital development and economic growth in Nigeria. The proxies for human capital development are Government expenditures on health and education. The study employed Autoregressive Distributed Lag (ARDL) model, findings revealed that Government expenditures on health and educationhadinsignificant negative effect on economic growth in Nigeria. However, several factors might be responsible for this. Some possible explanations offered by Ayara (2023) include the following ; (i) existence of brain drain; (ii) the newly created educational capital might have gone into privacy that is, privately remunerative but socially unproductive activities; (iii) incessant strike actions by the academic and non-academic staff of Nigerian universities; (iv) failure of the educational system to provide qualified manpower that would enhance productivity growth; (v) there may be slow growth in the demand for educated labor, so that the supply of educational capital has outstripped demand and returns to schooling have declined. The study recommended that Government and other key stakeholders in education and health sectors should initiate measures geared towards boosting Government expenditures on health and education.

Husain and Faruqwee (2023), examined the effects of human capital investment on growth in per capita income using varied forms of human capital investment, such as school enrolment, human development and economic liberty index. The study used OLS as estimation technique, findings evidently pointed out that human capital formation propels growth in per capita income. Its positive contribution to growth was statistically significant at 1 percent. Besides, the inclusion of the variable reduces the bias often associated with growth models that exclude human capital investment and, hence, the explanatory power of the model. The study recommended huger investment in education and health sectors to boost human capital formation. In contrast, Benhabib and Spiegel (2023) employed a standard growth accounting framework to study the contribution of human capital to economic growth, they found a

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negative relationship between initial per capita income and growth. The study recommended that key stakeholders should embark on policies aimed at reversing the negative relationship between initial per capita income and growth.

Similarly, Pritchett (2023) investigated the contribution of human capital development on economic growth in Nigeria from 1990-2022. The proxies for human capital development are Government expenditure and education and health. Using ordinary least square method, findings revealed that Government expenditure on education had negative impact on economic growth, while Government expenditure on health impacted positively on economic growth in Nigeriaduring the period under consideration. The study recommended increased government expenditure on education to boost human capital development.

Blooms *et al.,* (2023), as cited in Hamoudi and Sachs (2022), provided empirical evidence on the relationship between health variables and economic growth rates and found that health variables play a significant role in determining economic growth rates. They showed this by investigating cross-country data between 1995 and 2021, using a basic growth model, and they found that an increase of life expectancy by one percent accounted for an acceleration of GDP per capita growth by over 3 percent per annum. In addition, health and demographic variables explained over half of the differences in growth rates between Africa and the rest of the world over that same period. The study recommends increased Government spending in health sector.

METHODOLOGY

Data Sources

The study will employ the secondary data soured from, Central Bank of Nigeria (CBN) and National Bureau of Statistics (NBS) publications, 2025. The secondary data was chosen because it is considered to be the most appropriate method for the needed information.

S/N	Variables	Apriori Expectations	Source
1	EGR		CBN
2	GEH	POSITIVE	NBS
3	GEE	POSITIVE	NBS
4	GPR	POSITIVE	NBS
5	EGP	POSITIVE	CBN

Source: Author's Computation, 2026

Where:

EGR= Economic growth rate

GEH= Government Expenditure on Health

GEE = Government Expenditure on Education

GPR= Government Poverty Reduction Programmes

EGP= Employment Generation

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Model Specification

In order to test the hypotheses and achieve the objectives as stated in chapter one, this study adapted the model of Eigbiremolen and Anaduaka (2024), with the addition of Government Recurrent Expenditure on Health and Government Recurrent Expenditure on Education as part of the independent variables. The ARDL model is specified as:

EGR=F (GEH, GEE, GPR, EGP) ----------3.1

$$\Delta EGR_t = \beta_0 + \beta_1 \Delta EGR_{t-i} + \beta_2 \Delta GEH_{t-i} + \beta_3 \Delta GEE_{t-i} + \beta_4 \Delta GPR_{t-i} + \beta_5 \Delta EGP_{t-i} + \sum_{i=0}^{p} \beta_6 \Delta EGR_{t-i} + \sum_{i=0}^{p} \beta_7 \Delta GEH_{t-i} + \sum_{i=0}^{p} \beta_8 \Delta GEE_{t-i} + \sum_{i=0}^{p} \beta_9 \Delta GPR_{t-i} + \sum_{i=0}^{p} \beta_{10} \Delta EGP_{t-i} + ECM + \mu_t \text{----------} 3.2$$

Where: Δ= the Difference Operator

EGR= Economic growth rate

GEH= Government Expenditure on Health

GEE = Government Expenditure on Education

GPR= Government Poverty Reduction Programmes

EGP= Employment Generation

"F" is a function of

β_0 = Intercept

β_1, B_2,…..B_{10}= Partial Slopes of the Linear regression model

ECM=Error correction model

μ = Stochastic error term

Variable Measurement and Description

Dependent Variable: Economic Growth measured by growth rate of Gross Domestic Product (GDP) which is calculated by deflating nominal GDP by domestic consumer price index at 2010 constant price. While Government Expenditure on Health, and Government Expenditure on Education are measured in billion naira. Poverty reduction measured by the annual poverty rate and employment generation measured by the government expenditure on employment generation.

Apriori Expectation

The parameters (β's) are coefficients to be estimated and their apriori expectations are expected to be all positively related to economic growth rate, meaning that an increase in the independent variables should lead to corresponding increase in economic growth rate. The error term maintains zero mean and constant variance.

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METHODS/TOOLS OF DATA ANALYSIS

Descriptive Statistics

Descriptive statistics are used to designate the essential characteristics of the data in a study. They display simple synopses about the data and the measures. Put in a table, they provide the basis of almost every quantitative analysis of data. Descriptive Statistics are used to present quantitative descriptions in a manageable form. In a research study we may have lots of indicators, which descriptive statistics help us to simplify in a meaningful manner.

Estimation Techniques

Autoregressive Distributed lag (ARDL) Model

The study employs ARDL bounds approach to co-integration tests to determine the long run relationship between the variables. This model used the ARDL approach of co integration, following the fact that all the variables are not integrated of the same order.

It is useful to determine the underlying properties or processes that generate our time series variables, whether the variables are stationary or non-stationary. Macro econometric data often appear to possess a stochastic trend that can be removed by differencing the variables.

The unit root test will be carried out using the Augmented Dickey Fuller test (ADF) and Phillip Perron (PP). The results of the unit root tests will also show if the series are stationary in first differences I (1) or series in levels have unit root—I (0) or both. The co-integration test will not be based on the Johansen/Juselius approach, but on the advanced Autoregressive Distributed Lag (ARDL). Recently, a series of studies by Pesaran and Shin (1996); Pesaran and Pesaran (1997); Pesaran and Smith (1998) and Pesara et al (2001) have introduced an alternative co-integration technique known as the Autoregressive Distributed lag (ARDL) model/bound F-test.

This technique has a number of advantages over and above the Johansen co- integration technique. First, the ARDL model is the more statistically significant approach to determining the co-integration relationship in small samples (Ghalak and Siddiki, 2001), while the Johansen co-integration technique requires large data samples for validity. Second, the Johansen approach of co-integration requires all of the repressors to be integrated of the same order, while the ARDL approach can be applied whether the regressors are I (1) and I (0). This means that the ARDL approach avoids the pre-testing problems associated with standard co-integration, which requires that the variables be already classified into I (1) or I (0) (Pesaran et al, 2001). As BahmaniOskooee (2004) explains, the first step in any co-integration technique is to determine the degree of integration of each variable in the model but this depends on which unit root test one uses, and this may further include the Augmented Dickey Fuller and the Philips Perron tests. Therefore, it can be incorrectly concluded that a unit root is present in a series that is actually stationary around a onetime structural break (Perron, 1989, 1997). The ARDL approach is useful because it avoids these problems. Again, with the ARDL approach, it becomes possible that different variables have different optimal numbers of lags, which is not applicable in the Johansen approach. Accordingly, the ARDL approach requires the

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following two steps. In the first step, the existences of any long-term relationship among the variables of interest are determined using an F test. The second step of the analysis is to estimate the coefficient of the long run relationship and determine their values, followed by the estimation of the short – run elasticity of the variables with the error correction representation of the ARDL model. By applying the ECM version of ARDL, the speed of adjustment to equilibrium will be determined.

Unit Root Test

It is used to test for the stationarity of the time series data. This involves testing of the order of integration of the individual time series under consideration. These tests are initially performed at levels and then in first difference form. Three different models with varying deterministic components are considered while performing the tests. These are (1) model with an intercept which assumes that there are no linear trends in the data such that the first differenced series has zero mean (2) model with a linear trend which includes a trend stationary variable to take account of unknown exogenous growth and (3) a model which neither includes a trend nor a constant. In addition, the unit root test will be carried out using the Augmented Dickey Fuller test (ADF). The results of the unit root tests will also show if the series are stationary in first differences I (1) or series in levels have unit root—I (0) or both.

Granger-Causality Test:

It is used to test for the long run relationship between the variables. And a long run relationship is found on these variables in which we will study. According to Granger (1969), Y is said to "Granger-cause" X if and only if X is better predicted by using the past values of Y than by not doing so with the past values of X being used in either case.

Methods of Hypotheses Testing

Probability Values (Pv): This is used to evaluate the level of significant of each independent variable in the model. If the Pv < 0.05 for example, it implies that the repressor in the equation is statistically significant at 5% level. Otherwise, it is not significant at that level.

F-Statistic: This tests the overall statistical significance of the regression equation at a certain probability level. This is done by formulating null and alternative hypothesis, H_0 and H_1 respectively. H_0: $\beta_1 = 0$, H_1: $\beta_1 \neq 0$. If the calculated f-value is greater than the theoretical F-Statistic, we reject H0 and concluded that the overall regression is well established at 5% level of significance.

Standard Error: This is denoted as (S.E) and it is a measure of the dispersion of the estimates around the true parameter. The larger the value of the S.E of a parameter, the less reliable it is and vice-versa.

Goodness of Fit of the Estimated Model

Coefficient of determination (R^2): This consists of the explained and unexplained variation. It is used to test the goodness of fit of the estimated regression model. It ascertains the power of explanatory variations in the value of the dependent variables. The value of R^2 is between zero

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and one i.e ($0<R^2>1$). R^2 of very high value (at least 0.5) is required for a very good model and below 0.5 suggest a poor estimated regression model.

Residual Diagnostic Tests

Residual tests describe the distribution and characteristics of the residuals in the model. These tests are very important, for they determine the credibility of the conclusions drawn from a model. The researcher follows the standard practice of testing the residuals for serial correlation, normality distribution and heteroscedasticity.

Test of Heteroscedasticity

This test is used to verify the assumption of equal spread of the error variance (homoscedastic) between members of the same series of observations. The Breusch-Godfrey-Pagan heteroscedasticity test (with no cross term) was employed in the test.

Test of Normality

This test is used to verify whether the error term is normally distributed. The Jacque-Bera(JB) test was be used to verify this assumption.

Test of Autocorrelation

This test is used to verify the randomness of the error term between members of the same series of observations. As a result of the numerous assumptions and problems associated with the conventional Durbin-Watson (DW) test, the Breusch-Godfrey (LM) test was employed to verify this hypothesis.

DATA PRESENTATION, ANALYSIS, AND INTERPRETATION OF RESULTS

Table 4.1: Descriptive Statistics of All Variables

	EGR	GPR	EGP	GEH	GEE
Mean	2.947538	56.79318	18.09114	34.00259	44.90909
Median	3.333813	65.60000	17.95000	15.40400	32.65000
Maximum	15.32916	71.60000	29.80000	111.7000	118.6000
Minimum	-13.12790	27.20000	10.50000	0.092000	0.100000
Std. Dev.	5.473919	13.80181	3.985111	40.27905	43.28644
Skewness	-1.034251	-0.767314	0.732312	0.856663	0.213989
Kurtosis	5.105012	2.472579	3.830056	2.102625	1.300526
Jarque-Bera	15.96793	4.827634	5.195886	6.858075	5.630861
Probability	0.000341	0.089473	0.074427	0.032418	0.059879
Sum	129.6917	2498.900	796.0100	1496.114	1976.000
Sum Sq. Dev.	1288.443	8191.068	682.8876	69763.29	80569.80
Observations	45	45	45	45	45

Source: Author's Computation (2026) using E-views 12

Where:

EGR= Economic growth rate

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GEH= Government Expenditure on Health

GEE = Government Expenditure on Education

GPR= Poverty Rate

EGP= Employment Generation rate

Interpretation of Table 4.1

Table 4.1 above presents the summary statistics of the individual variables under consideration which include Economic growth rate (EGR), Government Expenditure on Health (GEH), Government Expenditure on Education (GEE), Poverty rate (GPR) and Employment Generation rate (EGP). Each variable of interest contained 45 observations. It can be observed that Poverty rate (GPR) has the largest mean and median scores closely followed by the mean and median scores of Government Expenditure on education (GEE) and Government Expenditure on health (GEH). Next is the mean and median scores of employment generation rate (EGP), while Economic growth rate (EGR) recorded the smallest mean score during the period under review.

Next is the maximum values analysis of all the variables under study, table 4.1 further reveals that Government Expenditure on education (GEE) recorded the largest maximum score closely followed by the maximum score of Government Expenditure on Health (GEH). The third in that order of ranking is the maximum value of poverty rate (GPR), while the fourth is the maximum score of employment rate (EGP). Economic growth rate (EGR) has the smallest maximum score during the period under review.

For the minimum values analysis, Economic growth rate (EGR) recorded the lowest minimum value, while Government Expenditure on Education (GEE) has the largest minimum score. For the standard deviation analysis, table 4.1 also indicates that all the variables except Economic growth rate (EGR) and employment rate recorded high standard deviation values. This implies that these variables are prone to volatility, fluctuations and economic shocks, while Economic growth rate (EGR) and employment generation rate (EGP) with low standard deviation values are relative stable and free from volatility. In addition, the skewness of all the variables except (EGR and GPR) with negative coefficient which implies that the values fall within the zero bound for a normal distribution. Also, it suggests that the variables in question were positively skewed and normally distributed, while (EGR and GPR) with negative value suggest that economic growth rate and poverty rate were negatively skewed and non-normally distributed.

Next is the kurtosis analysis which revealed that EGR and EGP whose values are greater than three (3) suggesting that these variables has normal kurtosis and they are Leptokurtic in nature, while the remaining variables (GEE, GEH and GPR) appeared to be mesokurtic in nature as the kurtosis values are less than three (3).

Finally, table 4.1 shows that Economic growth rate (EGR) and Government Expenditure on Health (GEH) were normally distributed as the p-values of their Jarque-Bera statistics are less than 0.05, while Government expenditure on education, employment generation rate and poverty rate were not normally distributed.

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Unit Root Tests

Table 4.2 presents the unit root test results of the variables examined in this study using Augmented Dickey Fuller techniques. The essence of the unit root test is to examine the stationarity properties of the variables of interest which guide in choosing the appropriate technique of analysis to avoid a misleading or spurious regression result.

Table 4.2: ADF Unit root test Results

Variable	ADF-Statistic	Critical value 1%	Critical value 5%	Critical value 10%	Oder of Integration	Interpretation
EGR	-2.418795	-2.619851	-1.948686	-1.612036	I(0)	Stationary at Level
GPR	-6.474455	-2.619851	-1.948686	1.612036	I(1)	Stationary at 1st difference
EGP	-6.275671	-2.621185	-1.948886	-1.611932	I(1)	Stationary at 1st difference
GEH	-6.245817	-2.619851	-1.948686	-1.612036	I(1)	Stationary at 1st difference
GEE	-5.646993	-4.205004	-3.526609	-3.194611	I(1)	Stationary at 1st difference

Source: Authors' Computation (2025) from E-views 12

Where:

EGR= Economic growth rate

GEH= Government Expenditure on Health

GEE = Government Expenditure on Education

GPR= Poverty Rate

EGP= Employment Generation rate

Interpretation of Table 4.2

Table 4.2 above shows the summary of the Augmented Dickey Unit root test result. It presents the level of integration of the variables. The individual unit root test is computed for stationarity using the Nigerian data from 1980-2024. The table indicates that Economic growth rate (EGR) was stationary at level while Government Expenditure on Health (GEH), Government Expenditure on Education (GEE), Poverty rate (GPR) and Employment Generation rate (EGP) were stationary at first difference.

Table 4.3: ARDL Long Run and Co-Integration Bounds Test

ARDL Long Run Form and Bounds Test				
Dependent Variable: D(EGR)				
Selected Model: ARDL(2, 0, 4, 0, 4)				
Case 2: Restricted Constant and No Trend				
Date: 06/19/26 Time: 17:54				
Sample: 1980 2024				
Included observations: 38				
Conditional Error Correction Regression				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.987540	7.342812	0.134491	0.8942

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EGR(-1)*	-0.771885	0.219499	-3.516578	0.0019
GPR**	0.114533	0.075196	1.523120	0.1414
EGP(-1)	-0.248664	0.265452	-0.936760	0.3586
GEH**	-0.068928	0.034613	-1.991384	0.0584
GEE(-1)	0.026193	0.036520	0.717222	0.4805
D(EGR(-1))	-0.299781	0.175766	-1.705567	0.1016
D(EGP)	0.191125	0.190804	1.001684	0.3269
D(EGP(-1))	0.545085	0.189166	2.881516	0.0084
D(EGP(-2))	0.281592	0.178068	1.581373	0.1274
D(EGP(-3))	0.204261	0.150435	1.357804	0.1877
D(GEE)	0.086390	0.098584	0.876305	0.3899
D(GEE(-1))	0.111068	0.073009	1.521289	0.1418
D(GEE(-2))	0.145606	0.069582	2.092601	0.0476
D(GEE(-3))	0.150070	0.080560	1.862847	0.0753
* p-value incompatible with t-Bounds distribution.				
** Variable interpreted as Z = Z(-1) + D(Z).				
Levels Equation				
Case 2: Restricted Constant and No Trend				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
GPR	0.048381	0.029932	2.249758	0.0302
EGP	-0.322152	0.371399	-0.867401	0.3947
GEH	-0.089299	0.037216	-2.399489	0.0249
GEE	0.033933	0.042442	0.799527	0.4322
C	1.279388	9.516851	0.134434	0.8942
EC = EGR - (0.1484*GPR -0.3222*EGP -0.0893*GEH + 0.0339*GEE + 1.2794)				
F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	**Value**	**Signif.**	**I(0)**	**I(1)**
			Asymptotic: n=1000	
F-statistic	3.573496	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37
Actual Sample Size	38		Finite Sample: n=40	
		10%	2.427	3.395
		5%	2.893	4
		1%	3.967	5.455
			Finite Sample: n=35	
		10%	2.46	3.46
		5%	2.947	4.088
		1%	4.093	5.532

Source: Author's Computation (2026) using E-Views 12

Interpretation of Table 4.3

Table 4.3 shows that there is a co-integrating relationship between the dependent variable, EGR, and the independent variables (GEE, GEH, GPR and EGP). This decision is based on the fact that the computed F-Statistic (3.5735) exceeds the upper and lower bounds critical value at the 5% significance level. This further implies that there is a long-run equilibrium

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relationship between the dependent variable and the independent variables during the period under review.

In addition, the ARDL long-run result indicates that Government Expenditure on Health had a negative and significant impact on economic growth in Nigeria, while Government Expenditure on Education had a positive and insignificant impact on the economic growth in Nigeria during the period under consideration. Findings also revealed that Government poverty reduction programmes had positive and significant impact on economic growth in Nigeria whereas, employment generation rate impacted negatively and insignificantly on the economic growth in Nigeria.

Table 4.4: ARDL Short-Run Regression Analysis

Dependent Variable: EGR				
Method: ARDL				
Date: 06/19/26 Time: 17:49				
Sample (adjusted): 1987 2024				
Included observations: 38 after adjustments				
Maximum dependent lags: 4 (Automatic selection)				
Model selection method: Akaike info criterion (AIC)				
Dynamic regressors (4 lags, automatic): GPR EGP GEH GEE				
Fixed regressors: C				
Number of models evalulated: 2500				
Selected Model: ARDL(2, 0, 4, 0, 4)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.***
EGR(-1)	-0.071666	0.174816	-0.409953	0.6856
EGR(-2)	0.299781	0.175766	1.705567	0.1016
GPR	0.114533	0.075196	1.523120	0.1414
EGP	0.191125	0.190804	1.001684	0.3269
EGP(-1)	0.105295	0.171171	0.615147	0.5445
EGP(-2)	-0.263493	0.160001	-1.646817	0.1132
EGP(-3)	-0.077331	0.163277	-0.473620	0.6402
EGP(-4)	-0.204261	0.150435	-1.357804	0.1877
GEH	-0.068928	0.034613	-1.991384	0.0584
GEE	0.086390	0.098584	0.876305	0.3899
GEE(-1)	0.050871	0.115479	0.440523	0.6637
GEE(-2)	0.034538	0.100949	0.342136	0.7354
GEE(-3)	0.004464	0.110207	0.040502	0.9680
GEE(-4)	-0.150070	0.080560	-1.862847	0.0753
C	0.987540	7.342812	0.134491	0.8942
R-squared	0.625199	Mean dependent var		4.237883
Adjusted R-squared	0.397059	S.D. dependent var		3.722223
S.E. of regression	2.890280	Akaike info criterion		5.247966
Sum squared resid	192.1356	Schwarz criterion		5.894381
Log likelihood	-84.71135	Hannan-Quinn criter.		5.477955
F-statistic	2.740417	Durbin-Watson stat		1.920513
Prob(F-statistic)	0.015546			
*Note: p-values and any subsequent tests do not account for model selection.				

Source: Author's Computation (2026) using E-Views 12

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Interpretation

Similarly, the ARDL short run result shows that Government Expenditure on Health had a negative and significant impact on economic growth in Nigeria, while Government Expenditure on Education had a positive and insignificant impact on the economic growth in Nigeria during the period under consideration. Findings also revealed that Government poverty reduction programmes had positive and significant impact on economic growth in Nigeria whereas, employment generation rate impacted negatively and insignificantly on the economic growth in Nigeria. Table 4.4 further revealed that the coefficient of determination is about 0.63, this suggests that 63 percent of the fluctuations in economic growth be accounted for by variations in all the independent variables, while the remaining 37 percent unaccounted for is captured by the error term. It implies the estimated model has a good fit. The F-statistic p-value (F=0.01) is also significant and suggest that all the independent variables are jointly statistically significant. Finally, the DW statistic (D-W=1.9), approximately two (2) shows an absence of autocorrelation in the estimated model.

Table 4.5: ARDL Error Correction Regression

ARDL Error Correction Regression				
Dependent Variable: D(EGR)				
Selected Model: ARDL(2, 0, 4, 0, 4)				
Case 2: Restricted Constant and No Trend				
Date: 06/19/26 Time: 17:57				
Sample: 1980 2024				
Included observations: 38				
ECM Regression				
Case 2: Restricted Constant and No Trend				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
D(EGR(-1))	-0.299781	0.126602	-2.367903	0.0267
D(EGP)	0.191125	0.126951	1.505503	0.1458
D(EGP(-1))	0.545085	0.145311	3.751165	0.0010
D(EGP(-2))	0.281592	0.147884	1.904138	0.0695
D(EGP(-3))	0.204261	0.125356	1.629452	0.1168
D(GEE)	0.086390	0.067177	1.286002	0.2112
D(GEE(-1))	0.111068	0.061043	1.819519	0.0819
D(GEE(-2))	0.145606	0.058595	2.484982	0.0207
D(GEE(-3))	0.150070	0.065443	2.293145	0.0313
CointEq(-1)*	-0.771885	0.151083	-5.109017	0.0000
R-squared	0.702821	Mean dependent var		0.089059
Adjusted R-squared	0.607299	S.D. dependent var		4.180169
S.E. of regression	2.619539	Akaike info criterion		4.984808
Sum squared resid	192.1356	Schwarz criterion		5.415752
Log likelihood	-84.71135	Hannan-Quinn criter.		5.138134
Durbin-Watson stat	1.920513			
* p-value incompatible with t-Bounds distribution.				
F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	**Value**	**Signif.**	**I(0)**	**I(1)**
F-statistic	3.573496	10%	2.2	3.09

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K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Source: Author's computation (2026) using E-Views 12

Table 4.5 revealed that the lagged coefficient of the Error Correction term (ECT(-1)) i.e, CointEq(-1)* is negative, less than one and statistically significant at 5% as captured by a probability value of 0.0000. The coefficient of the ECT(-1) implies that once there is disequilibrium in the system or sector, it will take an average of 77% to restore the long run relationship between the dependent variable (EGR) and independent variables (GEH, GEE, GPR and EGP). Table 4.5 further indicates that the coefficient of determination is about 0.70, this suggests that 70 percent of the fluctuations in EGR can be accounted for by variations in all the independent variables, while 30 percent of the unaccounted variations were captured by the error term. It implies that the estimated model has a good fit. Finally, the DW statistic (D-W=1.9), approximately two (2) shows an absence of autocorrelation in the model.

4.6 Post Estimation

Table 4.6: Diagnostic Analysis

Type	Diagnostic Test	F-stat.	Probability
Breusch-Godfrey LM Test	Serial Correlation	0.253611	0.7783
Breusch-Pagan-Godfrey Test	Heteroskedasticity	1.583624	0.1590
Ramsey RESET Test	Specification	0.719165	0.4056
Jarque-Bera Test	Normality	0.148745	0.923826

Source: Author's computation (2026) using E-Views 12

The reliability of the regression results from our dynamic model was assessed through various diagnostic checks, the outcomes of which are presented in Table 4.6. The tests are: Using the Breusch-Godfrey Test to check for serial correlation and the Breusch-Pagan-Godfrey Test to check for heteroskedasticity, validation of model specification via the Ramsey RESET Test, and evaluation of normality using the Jarque-Bera Test were conducted to ensure the robustness of the regression results. The F-stats and probabilities obtained reflect positivity as they all suggest the rejection of null hypothesis for each category of diagnostic tests. Explicatively, the serial correlation test result shows the absence of serial correlation as an econometric problem, BPG Test shows that the model is not characterized by homoskedasticity, Ramsey REST Test result justifies the model specification's goodness as previously established and given that the probability value of each variable is greater than 0.05 or 5%, the Jarque-Bera test indicates that the variables are regularly distributed with its probability value less 0.05.

Table 4.7: Pairwise Granger Causality Tests

Pairwise Granger Causality Tests			
Date: 06/19/26 Time: 18:07			
Sample: 1980 2024			
Lags: 2			
Null Hypothesis:	**Obs**	**F-Statistic**	**Prob.**
GPR does not Granger Cause EGR	43	0.09034	0.9138

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EGR does not Granger Cause GPR		2.72839	0.0781
EGP does not Granger Cause EGR	43	0.81034	0.4522
EGR does not Granger Cause EGP		4.25243	0.0215
GEH does not Granger Cause EGR	43	0.07324	0.9295
EGR does not Granger Cause GEH		0.46247	0.6332
GEE does not Granger Cause EGR	43	0.23681	0.7904
EGR does not Granger Cause GEE		0.14363	0.8667
EGP does not Granger Cause GPR	43	0.41345	0.6643
GPR does not Granger Cause EGP		1.67819	0.2003
GEH does not Granger Cause GPR	43	1.67591	0.2007
GPR does not Granger Cause GEH		1.26445	0.2940
GEE does not Granger Cause GPR	43	2.09607	0.1381
GPR does not Granger Cause GEE		1.00034	0.3780
GEH does not Granger Cause EGP	43	1.62594	0.2101
EGP does not Granger Cause GEH		0.95787	0.3928
GEE does not Granger Cause EGP	43	1.71090	0.1955
EGP does not Granger Cause GEE		0.39073	0.6795
GEE does not Granger Cause GEH	43	2.61885	0.0871
GEH does not Granger Cause GEE		6.14323	0.0052

Source: Author's computation (2026) using E-Views 12

Table 4.7 presents the Granger causality test result. We attempt to establish the causal relationship among the variables under study as well as the direction of the causality if any. The results show that unidirectional relationship runs between Employment generation rate and Economic growth in Nigeria, while there is no causality between economic growth and other remaining independent variables (GEE, GEH, GPR).

In other words, Economic growth does not Granger Cause Government Expenditure on Health (GEH), and Government Expenditure on Health (GEH) does not Granger Cause Economic growth. Also, Economic growth does not Granger Cause Government Expenditure on Education and Government Expenditure on Education does not Granger Cause Economic growth. Economic growth does not Granger Cause poverty rate and poverty rate does not Granger Cause Economic growth. This is evidence by the p-values of the variables as shown in the above table 4.7

Policy Implication of Findings

The results of this study have important policy implications. In order to address the challenges of poverty, unemployment, insufficient Government spending in both education and health sectors in Nigeria, Government at all level should embark on policies aimed at boosting both capital and recurrent expenditures. Also, Government and other relevant stakeholders should initiate measures aimed at strengthening public private partnership as such measures will significantly boost education and health sectors financing and by extension support government efforts towards addressing the rising cases of poverty and youth unemployment in Nigeria. Furthermore, Government and other key stakeholders must adopt the appropriate fiscal and monetary policies measures aimed at addressing the challenges of insufficient health and education expenditures in Nigeria.

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Finally, with the implementation of appropriate government policies backed-up with increased government expenditures, human capital development will receive a boost and its impact on the Nigeria economy will be positive and significant through poverty reduction programmes and job creation initiatives.

CONCLUSION AND RECOMMENDATIONS

Conclusion

In line with the above findings, the study concludes that the independent variables; Government Expenditure on Health (GEH), Government Expenditure on Education (GEE), poverty rate and employment generation rate are among the key human capital development indicators considering their positive/negative and significant/insignificant impacts on the economic growth rate in Nigeria during the period under review.

Also, the empirical results show that the independent variables under study have the potential to significantly contribute to the economic growth in Nigeria if fully harnessed and implemented by the key stakeholders. Therefore, it is expected that Government, policy makers and other relevant stakeholders should increase budget allocations to health and education sectors in order to reduce the high rate of poverty and unemployment currently ravaging the Economy.

Based on the findings, Government expenditures on health and education have been identified as key human capital development indicators that would stimulate growth in the economy, it is therefore expedient that the government increases its spending on these indicators so as to improve the human capital development index and also boost economic growth in Nigeria.

Recommendations

Based on the findings, the following recommendations are made:

i. The Government, policy makers and other relevant stakeholders should increase the expenditure on health as this can boost the health status of the people which is likely to fill the health care delivery service gap already being experienced in the country.

ii. The Federal, State governments and other key stakeholders should initiate measures aimed at addressing the rising case of poverty through youth empowerment programmes. This measure will serve as a boost to human capital development in Nigeria.

iii. Efforts should be made by Government and other relevant stakeholders to ensure that employment generation programmes are fully implemented as such measure will address the problem of youth unemployment in Nigeria.

iv. Government and other key stakeholders should embark on policies geared towards increasing budget allocation to education sector as such measures will boost human capital development in Nigeria.

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