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IMPACT OF HUMAN CAPITAL DEVELOPMENT AND ECONOMIC GROWTH IN NIGERIA

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Abstract

This is study examine the impact of human capital development on economic growth in Nigeria ,the study employs the ordinary least square techniques to determine the casual relationship between growth rate (proxy by GDP) and social spending (proxy by expenditure on health and education) and some identified variables like the logged series of Gross domestic products ability of the model is ascertained, the result of the study show that expenditure on education has a negative relationship with economic growth. It is therefore recommended that government should pay more attention not only to the proportion of expenditure spent on health and education but government should also ensure that the spending are channeled towards appropriate health and education schemes so that human capital could be enhanced and thereby improving economic growth in Nigeria.

Keywords: Human capital development; Economic growth; Nigeria; Education; Health; Labour productivity; Human capital investment.

INTRODUCTION

The concept of human capital refers to the abilities and skills of human resources of a country. It has been recognized globally as a major factor that is responsible for the wealth of nations (Falloni and Vittadini, 2010).

The definition of a nation's wealth has widened to accommodate not only physical capital but also human capital as an independent factor of production required to achieve high and sustainable economic growth rates. The process of acquiring and increasing the number of persons who have the skills, education and experience that are critical for economic growth and development is what (Okojie, 2005) refers to human capital development.

The belief in human capital as a necessity for growth in Nigeria started during the implementation of the 1955-60 development plans, and today with the importance of knowledge in the economy, human capital has increasingly attracted both academic and public interest. Education and health are essential in human capital development. It is the human resources, of any nation, rather than its physical capital and material resources, which ultimately determines the character the pace of its economic and social development. According to Harbison (1972):

The active agent who accumulate capital, exploit natural resources, build a 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 else" (Herbison, 1973).

In recognition of this relationship, however, developing nations attempted to stimulate the accumulation of human capital through public education expenditure as well as government spending on health and other related social services (Adebiyi, 2006). The new endogenous growth theories are thus significant in the introduction of the active role of human capital in the growth and productivity of economics when increased. Health and education are two closely related human capital components that work together to make the individual more productive.

Taking one component as more important than the other is unrealistic as a more educated individual, who is ill, is as inefficient as an illiterate is. Both components are thus related together because of their close relationship. Appleton and Teal (1998), described these components as different from other types of goods produced in societies.

1.1 Statement of the Problem

Identifying problems in any field of study is certain, and the field of Human Capital is one in which problem must occur. A country is poor when it never invested in its Human Capital Development effectively, and has led to the poor management of resources as seen in both public and private sector in the Nigeria economy. Nigeria is richly blessed with abundant natural and human resources. Despite these abundant resources, the economy over the years has been growing at a very slow rate and this can be attributed to neglect and failures to invest in human capital. The World Bank (2010) specifies that Nigeria has found it difficult to grow her economy in her quest to become a knowledge-based economy because of the challenges faced in the national educational system. According to the report, some major challenges limiting the advancement of Nigeria's education system are poor access to education, poor quality of education and poor funding of education.

Furthermore, the issues relating to this concept have remained unresolved, uneven distribution of skilled labor, misemployment of human capital in Nigeria, poor reward system, retarding the acquisition and development of human capital has remained a serious problem.

LITERATURE REVIEW

Conceptual literature

Human capital

It refer to productive investment embodied in human person, including skills, abilities, ideals, health and locations, often resulting from expenditures on education, on-the-job training programs, and medical care. It also covers a broad range of concepts but the most essential feature is increases productivity through investing in employees. It could be schooling, a computer training course, expenditure of medical care and lectures on the virtues of punctuality and honesty. This is because it raises earnings, improve health, or add to a person's good habit over much of his lifetime. Todaro & Smith (2015)

The role of human capital in economic growth cannot be overemphasized, as human beings constitute the key development input as procedures 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. In line with this, Harbison (1973) and Yesufu (2000) believed that without labour all the factors of production are passive. Ejere (2011) posited that human capital refers to the human factors in the production process and consists of the combined knowledge, skills or competence and abilities of the workforce. Of all factors of production, only human beings are capable of learning adapting or changing innovative and creative.

Various authorities have attempted to define human capital. Quite clearly, human capital is a multidimensional concept that cannot be fully appreciated through mere definition. A glossary of recent attempts at defining human capital would suggest the concept as embodied in:

(a) Human Resources; including knowledge , skills, attitudes and motivation belonging to an enterprise or society and engaged in the development of that enterprises or society to fulfill its objectives and to enhance the quality of life of its members.
(b) Human capability and productivity engendered through knowledge and skills acquired from education, training and experience and facilitated by an enabling environment and
(c) That intangible factor of the production process that contributes human intellect, skills and competence in the production and provision of goods and services.

Human Capital Development

Human capital development has been described as an end or objective of development. It is a way to fulfill the potentials of people by enlarging their capabilities, and this necessarily implies empowerment of people, enabling them to participate actively in their own development. Developing Nigeria's human capital development is people and not goods or production centered strategy of development. Essentially, it has been stressed that the differences in the level of socio-economic development across nations is attributed not so much to natural resources and endowments and the stock of physical capital but to the

quality and quantity of human resources (Dauda, 2010). It is the empowerment of people to identify their own priorities and to implement programmes and projects of people in the development process and the encourage that that participation.

Economic Growth

Growth is not a special preserve of any particular discipline. It can be used is any field of human endeavor, this is why sometimes we talk of educational growth, human growth, economic growth, etc. However, the term does not mean the same thing for all disciplines. For example, educational growth may mean acquisition of more and more knowledge. Such knowledge may involve improvement in the level of skill acquired, increase in the level of useful information obtained, etc. (C.C.S. Okeke, 2005)

When we talk of economic growth, we usually mean an appreciable increase in the output of goods per head. This increase in output is measured in real terms like two bicycles, four cars, six tires, etc. In a more sophisticated way, economic growth can be defined as "a **rapid and sustained rise in real output per head and attendant shifts in the technological, economic and demographic characteristics of a society".** (C.C.S. Okeke, 2005)

Theoretical literature

The conventional neoclassical growth theory that was modeled by Robert Solow (1956) is of the view of that growth occurs from the accumulation of physical capital (savings) and an increase in labor force with improved technology. Human's capital is a key determinant of labor productivity because it facilitates the absorption of new technology increase the rate of innovativeness and promotes efficient management (Adamu 2000).

Economic growth is as a result of the accumulation of physical capital and expansion of the labour force and an exogenous factor known as technological progress, which makes physical capital and labour more productive. Also the neoclassical growth theory also posits that change in quantities of factors of production (Labour and Physical Capital) accounts for growth (Slow 1957, Khan 1997, Iyoha 2000). The model allows for diminishing returns, perfect competition but not externalities, followings the work of Solow (1956, 1957) and Dennison (1967), to compute the contribution of different inputs to the overall growth rate of the economy can be explained in a simple production function way.

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Solow uses the aggregates production function;

$$Y=F(L, K, T) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ 1$$

Where Y= aggregate real output

K= stock of physical capital

L=labour

T= Technical Change

Taking Hicks – neutral change (that is technical progress is neither capital nor labour intensive) as the basis, Solow then postulates the production function as;

$Y = A(T) F(K, L)$ …… 2

Where A (T) = index of technical change which is called total factor productivity (TFP). Total factor productivity represent the efficiency with which the production function transform the whole set of factors into output. It depends on other factors including the state of human knowledge, specific accumulated know-how and experience, the efficiency with which economic political and social institution encourage productive activity and effort and the management skills of producers and entrepreneurs (Van Dan Berg:2000).

For higher labour productivity, an integral part of technology progress is investment in human capital and this is termed endogenous factor because accumulation of physical capital is enhance by the knowledge, skills and attitude of the people who partake in such exercise. The heterogeneity that increase productiveness, that technological progress has been questioned in the literature (e.g Lucas 1998; Romer 1987; Azaradis and Drazen 1990; Mankiw et al 1992; UNDP 1996). To them, what increases the productivity is not an exogenous factor, but an "endogenous" one, which is assumed to be related to the knowledge and behavior of the people responsible for the accumulation of physical capital.

The emergency of endogenous growth models was primarily an attempt to encompass the sources of technology progress and hence of sustained productivity growth within the general equilibrium framework. The literature has evolved to provide several distinct explanation of the process of economic growth each of which carried particular empirical and policy implication.

Romers "AK model" generate sustained growth by assuming that technological change is the unintended result of specialization firm's investments. Creation of capacity to produce more and more specialized intermediate products is assumed to work like Adam Smith's division of labor principle, but at the aggregate level.

Lucas (1998) considers human capital to be another input in the production function, not fundamentally different from physical capital not only formed by workers through certain activities (principally education or on-the-job training). By assuming constant returns to human capital formation on the argument that worker' knowledge spills over the model can achieve a positive steady growth rate of labor productivity.

A second line of analysis shifts attention away from treating human capital as a direct input to the production of goods: instead, it focuses on modeling other important activities performed by skilled labor, especially innovation. Technological change resulting from research and development investment that creates a greater variety of goods or improves the quality of the existing one is the main form of innovation recognized by the endogenous growth literature following Romer (1986). This latter line of analysis brought about the significant point that when human capital is modeled as a factor affecting by the human stock's capital is being accumulated relative to the existing stock seen as the critical determinant of productivity growth.

The basic human capital theory which is a refinement of the marginal-productivity theory has since been become a dominant means of understanding how wages are determined. The theory was largely shaped by Gary. S Becker, an American student to

Theodore Schultz. The investment in human capital depends on the cost of acquiring the skills and the returns that are expected from the investment.

Empirical Literature 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 engenders economic growth. A review of some of the empirical literature is provided below;

Odesanya Saheed Obafemi (2025), human capital development remains pivotal to the economic growth of any nation. This study evaluated the significance of human capital development on economic growth of the Nigerian state. The specific objectives were to analyze how investment in human capital development on economic growth of Nigeria. The methodology of the study involved gathering and reviewing pre-existing data using the qualitative content analysis method. The study finds out that lack of adequate investment, political will, and corruption as affect human capital development in Nigeria.

Moses Ogachi Udu (2025) investigated the impact of human capital development on the economic growth process between 1992- 2024, as measured by federal government expenditure on health education gross fixed capital formation, primary secondary and tertiary institution enrollment and other social and community services secondary data gathered from central bank of Nigeria (CBN) publication served as source of data for the study the autoregressive distributed leg [ARDL] bounds testing method for Co-integration was used in the study the estimated long run relationship demonstrated the beneficial impact of physical capital formation the influence minimal it was discovered that there was positive significant impact of expenditure on health education gross fixed capital formation primary secondary and tertiary institution enrollment on economic growth in Nigeria should actively promote the development of labor intensive businesses, reorganize the education system, and implement sound governance in order to achieve sustained economic growth.

Amadi Sophia (2024) examines the impact of human capital development on the performance of the economy Nigerian over a period of 1999-2022. The study adopted the ex-post facto research design based on the data from central bank of Nigeria's economic and financial review, central bank of Nigeria (CBN) financial statistics report and data from the Nigeria bureau of statistics (NBS). Time series data was generated from CBN bulletin from 1990 to 2022. The study made use of the ordinary least square method of estimation. The study discovered that government expenditure on health(GEXH) has a positive (co-efficient of 143.0199) and a statistically significant relationship (P-value 0.0036) with real gross domestic product in the long run, this means that a one percent increase in GEXH, will lead to about 143.0199 increases in RGDP, this result conforms to our earlier anticipated A priori theoretical expectation. Based on the findings, the study recommended that the federal, state and local government in Nigeria should increase their budgetary allocations to education and health sectors and ensure the proper implementation in other to enhance human capital development in the Nigerian economy.

Nnana, O.O., Tangban, E.E., Willie, W.O., Rita, N.O. (2023) examine the aggregate investment in education on agriculture output and healthcare in Nigeria , the finding showed that aggregate expenditure on education have a positive and significant effect on agricultural output in Nigeria using ordinary least square (OLS) estimation technique .

Uruemu, H.I. and Ojevwe, T.A. (2023) investigate the impact of institutions and human capital development on economic growth in Nigeria over a period of 1990-2022. The study adopted the auto-regressive and distributed lag (ARDL) model, and the result of analyses shows that human capital development has no significant impact on economic growth in Nigeria both in the short run and in the long run with government expenditure having a positive and significant impact in the short run while the rest components of human capital were not. In the long run labour force has a negative and significant impact on economic growth.

Oladeji A.O.(2015) investigate the relationship between human capital (through education and effective health care services) and economic growth in Nigeria, using annual time series data from 1980-2012.the paper employs OLS methodology. The result shows that considering the magnitude, 1% increase in GDP is brought about by 22% increase in human capital. This postulates that an increase in allocation to education and health will lead to increase in GDP. The estimated value of R^2(goodness of fit) of 0.80 or 80% and it show that the independent variable explain about 80%of the variation in the dependent variable. The findings have a strong implication on education and health policy in Nigeria. The study seems to suggest that a concerted effort should be made by policy makers to enhance educational and health investment in order to accelerate growth which would engender economic growth.

RESEARCH METHODOLOGY

Method of Data Collection

The data are annual time series data, covering the period from 1981 – 2014 about thirty-three (33) years. The data type will be secondary in nature comprising of Real Gross Domestic Product (RGDP) proxies for economic growth (dependent variable) regressed against Government Expenditure on Education, Government Expenditure on Health and Gross Fix Capital Formation (GFCF) as a proxy for infrastructural development. The data is sourced from Central Bank of Nigeria Statistical Bulletin (2014).

Method of Data Analysis

The ordinary square (OLS) regression was employed to analyses the model. Estimation of parameters of the model required data on real Gross Domestic Product (RGDP), Government Expenditure on Education (GEE), Government Expenditure on Health (GEH) and Gross Fix Capital Formation (GFCF). Apart from the use of OLS for regression analysis, stationary test like unit root testing normality test, serial autocorrelation test, cointergration etc. would be employed too.

i. **Stationary (unit root) Test:** In order not to run a spurious regression, it is worthwhile to conduct a stationary test to make sure that all the variable are mean reverting that is, they have constant mean, constant variance and constant covariance. In other words, they are stationary. The Augmented Dickey Fuller (ADF) test will be used in the research work since it adjusts for serial correlation.
ii. **Co-integration test:** Two variables are co-integrated if they have a long or equilibrium relationship between them. If two variables dependents are individually non-stationary but their residual is stationary, those variables are said to be co-integrated on long term run (Gujarati 2004, 2000). In this case the study will used Johansen co-integration test to test for the long run relationship since it is the only test which can estimate more than one co-integration relationship if the

data contains two or more time series as well as given the maximum rank of co-integration (Sekuma, 2011).

3.4 Model Specification

This study employed a simple econometric procedure of Ordinary Least Square regression in estimating the relationship between government expenditure on education, government expenditure on health, government fix capital formation and economic growth in Nigeria proxies by real gross domestic product.

The functional form of this model can be specified as follows:

RGDP =*f* (GEE, GHE and GFCF) …….. (1)

The mathematical from of this model can be specified as follows:

RGDP = _ßo + $ß_1$GEE + $ß_2$GEH + $ß_3$GFCF …… ……...(2)

In order to allow for the inexact relationship among the variables as in the case of most economic variables, stochastic error term is added to the equation. Thus, we can express the econometric from of the model in its log from as:

Log RGDP = ßo + $ß_1$GEE + $ß_2$GEH + $ß_3$GFCF ……. …….. (3)

Where ßo,$ß_1$, $ß_2$,$ß_3$, are regression parameters and units the errors term, which is a random variable and has well defined probabilities properties.

R G D P = Real Gross Domestic Product (proxy for Economic growth) – dependent variable

GEE = Government Expenditure no Education (independent Variable)

GEH = Government Expenditure on Health (independent variable)

GFCF = Gross Fix Capital Formation (independent Variable)

DATA PRESENTATION AND ANALYSIS

This section mainly focuses on various tests such as descriptive statistics analysis, normality tests, unit root test, co-integration technique as well as the ordinary least square regression analysis. These tests were carried out respectively in order to achieve the objectives of the study.

4.1 DATA USED FOR THE STUDY

4.1 Table Showing the Variable in the model

Obs	RGDP	GEE	GEH	GFCF
1981	12.23185	2.833213	2.302585	8.002557
1982	12.20450	2.890372	2.302585	8.062275
1983	12.13134	2.772589	4.382027	8.059741
1984	12/12031	2.995732	2.302585	7.994086
1985	12.21124	3.258097	2.564949	8.033474
1986	1223549	3.258097	2.564949	8.066013
1987	12.22982	3.135494	3.688879	8.067723
1988	12.30082	3.832980	3.737670	8.080123
1989	12.37467	3.401531	4.060443	8.087041
1990	12.49706	3.693867	3.912023	8.073428
`1991	12.48891	3.261935	4.127134	8.066013
1992	12.51122	3.370394	2.08050	8.067723
1993	12.52392	4.486387	4.469350	8.080039
1994	12.52616	3.655840	4.502029	8.087041
1995	12.54756	4.329417	3.475067	8.073428
1996	12.59047	2.442012	3.010621	7.947162
1997	12.61826	2.698238	` 4.488973	7.968122
1998	12.64719	2.609297	4.309456	7.941975
1999	12.65135	3.775301	4.161380	7.943335
2000	12.70436	4.059695	3.097837	7.669565
2001	12.78547	3.685940	3.704261	7.669565
2002	12.97896	4.388641	3.704261	7.669565
2003	13.07639	4.171030	3.504656	7.682114
2004	13.17605	4.337652	3.532226	7.678363
2005	13.23914	4.416393	4.019262	7.669453
2006	13.29770	4.779275	4.131159	7.675523
2007	13.36020	5.015817	4.405621	7.800495
2008	13.41831	5.099729	4.587210	7.817903
2009	13.41831	4.920827	4.502029	7.830632
2010	13.41831	5.140493	4.596129	7.845342
2011	13.41831	5.816516	5.445875	7.943335
2012	13.41831	5.853351	5.288217	8.033052

2013	13.43308	5.967235	5.192901	8.073428
2014	13.43747	5.740176	5.271768	8.033480

Sources: CBN 2014 Variation Issues

SUMMARY, CONCLUSION AND RECOMMENDATION

Summary

The result presented above was obtained from the regression analysis and the result shows that all the variable except gross fix capital formation conform to a prior expectation and the intercept in the model is equally positive related to RGDP (Economic growth) and is significant.

For government expenditure on education (GEE) the coefficient is positive and it is significant at less than 5% which shows that the GEE is a significant factor that determine the RGDP (Economic growth).

Government expenditure on health unlike expenditure on education is negative and it is not statistically significant to the model. From the result it shows that a 1 percent fall in government expenditure on health (GEH) will lead to 603.0969% decrease in RGDP (Economic growth).

Gross fix capital formation (GFCF), the coefficient is negative and it is significant at 5%, this is because the probability is less than 0.05 ($p<.05$). From the result it shows that a 1 percent decrease in gross fixed capital formation (GFCF), a measure of investment, will lead to 222.2818% fall in growth which is very negative and undesirable impact.

Conclusion

This study focuses on the impact of human capital development on economic of Nigeria from 1981-2014. The econometric method of ordinary least square (OLS) and cointegration modeling techniques were employed. Three research hypothesis and three objective shaped this work. The study used Augmented Dickey-fuller (ADF) method for detecting the presence of unit root amongst the research variables (RGDP, GEE,GEF and GFCF). The study discovered that all the variables became stationary after first differencing.

Furthermore, the study employed the Johansen's co integration test to ascertain the long run relationship that exist among the variables in the study and found out that along run relationship exists between RGDP,GEE,GEH and GFCF in Nigeria the period under review.

The study found out that government expenditure on education (GEE) is a significant factor that determines the real gross domestic product (RGDP) i.e. economic growth of Nigeria.

It was further discovered that if the Nigeria government fails to invest in manpower, personnel and in infrastructural development in the health sector it will in a way impact negatively on the technical knowhow of medical personnel available in Nigeria and this will also increase what Nigeria spends abroad on medical bills thus depleting the country's foreign reserves and by implication adversely affecting the economic growth of the nation. Furthermore, government inability to give adequate and conscientious attention to the health

sector will negatively impact on the performance of its teeming labour force as man generally is only motivated to put in his best when in good health.

Again the study observes that when the government relents in investing in fixed infrastructure such as plants and machinery, factory's land and buildings, road networks, computing and communication infrastructure would result in a disproportionate fall in economic growth. From the result above, Gross fixed capital formation has shown a very bad and negative relationship with Economic growth in Nigeria which would definitely reduce the real gross domestic product of Nigeria.

It is therefore concluded that if the Nigeria government hopes to improve on its economic growth prospects, it must tackle headlong the challenges presently bedeviling the health sector and improve on its fiscal discipline to spur infrastructural development .this if done would go a long way in improving the economy of Nigeria as a healthy nation, an educated citizenry and the availability of functional infrastructure is a panacea for rapid economic transformation.

Recommendations

The study therefore recommends that there is need to:

(a) Increase budgetary allocation to human capital especially to the health sector, because despite the allocation to these sectors they still perform below average or what is expected of them.
(b) Government should as a matter of priority implement the minimum United Nations recommendation of 26 percent budgetary allocation on education and a 20 percent allocation on health. The donor agencies like the World Bank, UNDP, UNESCO, etc, should also be encouraged to inject funds into this sector especially, the tertiary and research institutions which foster quick growth in the economy and later development.
(c) The government and the private sector must join hands by mobilizing resources to furnish hospitals and educational institute in equipping them with facilities, libraries, laboratory equipment, computers and modern instructional materials in order to improve the quality of education and enhance human capital development, labour productivity and ensure sustainable growth and development.
(d) Incessant closure of tertiary institution due to strikes, and excesses of student unions should be addressed by relevant authorities. Teachers/ lecturers salaries and improved working conditions in educational institution should be accorded high priority by the government.
(e) The Nigeria government must tackle the challenges presently bedeviling the health sector and improve on its fiscal discipline to spur infrastructure development.

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