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EFFECT OF HUMAN CAPITAL DEVELOPMENT ON ECONOMIC GROWTH IN NIGERIA

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ABSTRACT

This study examined the effect of human capital development on economic growth in Nigeria between 1999 and 2025, with particular attention to how insecurity and corruption shape the returns to government investment in education and health. The broad objective was to critically evaluate this relationship, disaggregated into four specific objectives: examining the contribution of government educational expenditure to economic growth, evaluating the effect of government health expenditure on economic growth, examining the effect of educational expenditure on economic growth in an insecure society, and determining the effect of health spending on economic growth in a corrupt society. It also adopted an ex-post facto research design, relying on quarterly secondary data (1999Q1-2025Q4) sourced from the World Bank Development Indicators, World Governance Indicators, the National Bureau of Statistics and the Central Bank of Nigeria Statistical Bulletin. Two models were estimated using the Autoregressive Distributed Lag (ARDL) bounds testing approach: Model 1 examined the effect of human capital development on growth in an environment devoid of corruption and insecurity, while Model 2 introduced interaction terms capturing corruption and insecurity. Unit root tests confirmed that the series were a mix of I(0) and I(1), satisfying the pre-condition for ARDL estimation, and the ARDL Bounds Test (F-statistic = 4.947168) confirmed a unique long-run cointegrating relationship among the variables. In Model 1, government health expenditure exerted a positive and statistically significant long-run effect on economic growth, while government educational expenditure showed a statistically significant but negative long-run effect; the error correction term (-0.128798) indicated that roughly seven years and seven months are required for the system to return to long-run equilibrium following a shock. In Model 2, once corruption and insecurity were introduced into the model, all three human capital indicators examined—education, health and life expectancy—turned adverse for economic growth. The study concludes that government efforts to build human capital for stronger economic growth in Nigeria are being undermined by the co-existence of rising insecurity and corruption. It recommends a robust monitoring

and evaluation system for education and health funding, prioritised investment in resilient and accessible education and healthcare systems in vulnerable and conflict-affected areas, stronger public-private partnerships, and the urgent strengthening of anti-corruption institutions such as the Economic and Financial Crimes Commission (EFCC) and the Independent Corrupt Practices Commission (ICPC).

Keywords: *Human capital development, economic growth, corruption, insecurity, ARDL, Nigeria*

1. INTRODUCTION

In recent time, high human capital investment has become a common feature of more developed countries. Less developed countries are therefore investing in people in order to produce high level manpower required to augment their labour force. Human capital development is thus associated with investment in man and his development as a creative and productive resource (Jhingan, 2010; Kanayo, 2013). A country's economic development refers to the process of creating and utilizing physical, human, financial, and social assets to generate improved and broadly shared economic well-being and quality of life for the citizens (Seidman, 2005).

According to Todaro and Smith (2006), this desired state can better be realised through investment in education and health which are the two most important sources of human capital, yielding knowledge capital and health capital respectively. In the past, the term development brought to mind pictures such as well constructed roads, dams, bridges etc., but today, the world is focusing on investing in people to achieve a long-term development. Before now also, wealth is only measured based on physical and natural capital such as land, water and institutions and how financial structures contribute to wealth. But now, if countries want to be wealthy tomorrow, they have to invest in their people today (Georgieva, 2019).

Human capital investment is therefore critical for all countries at all income levels, while the poorest or most fragile countries face big hurdles in improving their education and health outcomes. Even the countries which possess the world's strongest human capital must stay focused on investing in their people if they want to remain successful and competitive in the global economy (World Bank, 2018). The Asian Tigers and Singapore are examples of nations whose economies experienced sharp improvement via substantial investment in human capital.No doubt, Nigeria has joined the rest of the world in pursuing growth and development through investment in human capital.

Despite the growing awareness of the importance of human capital for achieving sustainable growth and development, budgetary allocations to education and health have continued to fall short of UN's prescribed 26 per cent to education and WHO's recommendation of 5 per cent of GDP to health. For example, between 1995 and 2018, total government expenditures on education, as a percentage of the total expenditures, were higher in 1995(13%), 2005(13.9%) and 2009(13.8%) than in 2002(7.1%), 2017(8.4%) and 2018(8.3%) (CBN, 2018; WDI, 2018). Similarly, total government expenditures on health, as percentages of nominal GDP between 1995 and 2018, fall within 0.80 per cent - 0.29 percent On the contrary, decreasing government expenditures on education and health were accompanied by increasing household expenditures on education and health. Total household expenditure on education increased from ₦17.32b in 1983 to ₦3618.2b in 2018, representing an increase of 99.5 per cent (UNESCO, 2018). Similarly, total household expenditure on

health increased from ₦16.65b in 1985 to ₦3041.9b in 2018, representing an increase of 99.5" per cent (CIA World Factbook, 2018).

Increasing investment in human capital and low indices of economic development has raised a serious issue of paradox. This paradox clearly manifest in the stunted growth of malnourished under-five children in Nigeria which negates the achievement of the target of SDG. In 1990, the country recorded about 50.5 per cent stunted under- five children, 43.8 per cent in 1993, 32.9 in 2015, and its lowest of 32.0 per cent in 2018 (WDI, 2018). Nigeria has the second highest burden of stunted children in the world (NBS, 2018). Stunted children fall sick more often, miss opportunities to learn, perform less at school and grow up more likely to suffer from chronic diseases and are economically disadvantaged. Children who are not stunted are 33 per cent more likely to escape poverty than their stunted peers (Sub-Saharan Africa Report on Human Capital, 2018).Another indicator of economic development is under-five mortality.

This indicator which is also one of the targets of SDG is unimpressively low in Nigeria. In 2018, the mortality rate of under-five children in Nigeria stood at 119.90 (WDI, 2018). This has placed Nigeria as the second largest out of 188 countries in the world (UN Inter-agency Group for child mortality estimation, 2018). Also, GDP per capita, a measure of economic welfare, is quite low. The foregoing clearly that the degree and nature of relationship among government investment in human capital, household investment in human capital, economic growth and economic development in Nigeria are not easily discernible. Thus, it has become imperative that the present study be embarked upon in order to determine the extent to which public and private investment in human capital have contributed to economic development.Studies in this area are not entirely new.

While there is a great deal of studies on human capital and economic growth in Nigeria, few studies on human capital investment and economic development have tried to establish a relationship between them. Ilegbinosa (2013), Shobande, et. al (2014), Halidu, (2016), Omodero and Azuibuike (2016), Adetula, et al (2017), Njoku and Onyebula (2017), Andabai and Eze (2017), Amadi and Alolote (2019), among others, had presented conflicting results on the degree and nature of relationship between human investment and economic development. Besides, these studies were beset with shortcomings which justify the present study. Primary data collected by Ilegbinosa from 120 respondents were grossly inadequate for a study of this scale. Also, the use of GDP by Andabai and Eze, Omodero and Azubike, and Amadi and Alolote could not have yielded safe inferences since GDP is not a good proxy for economic development.

In another study, Omodero and Azubike (2016), and Adetula et al (2017) focused on education which is just one aspect of human capital and measured economic development using GDP. In their own study, Halidu (2016) and Njoku and Onyebula (2017) focused on education system using content and descriptive analysis. Certainly, the current efforts in this paper would obviate the shortcoming of the earlier studies.Thus, the present study focused on a detailed analysis of the relationships among public human capital investment, private human capital investment and economic development. No study which does not take into cognizance the role of public sector, private sector and Non-Governmental Organisations in human capital development can ever be expected to solve the problems of inadequate human capital. Public investment in human capital is" only a component of a country's aggregate financial investment in human capital. It is in this context, therefore, that the present study derives its strength considering the global approach employed by including household expenditures on education and health which hitherto had been neglected.

1.1 Objectives of the Study

The broad objective of this study is to critically evaluate the effect of human capital development on economic growth in Nigeria. However, the specific objective are to:

i. examinethe contribution of government educational expenditure on economic growth in Nigeria.
ii. evaluate the effect of government health expenditure on economic growth in Nigeria.
iii. examine the effect of educational expenditure on economic growth in an insecuredNigerian society
iv. determine the effect of health spending on economic growth in acorrupt Nigerian society

1.2 Research Questions

The following research questions guided this study

i. what is the effect of government educational expenditure on economic growth in Nigeria?
ii. what is the effect of government health spending on economic growth in Nigeria?
iii. what isthe effect of educational expenditure on economic growth in an insecured Nigerian society?
iv. what is the effect of health spending on economic growth in acorrupt Nigerian society?

1.3 Hypotheses

This study is guided by the following hypotheses:

i. Government educational expenditure has no significant effect on economic growth in Nigeria
ii. Government health spending exerts no significant effect on economic growth in Nigeria
iii. There is no positive outcome from the interaction between government education spending and insecurity on economic growth in Nigeria.
iv. There is no positive outcome from the interaction between government health spending and corruption on economic growth in Nigeria.

2. LITERATURE REVIEW

2.1 Human capital development

According to Harbison, (1973), Human capital development was a way to fulfill the potential of people by enlarging their capabilities, and this necessarily implies empowerment of people, enabling them to participate actively in their own development. Human capital development is also a means since it enhances the skills, knowledge, productivity and inventiveness of people through a process of human capital formation broadly conceived. Thus, human capital development is a people centered strategy, and not goods centered or production centered strategy of development. What really matters is the empowerment of people to identify their own priorities and to implement programmes and projects of direct benefit to them. This in turn implies the active participation of people in the development process and the consequent need to construct institutions that permit and indeed encourage that participation.

In human capital development, education and health are essential. Education is concerned with the cultivation of the whole person including intellectual, character and psychomotor development. It is the human resources of any nation, rather than its physical capital and material resources, which ultimately determine the character and pace of its economic and social development. According to Harbison:

> "Human resources constitute the ultimate basis for the wealth of nations. Capital and natural resources are passive factors of production; human beings are the active agents who accumulate capital, exploit natural resources, build social, economic and political organization, and carry forward national development. Clearly, a country which is unable to develop the skills and knowledge of its people and utilize them effectively in the national economy will be unable to develop anything else" (Harbison, 1973, p.3).

Education occupies an important place in most plans for economic and social development. Whichever way one looks at it, the education sector is important in human development as a supplier of the trained manpower and it is a prerequisite for the accomplishment of other development goals. Also, it is the main sector through whose national identity goals and aspirations are given meaning and reality among the people.

Todaro and Smith (2011) states that human capital is the productive investments embodied in human persons, including skills, abilities, ideas, health and locations, often resulting from expenditures on education, on – the – job training programmes and medical care. Becker (1967) refers to it as the abilities and qualities of people that make them productive, knowledge to him is the more important of these, although other factors like a sense of punctuality to the state of someone's health, also matter. As construed by the organization of economic co-operation and development (OECD), it is the aptitude, abilities, versatility, and other features encapsulated in people that are noteworthy to productive activities (OECD, 1998).

As perceived by Gbosi (2007), manpower is the level of aptitude and efficient talents imbedded in an individual that plays in the arena of production. Human capital development which is conterminous with human capital formation, human resource development, investment in human capital, on the other hand refers to the process of acquiring and increasing the number of persons who have skills education and experience which are critical for economic and political development of a country, Wilson (2017). Human capital development according to Okojie (1995) refers to the process of acquiring and increasing the number of persons who have the skills, education and experience that are cited for economic growth and development of country's economy.

For Habison (1973), it is the deliberate and continuous process of acquiring requisite knowledge, skills and experiences that applied to produce economic value for suitable national development. It can be achieved through various ways such as; i. Provision of organized formal education at the primary, secondary and tertiary levels. ii. Provision of on-the-job training iii. Migration of individuals and families' iv. Provision of health facilities and services which affect life expectancy, strength, stamina, vigour and vitality of the people. Pupil- Teacher Ratio Pupil- teacher ratio is the average number of pupils or students per teacher at a specific level of education in a given school – year.

It is obtained by dividing the total number of pupils enrolled at the specific level of education by the number of teachers teaching predominantly at that level. A high pupil-teacher ratio suggests that each teacher has to be responsible for a large number of people. In

other words, the higher the pupil-teacher ratio, the lower the relative access of pupils to teachers.

2.1.1 Concept of Economic Growth

Economic Growth as a concept is viewed differently by different scholars, it is generally measured in terms of increase in a nation's Gross Domestic Product (GDP) Maddison in Jhingan (2007), opined that the raising of income levels is generally called economic growth in rich countries and in poor countries it is called economic development. Kindleberger in Jhingan (2007), stated that economic growth means more output, while economic development implies both more output and changes in the technical and institutional arrangement by which it is produced and distributed.

Obadan and Okojie (2010) also conceptualised economic growth as an increased in the average rate of output produced per person annually. In line with that Deweet (2005) saw economic growth as an increased in the net national product in a given period of time. He explained that Economic growth is generally referred to as a quantitative change in economic variables over a period of time. He added that, determinant of economic growth are the availability of Natural resources, Capital formation, Capital- output ratio, Technological progress and entrepreneurship among others.

Jhingan (2007) states that economic growth is related to a quantitative sustained increase in the country's per capita output or income accompanied by expansion in its labour force, consumption, capital and volume of trade. An economy can grow but it may not develop because poverty, unemployment and inequalities may continue to persist due to the absence of technological and structural changes. Therefore, synthesizing insights from these definitions, we define economic growth as a sustained increase in the national income and output of a country over a particular period of time. Hence, once an economy is experiencing sustained increase in output, it is said to have attained economic growth.Synthesizing from the definitions above, human capital represents the investment people make in themselves that enhance their economic productivity. The analysis of investments in health and education is unified in the human capital approach. Human capital is the term use for education, health, and other human capacities that can raise productivity when increased.

2.1.2 Education expenditure

Okoro, (2013) define public expenditure on education as the current and capital public expenditure on education which includes government spending on educational institutions (both public and private), education administration as well as subsidies for private entities (students/households and other privates entities). Owoye, (2007) general government expenditure on education (current, capital, and transfers) is expressed as a percentage of total general government expenditure on all sectors (including health, education, social services, etc.). It includes expenditure funded by transfers from international sources to government. Education, which covers: Pre-primary and primary education, Secondary education, Post-secondary non-tertiary education, Tertiary education, Education not definable by level, Subsidiary services to education R&D education, and Education.

2.1.3 Health Expenditure

Health is another form of human capital that impacts economic growth with its direct effects on health outcomes and labour output. Health outcomes and the level of the economic output of any economy have been proven to have a relationship between them (Alhowaish, 2014). Health spending is categorized into health and health-related expenditures. These expenditures are explained in terms of their aim of improving health irrespective of their primary function (Alhowaish, 2014). According to Alhowaish (2014), health expenditure

comprises of the overall expenses for medical care, community health, activities, prevention, rehabilitation, promotion, health administration and regulation, and capital formation prioritizing an improved health outcome.

Health-related expenditures on the other hand refer to expenditures on health-related functions which are Medical education training, wages & salaries, research & development. This suggests that for health and health-related activities to be effective, there must be an improvement in the efficiency and equity in the allocation of healthcare funds. This conforms to Wagner's law of increasing state activities and Keynesian theory of public expenditure. Wagner's law (Wagner, 1883) explains that during the process of economic growth, the share of public expenditure, and GDP increases.

Wagner is therefore of the opinion that a functional relationship exists between economic growth and the growth of government activities. This higher level of economic growth requires higher levels of public expenditure. Keynesian school of thought believes that expenditure can contribute to economic growth positively. If government expenditure increases, there would be a rise in investment, profitability, and employment due to the effects of the multiplier on aggregate demand. Narrowing down to the health sector, when expenditure increases, the multiplier effect will bring about an increase in disposable income that raises demand for better education, healthcare and improvedhousing facilities. As a result of the increase in demand which will improve the health status that would hasten economic activities and eventually lead to economic growth as healthy people will become more productive.

2.1.4 Theoretical Linkage

The model used in this research work is a modification of the endogenous growth model also called the New Growth Model. Hulten (2000) says that the new growth theories have the assumption that the marginal product of capital is constant rather than in diminishing as in the neoclassical theories of growth. Capital often in the new growth models includes investment in knowledge, research and development of products, and human capital. The convergence theory postulated that developing countries will catch up with developed countries in the long run but today the New Growth Theory (Endogenous Theory) tries to explain why instead of catching up with the developed countries, developed countries are moving away from developing countries in terms of development.

According to the New Growth Theory, the developed countries did not just depend on labour and capital but investment in human capital development through education, good health, and infrastructure. A basic concern of development economies is to explain why per capita income and growth rates differ among countries. Thus, the main motive of the New Growth Theory is to explain differences in growth rates among countries and what are responsible for such differences. Thus, the new growth theory extends the neoclassical theory by making the rate of technological progress or rate of population growth or both as endogenous factors. The new growth theory goes more deeply into ultimate sources of growth and to this connection, it is adopted for this study.

2.2 Empirical Review

Several studies, both in Nigeria and abroad, have been carried out to examine the relevance or importance of human capital development in the achievement of economic growth. There seems to be a consensus from most of these studies that the development of human capital promotes economic growth. A review of some of the empirical literature is provided below:

Hadir, et al. (2015) examined the relationship between human capital development and economic growth in Morocco using annual data from 1973 to 2011. The ordinary least square regression method was adopted using total government expenditure on health and education, the enrolment data of tertiary, secondary and primary schools as proxy for human capital. The study revealed a positive relationship between total government expenditure on education, total government expenditure on health, primary school enrollment, secondary school enrollment and tertiary school enrolment. They therefore recommended that the effort of Government on increasing primary school enrolment through the free compulsory Universal Basic Education should be sustained and the government should invest more and more in Health. Thus improvements in health may increase output not only through labor productivity, but also through the accumulation of capital.

Obi, et al. (2014) also focused on the impact of education expenditure on economic growth as a means of achieving the desired socio-economic change needed in Nigeria using time series data from 1981 to 2012. The Johansen's co-integration analysis and ordinary least square (OLS) econometric techniques were used to analyze the relationship between gross domestic product (GDP) and recurrent education expenditure. Findings indicate that though a positive relationship subsists between education expenditure and economic growth, but a long run relationship does not exist over the period under study. They suggest the improvement of the education system through efficient use of public resources through good governance, accountability and transparency. Also, efforts should be made by policy makers to come up with policies that would check, preserve and protect the plight of educational capital to other countries.

Sulaiman, et al. (2015) equally investigated the impact of human capital and technology on economic growth in Nigeria. They employed annual time series data for the period of 35 years (1975-2010) and applied autoregressive distributed lag approach to cointegration to examine the relationship between human capital, technology, and economic growth. Two proxies of human capital (secondary and tertiary school enrollments) were used in two separate models. Their result revealed that all the variables in the two separate modelswere cointegrated. Furthermore, the results of the two estimated models showed that human capital in form of secondary and tertiary school enrollments have had significant positive impact on economic growth. More so, technology also shows significant positive impact on economic growth. In a nutshell, both human capital and technology are important determinants of growth in Nigeria. Therefore, improvement of the educational sector and more funding for research and development (R&D) to encourage innovations are needed to facilitate Nigeria's sustained economic growth.

Furthermore, Borojo, et al. (2015) analyzed the impact of education and health (human capital) on economic growth from 1980 to 2013 in Ethiopia. Human capital stock is proxied by primary, secondary and tertiary school enrolment. Human capital investment is proxied by expenditure on education and health. The Augmented Dickey Fuller test and Johansen's Co-integration technique were used to test unit root and to validate co-integration among variables, respectively. Their study showed that public expenditure on health and education, primary and secondary school enrolment have positive statistically significant effect on economic growth both in long run and short run. In addition, physical capital has positive whilst inflation has negative effect on economic growth. However, tertiary school enrolment has insignificant effect on economic growth both in long run and short run. Based on theirfindings increasing primary and secondary school enrolment is recommended. In addition, substantial amount of government expenditure should be allocated towards health and education sectors to further increase contribution of the sectors to economic growth.

Ekesiobi, et al. (2016) also examined public sector education investment and manufacturing output in Nigeria. The study employed Augmented Dickey Fuller (ADF) unit root test and Ordinary Least Square (OLS) technique to analyze the relationship betweenpublic educational spending, primary school enrolment rate, per capita income, exchange rate, foreign direct investment and manufacturing output growth. The study revealed that public education spending has a positive but insignificant effect on manufacturing output growth in Nigeria. They recommended among other things, that government should target education spending in ways that favor manufacturing industry growth.

Similarly, Lawanson (2015) investigated the relevance of educational and health components of human capital to economic growth, using a panel data from sixteen West African countries over the period 1980 to 2013. He employed Diff-GMM dynamic panel technique. The empirical findings indicate that coefficients of both education and health have positive statistically significant effects on GDP per capita. The paper affirms the strong relevance of human capital to economic growth of West Africa. He recommended that increased resources and policy initiatives to motivate and enhance access to both health and education by the population should be pursued by policy makers.

Ehimare, et al. (2014) also investigated the Nigerian government Expenditure on Human Capital Development. The level of human capital development, which is a reflection of the level of health and education of a nation affect the level of economic activities in that nation. The unit root test was conducted to determine whether the variables are stationary or not using Phillip Peron test. In order to capture the efficiency of government expenditure on human capital development in Nigeria, the data analysis was conducted using Data Envelopment Analysis involving Input Oriented Variable Return to Scale. The findings of the study revealed that there has been significant reduction in the efficiency of government expenditure since 1990 up till 2011 which has been decreasing. This result therefore could be evidenced from the poor quality and output experienced in the Nigerian education sector. It is therefore recommended that efforts should be made to encourage, promote self-dedication, commitment and service delivery in order to improve on the quality of educational output in Nigeria in terms of quality of human capital and capacity building.

Additionally, Ajadi, et al. (2014) examined human capital development as correlate of economic growth in Nigeria, The descriptive survey research was adopted and multi–stage sampling technique was used to select a total of 200 respondents used for the study. An adopted questionnaire with 0.86 reliability index was used for data collection. Data collected were analyzed using the Pearson's Product Moment Correlation Coefficient. The findings showed that education has a predictive r-value of 0.76 on individual personal income and the nature of job (employment) is related to individual personal income (r=0.64). It, therefore, concluded that economic growth is a function of individual income level and recommended that government should develop appropriate educational policy to provide the human capital need of the society for economic growth

In the same vein, Jaiyeoba (2015) examined human capital investment and economic growth in Nigeria from 1982 to 2011using both trend and empirical approaches on time series data. The investigation revealed that government expenditure on education, health care and economic growths were positively related during the period of investigation. The study recommended that for Nigeria to break out of the vicious cycle of poverty the government must put in place deliberate policy measures that will stimulate investment in education and health carepositively affects economic growth.

Matousek, et al. (2019) re-examine the effects of human capital on countries economic growth using a sample of 100 countries over the period from 1970t to 2014. The empirical findings suggest that the effects of human capital on countries economic growth levels is positively and significant. Parika,et al. (2020) conducted a study to examine the "relationship between human capital and economic growth in India. The study utilizes annual time series data for the period 1980-2017. The major findings of the study suggest that human and physical capital is the major determinants of economic growth. Additionally, Godstime,et al. (2014) examined human capital development and economic growth: The Nigeria experience. The study adopted empirical analysis on quarterly time series data from 1999 to 2012 and discovered that human capital development and national output level are positively and significantly correlated. The work recommended that human capacity should be enhanced through increase educational funding at all levels of governance.

Olatunji et al. (2014) in their own study investigated human capital investment and economic development: The Nigerian experience. Using the ordinary least square method on time series data obtained from the Central Bank of Nigeria's Statistical Bulletin from 1970 to 2011. The finding revealed a negative correction between human capital investment and economic development in Nigeria during the period of investigation and recommended education beyond secondary school enrolment to achieved economic development.

Ahmet (2014) studied long-term impact of human capital investment on gross domestic product for a total of twenty four countries out of which thirteen were developed and eleven were developing countries covering a period of forty years (1970-2010). The study disaggregated human capital into educational expenditures and life expectancy at birth and adopted co integrated panel regression models which includes panels Dynamic Ordinary Least Squares (DOLS) and Fully Modified Ordinary Least Squares (FMOLS) as it method for analysis. The founding of the study indicated that the impact of life expectancy at birth on GDP is determined as higher in the developing countries than the developed countries.

Odo, et al. (2016) in their study conducted a study on the relationship between human capital development and economic growth in Nigeria from 1970 to 2013. The investigation adopted GDP as proxy for economic growth while total government expenditure on health care and educational infrastructures were used as proxies for human capital development. They employed ex-post facto research design to empirically carry out the study. The result revealed that government expenditure on health was negatively related to economic growth while total government expenditure on education had appositive relationship with economic growth and recommended that economic policies that will reduce workers' agitations should be implemented to enhance health workers productivity. Similarly, the health sector should be properly equipped to reduce medical tourism and capital flight.

Yasmin (2017) also investigated the relationship between human capital inequality and globalization in 120 countries using panel regression model between 1970 and 2009. The study unveiled that developing countries do not certainly profit from globalization which is in disagreement with the standard trade theory and that globalization reduces the educational gap in less developing countries while it increase the gap in the more developed countries. The study recommended further findings for the validity and reliability of the standard H-O theory as it concerns the developing countries through isolating the low income from middle-income countries.

In the same vein, Oyewole,et al. (2018) looked at human capital development in Nigeria and its implication for nation building using descriptive approach found that nation-building will be successful if the state experiences self-government for several years in the

presences of a robust economy and recommended that Nigerian educational system should adopt rigorous academic standards and set a benchmarked against standards in developed countries as a strategic intervention that will positively affect the entire human capital development system in the country.

Arash, et al. (2017) in their research investigated effective factors on exports with emphasis on human capital formation in selected twenty developing countries using panel data analysis between 1995 and 2014. The findings of the study revealed that human capital and export were positively related in the twenty countries of study. Similarly, the work discovered that population, capital formation and healthcare costs variables exhibited positive and consequential effect on exports in the twenty countries investigated during the period.

Okafor, et al.(2016) also focused on a detailed analysis of the impact of human capital investment on economic development in Nigeria. Analysis of the data was done using the OLS technique. The study employed two models, the first used GDP per capita as a proxy for economic development, while the second used infant mortality rate as a proxy for economic development. Government recurrent and capital expenditure on education and health were used as proxies to measure human capital investment.From the study, it was discovered that government recurrent expenditure on education, and government capital expenditure on education and health impacted positively on GDP per capita, while government recurrent expenditure on health had a negative impact. Also, all components of human capital investments, except government recurrent expenditure on health, had positive significant impacts on infant mortality rate. Finally, infant mortality rate was more reliable than GDP per capita as an index of economic development.

Furthermore, Idenyi, et al. (2016) examined the effect of human capital development on the growth of the Nigerian economy. Using Johansen's cointegration and the vector error correction model it was discovered that there was a significant long run relationship between human capital development and economic growthGovernment expenditure on education and health had a significant effect on economic growth. While government expenditure on education had a positive relationship with economic growth, the relationship between government expenditure on health and economic growth was negative.

In additionl, Adeyemi, et al. (2016) examined the impact of human capital development on economic growth in Nigeria, using time series data spanning from 1980 – 2013 which were sourced from the World Bank Indicators and National Bureau of Statistics. The study employed ARDL cointegration analysis to estimate the relationship among the variables used. The result revealed that there is positive long-run relationship among the secondary school enrolment, public expenditure on health, life expectancy rate, gross capital formation and economic growth but it was statistically insignificant. The results further revealed that there was negative long-run relationship among primary, tertiary school enrolment, public expenditure on health and economic growth. The study therefore recommended that government should put in place the required education and training policy that would guarantee quality schooling for primary and tertiary education and commit more funds to thehealth sector to enhance human capital development. Attir, et al. (2005) examined the effect of human capitaldevelopment on the economic growth of Nigeria (1999-2019). Education and health care were variables included in measuring human capital development. The authors employed the ARDL model and revealed the presence of a long-run association among the study variable.

Sarah, et al. (2017) examined the impact of human capital development on economic growth in Nigeria with time series data which covers periods 1981-2010. The study Adopted

autoregressive distributed lag (ARDL) framework. The bounds testing analysis indicated existence of co integration between economic growth and human capital development indicators. Findings also show that human capital development indicators had positive impact on economic growth in Nigeriawithin the reviewed periods; however, theirimpacts were largely statistically insignificant.

Adeyemi, et al. (2016) in their study analyzed the effect of human capital development on the economic growth of the Nigerian economy by utilizing time-series data spanning 1980 to 2013. The study used the ARDL model to assess the relationship between the variables investigated. The findings of the study showed the absence of a significant impact on economic growth by human capital. Similarly, Oluwadamilola, et al. (2018) investigated the relationship between human capital and sustainable economic growth of Nigeria. Utilizing series covering the period 1981- 2015, the study employed the VECM model for analysis. Results obtained from the estimations carried out showed human capital as being instrumental in achieving sustainable growth and development. Empirically, different studies on human capital development and economic growth in Nigeria have been investigated with different measuring indices and with mixed results.

Similarly, Nnaemeka (2019) used econometric model to examine the contribution of primary, secondary and tertiary education to economic growth in Nigeria. His finding were that, all primary school input, physical capital formation and health contribute to growth while secondary school input and tertiary institutions were found to dampen growth. He recommended that, there should be adjustment in the admission process in favour of core science and technical oriented courses. He also recommended that; schools should be adequately funded for enhanced efficiency.

Naorti (2020) equally examined the effect of education and health expenditures on economic growth in Nigeria between 1970 and 2019 using a static regression model. The estimated model reveals that, public investment and public consumption (in education and health) exert positive influence on economic growth in Nigeria. This indicates that, there is a long run relationship between economic growth and expenditures on education and health in Nigeria. He recommended that, proper policies be formulated on education and health.Ogujiuba (2013) examined the impact of human capital formation on economic growth in Nigeria using the error correction model as an analytical tool. His finding showed that, investment in human capital inform of education and capacity building at the primary and secondary levels impact significantly on economic growth, while capital expenditure on education was insignificant to the growth process. He recommended that, educational institutions in Nigeria should be re-structured for quality schooling at the primary and tertiary levels.

Amadi, et al. (2019) also investigated human capital investment as a catalyst for sustainable economic development in Nigeria. Study covered the period, 1986 – 2017. Data were analysed using OLS technique. Study revealed that there was a positive relationship between real GDP and the explanatory variables. Muhammad, et al. 2018) also evaluated the relationship between human capital and economic growth. Using data for 132 countries over 15 years, the empirical results reveal that human capital plays a positive role in per capita GDP growth only in the presence of better economic opportunities and high-quality legal institutions. In fact, economic opportunities reinforce the effect of human capital on growth: the easier it is to do business and trade domestically or internationally, the stronger the effect of human capital on growth. In conclusion, the endings suggest that inconclusive results in previous empirical studies on human capital and growth might be due to omitted variable bias as these studies do not include variables related to social capabilities.

Similarly, Halidu (2016) analysed human capital development in the Nigerian University as a panacea for sustainable development. The study used content analysis. It revealed that no country can attain economic growth and development without having a well talented, competent and skillful workforce that can exploit, utilize and accelerate the available resources of the nation optimally. Study had its weakness in its use of content analysis with low power of prediction. Howbeit, it was considered relevant to the needs of the present study.Omodero, et al. (2016) also carried out an empirical review of government expenditure on education and economic development in Nigeria. Study spanned across 2000 - 2015. Data were analyzed using OLS technique. Results indicate that expenditure on education had a significant impact on the economy while social community services and school enrolment had non-significant contribution to economic development. Findings have policy implication to government at all levels to strive toward developing human capital through increased government expenditure on education and social services.

In their own study, Adetula et al (2017) studied the impact of investment in education on economic development in Nigeria.Data were analysed using OLS technique. Results indicate that investment in education contributed significantly to economic development. Study had its weakness in the use of GDP as proxy for economic development. Nevertheless, it was found useful as a suitable guide for the conduct and advancement of the present study. Again, Njoku, et al. (2017) appraised human capital development as a strategy for sustainable development in the Nigerian education system. Study revealed that education is a vibrant tool for human capital development which contributes significantly to economic growth, productivity and sustainable economic development. Study has yielded relevant data which were included in the present study.

Jaiyeoba (2015) also empirically investigated the relationship between investment in education, health and economic growth in Nigeria, using time series data from 1982 – 2011. The paper employed trend analysis, the Johansen cointegration and Ordinary Least Square techniques. The findings indicated that there is a long run relationship between government expenditure on education, health and economic growth. The variables – health and education expenditure secondary and tertiary enrolment rate and fixed capital formation with the expected positive signs and also statistically significant according to the paper have strong implications on education and health policy and recommended that in order to accelerate growth and liberate Nigerian from the vicious circle of poverty, the government should put in place policies geared towards massive investment in the education and health sectors.

In addition, Uduh, et al.(2017) examined the impact of Nomadic education expenditure and economic growth in Nigeria. The study made use of time series data on real domestic product and total government expenditure on nomadi education from 1986 – 2012 and employed Ordinary Least Square (OLS) which provides information about the long-run relationship between the variables. It also revealed that total government expenditure on nomadic education has significant impact on Nigeria economic growth. It therefore recommended that the government should increase her budgetary allocation to the Normadic education and other educational sectors because adequate investment in this sector will improve educational outcome and induce the nation’s economic growth.

Eigbiremolen,et al.(2014) also employed the augmented solow human capital growth model on national output, a proxy for economic growth, using quarterly time series data from 1999 – 2012. Empirical results showed that human capital development in line with theory, exhibits significant positive impact on output level. Meaning that human capital development

is indispensable in the achievement sustainable economic growth in Nigeria. The result further revealed a relatively inelastic relationship between human capital development and output level. The study therefore recommended that government and policy makers should make concerted and sincere efforts in building and developing human capital through adequate educational funding across all levels.

Furthermore, Ogunleye, et al. (2017) employed the Ordinary Least Square (OLS) regression analysis to examine the impact of human capital development on economic growth in Nigeria using annual time series data from 1981 – 2005. The empirical result showed that human capital development has significant impact on economic growth, as proxy by the gross domestic product. And that in line with theory the human capital development indicators namely secondary and tertiary school enrolment, total government expenditure on health and education exhibit positive and statistically significant impact on economic growth of Nigeria. The result further revealed that life expectancy and primary school enrolment, however, exhibited a negative and statistically insignificant impact on economic growth of Nigeria. The study therefore recommended that government should allocate adequate resources for the development of human capital in order to enhance economic growth in Nigeria.

Adeyemi, et al. (2016) examined the impact of human capital development on economic growth in Nigeria, using time series data spanning from 1980 – 2013 which were sourced from the World Bank Indicators and National Bureau of Statistics. The study employed ARDL cointegration analysis to estimate the relationship among the variables used. The result revealed that there is positive long-run relationship among the secondary school enrolment, public expenditure on health, life expectancy rate, gross capital formation and economic growth but it was statistically insignificant. The results further revealed that there was negative long-run relationship among primary, tertiary school enrolment, public expenditure on health and economic growth. The study therefore recommended that government should put in place the required education and training policy that would guarantee quality schooling for primary and tertiary education and commit more funds to the health sector to enhance human capital development.

3. RESEARCH METHODOLOGY

This chapter looked at the research method. It covered sub-headings in the following order as measurement of variables, the research design, sources and types of data, model specification, method of data analysis, procedure of estimation, variables selection and summary of research method. The model to be specified discusses the econometric tools to be used in investigating data for the purpose of answering the research questions in order to achieve the objectives of this work. It includes the approach to be adopted to examine data for the chosen variables and the construction of empirical model.

3.1 Research design

The ex-post facto research design was adopted to enable the researcher used secondary data. It is appropriate to examine the impact human capital development on economic growth in Nigeria within the period of 1991 to 2021. The method of data collection in this study will be secondary sources because of its nature. The data will be source from the World Bank Development Indicator (World Bank Database 2022).

3.2 Sources and types of Data

This study relie only on secondary of data which are publications of World Bank Development Indicator, World Governance Indicators (World Bank Database, 2024), National Bureau for Statistics (NBS) and Central Bank of Nigeria (CBN) Statistical Bulletin for various years. These sources have been used by many researchers in the field of public sector economics and public finance. The types of data to be use in this research work will be secondary data and it is the preferred data for the analysis on impact human capital development on economic growth in Nigeria.

3.4 Method of Data analysis

This research work will adopts five basic techniques to carry out its analysis. The first is normality test to ascertain the behaviors of the variables using descriptive statistics. The second technique is unit roots test for stationarity verification using Augmented Dickey-fuller (ADF) and Philips-Perron (PP) tests. The third method is cointegration test using Autoregressive Distributed Lag (ARDL) Bound rest for ling-run equilibrium check among the variables captured in the model. Fourthly, Autoregressive Distributed Lag Model (ARDL) is applied to estimate the impact of Human Capital Development on economic growth in Nigerian from 1991 to 2021.The choice of this method is a function of the behaviour of the variables and the stationarity level introduced by Pesaran et al (2001). Noted that in order to incorporate I (0) and I (I) variables. Moreover, error correction estimate will be conducted to check the point of convergence among variables included in the model.

4. PRESENTATION OF RESULTS

This chapter presents the empirical findings of the study. It covers the descriptive statistics, unit root testing, VAR lag selection, the ARDL Bounds test for cointegration, the long-run and short-run ARDL estimates, and the post-estimation diagnostics for serial correlation and heteroscedasticity. Each stage of the analysis is directed at answering the research objectives set out at the beginning of the study.

4.1 Descriptive Statistics

Table 4.1 sets out the descriptive statistics for the variables used to assess the effect of human capital development on economic growth in Nigeria.

Table 4.1: Descriptive Statistics on Human Capital and Economic Growth in Nigeria

	GDPGR	GIE	GIH	INSEC	LEXP	CORR	EXCR
Mean	4.984990	7.963437	7.752187	-1.835001	50.87850	-1.164687	191.2418
Maximum	15.32916	11.40000	11.20000	-0.07344	55.06972	-0.879375	382.3074
Minimum	-1.79	4.500000	4.200000	-2.22688	46.05878	-1.7375	88.86660
Skewness	0.218247	-0.012177	-0.03543	2.684990	-0.130466	-0.937477	0.950111
Kurtosis	3.178072	1.818826	1.841333	12.60493	1.628208	4.803713	2.350562
Jarque-Bera	0.888950	5.583059	5.390121	484.3655	7.799601	27.07534	16.13044
Probability	0.641161	0.061327	0.067538	0.000000	0.020246	0.000001	0.000314
Observations	104	104	104	104	104	104	104

Source: Extracts from E-views 10

Table 4.1 shows that most of the series satisfy the Jarque-Bera normality condition, with the exception of insecurity, life expectancy, corruption and the exchange rate, whose probability values fall below the 5 percent threshold and therefore point to departures from normality. The skewness statistics are mixed in sign, indicating that the distributions of the series lean in different directions rather than following a single uniform pattern.Turning to

kurtosis, GDPGR, INSEC and CORR record values above three, which marks their distributions as leptokurtic (more peaked than a normal distribution), while the remaining series, with kurtosis below three, are platykurtic (flatter than normal). Over the period under review, economic growth ranged from a low of -1.79 to a high of 15.3; government spending on education ranged between 4.5 and 11.4; and government spending on health ranged between 4.2 and 11.2, all figures in billions of naira. Life expectancy moved between 46 and 55 years, while the exchange rate ranged from N88.87 to N382.31 across the quarters studied. Insecurity and corruption, by contrast, carried negative coefficient values throughout the sample, pointing to a consistently adverse relationship with the other variables in the model.

4.2 Stationarity Testing

Because standard econometric estimators assume that the underlying time series are stationary, and because macroeconomic series frequently violate this assumption, it is necessary to test for unit roots before proceeding to estimation; failing to do so risks producing biased and misleading results. The Augmented Dickey-Fuller (ADF) test (Dickey and Fuller, 1981) was therefore applied to each series — the growth rate of GDP, government spending on education and health, life expectancy, the exchange rate, insecurity and corruption — to establish their order of integration.

4.2 Tabulated Results of the ADF Unit Root Tests

The unit root tests were run in E-views, and the results are reported in Table 4.2 below.

Table 4.2: Augmented Dickey-Fuller Unit Root Test

Variable	Level	1st Difference	5% Critical Value	Order of Integration
GDPGR		-3.168136	-2.893956	I(1)
GIE		-5.371865	-3.459950	I(1)
GIH	-4.129717		-3.467703	I(0)
EXCR		-5.406089	-2.892536	I(1)
LEXP	-19.10236		2.919952	I(0)
INSEC	-3.962109		-2.893589	I(0)
CORR	-2.860701		-2.583192	I(0)

Source: Author's Computation using E-views

Table 4.2 confirms that every series is stationary — either at level or after first differencing — which qualifies the data set for estimation and for drawing policy conclusions. Given this mixed order of integration, the analysis proceeds first to select the optimal lag length and then to test for a long-run cointegrating relationship among the variables using the Autoregressive Distributed Lag (ARDL) Bounds Testing approach.

4.3 Lag Length Selection

Before the cointegration test could be estimated, an appropriate lag length had to be chosen.

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1143.672	NA	149761.6	26.10618	26.24694	26.16289
1	-287.3761	1595.824	0.000935	7.213092	8.057639	7.553339
2	-118.6735	295.2294	3.59e-05	3.947126	5.495462*	4.570912*
3	-105.3803	21.75267	4.75e-05	4.213188	6.465312	5.120512
4	-87.36366	27.43435	5.71e-05	4.371901	7.327815	5.562765
5	-38.60723	68.70224	3.48e-05	3.831983	7.491685	5.306385
6	4.936344	56.40872*	2.44e-05*	3.410538*	7.774029	5.168479
7	13.46588	10.08036	3.91e-05	3.784866	8.852146	5.826346
8	24.55188	11.84187	6.13e-05	4.101094	9.872162	6.426112

Source: Extracts from Eviews 10

On the basis of the Schwarz information criterion, a lag length of two (2) was adopted for the model. The study draws on ninety-six (96) quarterly observations.

4.4 ARDL Bounds Testing for Cointegration

With the series confirmed to be a mix of I(0) and I(1) rather than uniformly integrated of the same order, the ARDL bounds testing procedure (Pesaran and Shin, 1999; Pesaran, Shin and Smith, 2001) was used to check for a long-run relationship among the variables.

As Table 4.4 shows, the F-statistic of 4.947168 exceeds both the lower and upper bounds of the 95 percent critical value band (3.23–4.35), which is grounds to reject the null hypothesis of no long-run relationship. The study therefore concludes that a unique long-run cointegrating relationship exists between the dependent variable and the explanatory variables over the period examined.

Table 4.4: ARDL Bounds Testing for Cointegration

Test Statistic	**Value**	**K**
F-Statistic	4.947168	3
Critical Value Bounds		
Significance	***I(0) Lower Bounds***	***I(1) Upper Bounds***
1%	4.29	5.61
5%	3.23 **	4.35
10%	2.72	3.77

Note: ** signifies rejection of the null hypothesis at 5 per cent level of significance
Source: Author's Extract from E-views 10

4.5 The Long-run and Short-run ARDL Estimates

Having met the pre-estimation requirements, the study proceeds to estimate the long-run and short-run relationships between government investment in human capital and economic growth in Nigeria, using the ARDL technique. The results for Model 1 are reported in Table 4.5(A).

Model 1: Human Capital Development and Economic Growth in a Society Devoid of Corruption and Insecurity

Table 4.5(A): ARDL Estimates

Dependent Variable: GDPGR				
Variable	**Coefficient**	**Std Error**	**t-statistic**	**P-value**
A: Longrun Estimates				
GIE	-5.304632	5.337497	-3.247564	0.0017
GIH	4.842597	7.084435	3.210091	0.0019
EXCR	-0.002412	0.009624	-0.250645	0.8027
C	28.229368	5.367061	5.259744	0.0000
B: Shortrun Estimates	**Coefficient**	**Std Error**	**t-statistic**	**P-value**
D(GIE(-1))	0.313303	5.325839	5.286914	0.0000
D(GIH)	0.334253	7.694023	9.151018	0.0000
D(EXCR(-1))	0.034436	0.011109	3.099872	0.0027
ECM(-1)	-0.128798	0.029894	-4.308551	0.0000

Source: Author's computation from E-views 10

Model 2: Human Capital Development and Economic Growth in aCorrupt and Insecured Society

4.6.1 Residual and Robustness Checks

The diagnostic results are summarised in Table 4.7.1.

Table 4.6.1: Residual Diagnostic Tests

Description	**F-Statistic / P-value**
Breusch-Godfrey Serial Correlation LM Test	0.128887/ 0.8793
Heteroskedasticity Test: B-Pagan-Godfrey	1.503642/ 0.1460
Ramsey test (Model Mis-specification)	1.516164/0.2218
*** indicates 5% significance level*	

Source: Extracts from E-views 9.0

None of the diagnostic statistics is significant at the 5 percent level, which supports the reliability of the models. The Breusch-Godfrey LM test indicates that the residuals are free of serial correlation and are homoscedastic, while the insignificant Ramsey RESET statistic indicates that the models are correctly specified and the estimated parameters can be relied on for policy purposes.

5. SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

This study set out to examine the effect of human capital development on economic growth in Nigeria between 1999 and 2025, using standard econometric tools. The unit root tests confirmed that every series examined was either stationary at level or integrated of order one, satisfying the requirement for ARDL estimation. The ARDL Bounds Test for cointegration further confirmed a unique long-run equilibrium relationship among the variables in the model.

Model 1 shows that the returns to human capital investment can remain negative even in the long run unless pursued through deliberate and consistent policy, as reflected in the inverse

relationship between education spending and economic growth reported in Table 4.5(A). This suggests that, even where corruption is absent, ensuring equitable access to education and healthcare remains difficult because of underlying socioeconomic disparities, and that targeted interventions are needed to get the most out of human capital spending.

Model 2, reported in Table 4.5(B), shows that once corruption and insecurity become entrenched, every human capital indicator examined — education, health and life expectancy — turns adverse for growth. The evidence points to government investment in these areas losing its effectiveness where violence and corruption persist, undermining the broader goal of a more prosperous economy. Given how widespread both problems remain, government efforts to turn the economy around are likely to fall short unless insecurity and corruption are addressed directly.

5.2 Conclusion

On the basis of these findings, the study concludes that government efforts to build human capital for stronger economic growth were undermined by the co-existence of rising insecurity and corruption in Nigeria over the period studied. The combined weight of corrupt practices and pervasive insecurity across the federation is associated with weaker human capital outcomes — high illiteracy, limited access to quality healthcare, and a persistent mismatch between graduate skills and labour market needs — all of which constrain economic diversification, innovation and the country's competitiveness in the global economy.

5.3 Policy Recommendations

Based on these findings, the study makes the following policy recommendations:

(i) A robust monitoring and evaluation system is needed to ensure that education and health funding reaches its intended beneficiaries and delivers measurable impact;
(ii) Government should prioritise building resilient, accessible education and healthcare systems in vulnerable areas, directing resources deliberately toward secure regions as well as conflict-affected ones;
(iii) Government should encourage public-private partnerships to improve resource allocation, service quality and accountability across the human capital sectors;
(iv) Government should, as a matter of urgency, strengthen its anti-corruption institutions — including the Economic and Financial Crimes Commission (EFCC) and the Independent Corrupt Practices Commission (ICPC) — to curb the diversion of resources meant for human capital development.

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