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Human Capital Development and Economic Growth in Nigeria

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Abstract

Human capital is an important factor used in converting all resources to mankind's use and benefit. Economists observed that the development and utilization of human capital is important in a nation's economic growth. However, the illiteracy rate in Nigeria is high and many workers are unskilled, leading to their low productivity; hence, this study shows the relevance of human capital development to the growth of the economy. It evaluates human capital development and economic growth in Nigeria by adopting conceptual analytical framework that employs the theoretical and ordinary least square (OLS) to analyze the relationship using the GDP as proxy for economic growth; total government expenditure on education and health, and the enrolment pattern of tertiary, secondary and primary schools as proxy for human capital. The analysis confirms that there is strong positive relationship between human capital development and economic growth. Following the findings, it was recommended that stakeholders need to evolve a more pragmatic means of developing the human capabilities, since it is seen as an important tool for economic growth in Nigeria. Also proper institutional framework should be put in place to look into the manpower needs of the various sectors and implement policies that will lead to the overall growth of the economy.

Keywords: Human capital, Economic growth, Education, Productivity, Youth empowerment

Introduction

The major source of per capital output in any country; whether developing or developed, with a market economy or centrally planned is an increase in productivity. Per capita output growth is however an important component of economic welfare, (Abramowitz, 1981). From experience, it has been revealed that human beings are the most important and promising source of growth in productivity and economic growth. Equipment and technology are products of human minds and can only be made productive by people. The success of any productive program depends on human innovative ideas and creativity.

The impact of human capital development and economic growth in recent times emphasized the growth theory (Romer, 1986; Lucas, 1988). An interesting idea in their work was that in the long run, output per unit of input could increase even when inputs were exhaustively accounted for. Technically advanced human capital and a growing knowledge base appear to be part of this wellspring of growth. An implication of Lucas' hypothesis on human capital is thus associated

with investment in man and his development as creative and productive resources (Harbison, 1962).

As the global economy shifts towards more knowledge-based sectors (e.g. the manufacture of ICT devices, pharmaceuticals, telecommunications and other ICT based services, R&D),skills and human capital development becomes a central issue for policy makers and practitioners engaged in economic development both at the national and regional level(OECD,1996); yet the impact education and vocational training activities exert upon changing national and regional economies remain less than thoroughly explained and analyzed. Since the introduction of human capital theory in the 1960s, a number of studies have attempted to address this and related issues. Today, the global economy is divided into two parts comprising of a few rich nations regarded as the developed countries (DCs) and many poor nations regarded as the less developed countries (LDCs). DCs are characterized by high productivity while the LDCs are characterized by low productivity. According to the level of human capital development and per capita income, Nigeria is classified under the LDCs.

Nigeria as a country is immensely endowed both in natural and human resources. The pool of resources from one end to the other is unquantifiable to such extent that, given a dynamic leadership, economic prosperity would have been achieved in late 20^{th} century. The primary focus of Nigeria has been finding a way to accelerate the growth rate of national income and to engage in structural transformation of her subsistence and resource based economy to a production and consumption based economy in order to break the cycle of poverty, low productivity and stagnation.

In spite of all these abundant resources, Nigeria has failed to realize her full development potential with the topmost priority currently given to sustainable human capital development or people oriented development by many countries and multilateral organizations, e.g. UNDP. A review of the Nigerian economy has become quite appropriate as a way of understanding more comprehensively her human capital development.

Human capital refers to the abilities and skills of human resources and human capital development refers to the process of acquiring and increasing the number of persons who have the skills, education and experience which are critical for the economic growth of the country (Harbison, 1962). Therefore, what really matters in Nigeria is the empowerment of people and the mobilization of economic surplus into productive investment channels. There is also the need for the Nigerian economy to eliminate or minimize those constraints towards human capital development so as to enhance rapid economic growth.

Statement of Problem: In Nigeria, the rate of illiteracy is very high. Most of the workers are unskilled and they make use of outmoded capital, equipment and methods of production. By implication, their marginal productivity is extremely low and this leads to low real income low savings, low investment and consequently low rate of capital formation. It was indicated on the document that adult literacy rate of at least 65% would be attained by 2008. Therefore the strategy aimed at empowering the citizenry to acquire the skills and knowledge that would prepare them for the vast challenges. Overtime, the following issues relating to the concept have remained unresolved: Uneven distribution of skilled manpower, Misemployment of human capital in Nigeria, Poor reward system retarding the acquisition and development of human capital.

Objective of the Study: The broad objective of this research is to evaluate and appraise the positive impact of human capital development on economic growth in Nigeria. The specific objectives are as follow: To examine the structure of human capital development in national economic trend; the various means of human capital development in relation to human productivity; the relative size and trends of human capital development and its possible prospects in the emerging global economic growth.

Significance of the Study: The study of this nature is prompted by the slow rate of Nigeria's economic growth despite the huge contribution of the government. Researches on this topic being carried out over the years have not really achieved its prior objective. The effect of human capital development on economic growth holds a lot of benefits to our overall economic progress. The government and its agencies will find this work resourceful in formatting policy, directives and regulations for human capital development to aid economic growth.

Organisation of the Study: This research work is divided into five sections; section one comprises of the introductory background of the study. Section two covers the theoretical framework and literature review while section three majors in the research methodology; section four is discussion and interpretation of results. Section five then covers the summary of findings, conclusion, policy recommendations.

2 Theoretical Framework and Literature

Human Capital Theory: As the global economy shifts towards more knowledge based sectors (e.g., the manufacture of ICT based services, R&D) skills and human capital development becomes a central issue for policy makers and practitioners engaged in economic development, both at the national and regional levels (OECD, 1996). Yet, the impact of education and vocational training activities exert upon changing national and regional economies remains less than thoroughly explained and analyzed. Since the introduction of human capital theory in the 1960s, a number of studies have attempted to address this and other related issues.

Human capital theory views schooling and training as investment in skills and competences (Schultz, 1960 and 1961). It is argued that based on national expectation of return on investment, individuals make decisions on the education and training they receive as a way of augmenting their productivity. A similar strand of studies focuses on the interaction between the educational/skills levels of the workforce and measurements of technological activities (Nelson and Phelps, 1966). According to this theory, a more educated/skilled workforce makes it easier for a firm to adopt and implement new technologies, thus reinforcing returns on education and training. Empirical studies provide evidence supporting the aggregate effects of education and training.

Theories of Human Capital Development and Economic Growth: Contemporary discussions on human capital development and economic growth have been dominated by three theories below:

1) **Human Capital Theory**: This theory shows how education leads to increase in productivity and efficiency of workers by increasing the level of their cognitive skills. Theodore, Schultz, Gory Bucker and Jacob Mincer introduced the notion that people invest in education or as to increase

their stock of human capabilities which can be formed by combining innate abilities with investment in human beings (Babalola, 2000). Examples of such investments include expenditure on education, on- the- job training, health, and nutrition. However, the stock of human capital increases in a period only when gross investment exceeds depreciation with the passage of time, with intense use or lack of use. The provision of education is seen as a productive investment in human capital, an investment which the proponents of human capital theory considers to be equally or even more equally worthwhile than that in physical capital. Human capital theorists have established that basic literacy enhances the productivity of workers low skill occupations. They further state instruction that demands logical and analytical reasoning that provides technical and specialized knowledge increases the marginal productivity of workers in high skill or profession and positions. Moreover, the greater the provision of schooling society and consequently, the greater the increase in national productivity and economic growth.\

2) **The Modernization Theory**: This theory focuses on how education transforms an individual's value, belief and behavior. Exposure to modernization institutions such as schools, factories, and mass media inculcate modern values and attitudes. The attitude include openness to new idea, independences from traditional authorities, willingness to plan and calculate further exigencies and growing sense of personal and social efficacy. According to the modernization theorists, these normative and attitudinal changes continue throughout the life cycle, permanently altering the individual's relationship with the social structure. The greater the number of people exposed to modernization institutions, the greater the level of individual modernity attained by the society. Once a critical segment of a population changes in this way, the pace of society's modernization and economic development quickens. Thus, educational expansion through its effects on individual values and benefits sets in motion the necessary building blocks for a more productive workforce and a more sustained economic growth.
3) **The dependence theory**: this theory arose from Marxist conceptualizations based on the dynamic world system that structures conditions for economic transformation in both the core and periphery of the world economy. Certain features of the world polity such as state fiscal strength, degrees and regime centralization and external political integration may contribute to economic growth in the developing world.

Survey of Empiirical Studies: The literature of endogenous growth theory has stimulated economists' interest in the empirical evidence available from cross country comparisons, bearing on the main level relationship between human capital development and the growth rate of real output.

Pritchett (2001) disclosed that cross-national data shows no association between increase in human capital attributable to the rising educational attainments of the labor force and the rate of growth of output per worker. Specifically, he reports that the estimates of the impact of growth in education capital on growth per workers are insignificant. Few studies in Nigeria however show the direct impact of human capital on economic growth including Okadara (1978), Odusola(1998) and Barro and Sala-i-Martin (1995).

In the Solo-Swan and Ramsey models, the equation describing physical capital accumulation is sufficient to determine the dynamic evolution of output. To specify the growth path when human capital is included, it is necessary to consider an additional sector where the growth of human capital has taken place. Given the physical capital still has diminishing returns,

the required assumption for the model to exhibit a positive growth rate of output per worker in the steady state is that the technology for generating human capital has constant returns; meaning that the growth of human capital is assumed to be the same for a given effort, whatever the level of human capital attained. With the assumption, the rate of output growth (per worker) is positive and increasing in the productivity of education or on-the-job training in the creation of human capital.

However, the empirical implication of these studies is that human capital development, to a large extent affects economic growth positively. In a relatively poor country, higher investment in human capital can enhance growth in the economy. The broad interpretation of these findings in the context of recent growth models is that raising the general level of educational attainments interacts positively with other forces among them, the accumulation of complementary physical capital and the application of new technologies. Higher human capital intensity thus permits countries to accelerate their productivity growth rate and narrow the relative size of per capita real income gaps separating them from the leading economies. Maintaining a high average level of educational attainments and correspondingly high rates of investment in other forms of human capital (e.g., health, internal, spatial and occupational mobility) would appear to serve as a stability force, although not a guarantee against continuing secular decline in a country's relative per capita income position. Most of the theoretical literature on economic growth focuses on the role that investment in formal education plays in modern economies.

Human Capital Development Strategies in Nigeria: An Appraisal - This is to assess the extent to which the government in ensuring human capital development in Nigeria. Although there are many ways to assess the development, however, only a few important ones that are readily measurable shall be considered in this project; they include: Poverty reduction and empowerment of Nigerians in rural and urban areas to be economically productive. Under the poverty reduction program, the government states that the strategy to be employed will be to empower Nigerians both in rural and urban areas to be economically productive with a view of improving their quality of life. To avoid the mistakes of the past, projects and measures to be implemented will be people oriented. The people concerned as stakeholders will take ownership significant improvement in the supply of water, basic educational facilities, (both under the universal basic education (UBE) scheme and mass adult literacy program) and basic health facilities will be embarked upon immediately on nationwide basis (FGN, 1999).

Education: on the basis of the above statement, looking at the scorecard with respect to education, it is discovered that under education: (i) Adult literacy did not improve by any margin. (ii) The number of pupils per primary school increased and the number of pupils per teacher also increased. (iii) The number of pupils per secondary school increased while the number of pupils per teacher is stagnated.

National poverty eradication program (NAPEP): considering NAPEP as one of the national poverty eradication programs, nothing very serious has taken shape as it is yet to identify any tangible project undertaken under this program. Most of the programs under the NAPEP remain on paper. Again, some of the preliminary studies on the content, nature and coverage of the NAPEP show that contrary to the government's pledge to fully involve the stakeholders in determining the projects and to take ownership, the poor were not in any way part of the decision making, as their opinion was neither sought nor their inputs observed.

Model Specification

Generally, specification of economic model is based on economic theory and on the available data relating to the human capital being studied. The study has employed and modified the model formulated in the works of Lucas (1988), Mankiw et al (1992), Gemmell (1996) and Ncube (1999). The formulation below was employed by these scholars.

$$\text{In RGDPGR}_{t} = \alpha_0 + \alpha_1, \text{ In It} + \alpha_2 \text{ InEMP}_t + \alpha_3 \text{ InH}_t + u_t$$

$\alpha_1, \alpha_2, \alpha_3 > 0$

Where, RGDPGR is the growth rate of real gross domestic product, I is investment to GDP ratio, EMP is employment rate, H is human capital proxied by total capital expenditure on health and education, In stands for logarithm transformation.

Intuitively, all the three explanatory variables are expected to have positive effects on the growth level. The model of economic analysis in this study will follow the conventional method, and this, is in reference to the variables of interest in the model above.

$$GDP = F(TGVTEE, TGVTEH, TSE, SCSE, PRYSE, U) \quad (1)$$

This equation is broken down to:

$$GDP = \alpha_0 + \beta_1 TGVTEE + U \quad (2)$$

$$GDP = \alpha_0 + \beta_1 TGVTEH + U \quad (3)$$

$$GDP = \alpha_0 + \beta_1 TSE + U \quad (4)$$

$$GDP = \alpha_0 + \beta_1 SCSE + U \quad (5)$$

$$GDP = \alpha_0 + \beta_1 PRYSE + U \quad (6)$$

Where, GDP = gross domestic product (i.e. dependent variable)

TGVTEE = Total government expenditure on education (i.e. independent variable)

TGVTEH = Total government expenditure on health (i.e. independent variable)

TSE = Tertiary school enrolment (i.e. independent variable)

SCSE = Secondary school enrolment (i.e. independent variable)

PRYSE = Primary school enrolment (i.e. independent variable)

Interpretation of Results

The estimated result shows that a positive relationship exists between GDP and TGVTEE.

GDP	=	β_0 +	β_1 TGVTEE +	β_2TGVTEH +	β_3TSE +	β_4SCSE + β_5PRYSE
	(30144.40)	(538.12)	(-1247.09)	(0.328)	(-0.00594)	(0.002633)
S.E	(29800.79)	(171.4756)	(769.1038)	(0.062079)	(0.007215)	(0.002429)
T-stat	(1.011530)	(3.133225)	(-1.621480)	(5.289473)	(-0.082291)	(1.083750)

R^2 =0.994305

Adjusted R^2=0.992806

Standard error of regression = 13500.59

Standard deviation of dependent variable =159281.9

F- Statistics = 663.4524

Durbin-Watson statistics = 1.481690S

Mean of dependent variable = 369155.5

This implies that a unit increase in TGVTEE will increase the GDP by approximately 53.812% which implies that if the government should increase the total expenditure on education, then economic growth will be achieved. It also shows a positive relationship between GDP and TSE. This implies that a unit increase in TSE will increase GDP by approximately33% meaning that government should invest more in the tertiary institutions in order to enhance economic growth. Again, a positive relationship exists between GDP and PRYSE, meaning that a unit increase in PRYSE will increase the GDP by approximately 0.3%

However, a negative relationship exists between GDP and TGVTEH, implying a reduction in the GDP by 12.4709% due to a unit increase in TGVTEH. The SCSE also has a negative impact on the economy's growth as shown in this analysis by the 0.026 reduction in the GDP due to a unit rise in SCSE. This shows that government should not concentrate on secondary school enrolment. This however contradicts the A priori expectation, notwithstanding, the R^2 which is referred to as the coefficient of determination is estimated as 0.994305, implying that approximately 99% variation in GDP is explained by the explanatory variables, i.e. TGVTEE, TGVTEH, TSE, SCSE and PRYSE. The adjusted R^2 (0.992806) shows how robust the R^2 is.

Test of Significance of Parameters: This involves tests for the significance of each variable in the model. This can be done either by standard error, T-statistics or probability test. In this study, the standard error test is employed in order to determine if the parameter estimates are statistically meaningful or relevant.

Individual test of Significance: Critical values T 0.01= 2.719, T0.05 = 2.024 and T0.1 = 1.606 the T statistics for the variables TGVTEE(3.1332225) and TSE(5.289473) are greater than the critical values at 1%, 5% and 10% levels of sign90ificance, hence, we reject the H0 and accept the H1 and conclude that the variables TGVTEE and TSE are individually statistically significant to the dependent variable GDP. The T statistics for variables TGVTEH, SCSE and PRYSE are (-1.621480), (-0.082291), and (1.083750) are relatively low compared to the critical values at 1%, 5% and 10% levels of significance, hence, we accept the H_0 and reject the H_1 and conclude that the variables TGVTEH, SCSE and PRYSE are not individually statistical significant on the dependent variable (GDP).

Fcal= 663.4524 from the least square results, therefore Fcal > Ftab at 5%, 1% and 10% levels of significance. The comparison of the standard error of the dependent variable (GDP) with the mean of the dependent variable shows that the explanatory variables have impact on the GDP as the value of the mean of the dependent variable is greater than the standard error by 209873.6. As a result, the standard error, being small relative to the mean of dependent variable shows that the model is preferred.

The Value of the Durbin Watson statistics in the result is 1.481690 which shows that there is no autocorrelation since the value is within the acceptance region (i.e. > 0.2 and <5.0)

It is observed that the explanatory variables as represented by TGVTEE, TGVTEH, TSE, SCSE, and PRYSE explain the variation in the dependent variable (GDP) to a large extent. The evidence of this is seen in the high value of the R^2 (0.994305) which implies that about 99% variations in the GDP is explained by variations in the set of variables at the other side of the model (i.e. the independent variables). The model also shows a good fit with the adjusted R^2 of 0.992806. This is good enough for a well behaved model.

Although it is the A priori expectation that TGVTEH and SCSE should significantly affect the GDP, it is not so according to the analysis. Also, PRYSE does not strongly affect the GDP. This could be as a result of the inadequate attention given to these sectors by the Nigerian government. The government must increase their expenditure on the health sector and also improve the standard of education in order to encourage enrolment into schools. However, it is observed that TGVTEE and TSE have strong significance on the GDP and this is shown by the value of their T statistics. The result shows that the multiple regression that collectively evaluates the impacts of the independent variables on the gross domestic product shows that they have significant impact on economic performance of the Nigerian economy with regards to the period 1986 – 2009.

Summary, Conclusion and Recommendation

Summary: The study is aimed at finding the impact of human capital development on economic growth in Nigeria. It provides a systematic approach to the understanding of the importance of human capital development on economic growth, using Nigeria as a case study. The high level of human capital development has increased the utilization of resources both human and material and as expected, there has been a multiplier effect that has led to economic growth in Nigeria. As a result, a high sense of optimism has emerged concerning the benefits of increased continuous development of human skills and abilities. This eventually spilled over into socio-economic and development policies, as many analysts and policy makers now believe that human capital development can offer great gains to developing countries of which Nigeria is a dominant member.

Furthermore, an assessment of the impact of human capital development in the Nigerian economy was made using the enrolment trend in tertiary, secondary and primary schools, and government expenditure on education and health as guide. To statistically and scientifically prove that human capital development has a significant impact on economic growth, a statistical analysis was embarked upon where a multiple regression model was used to evaluate the relationship between human capital development and economic growth for the period of 1985-2009. The multiple regression performed on the model revealed that all the variables accounted for 99% variations in the gross domestic product (GDP) of Nigeria.

Conclusion: High level of human capital development holds the key to the nation's socio-economic development as proved by this research study. Also, human capital development is one of the greatest catalysts of the improvement of the standard of living of the population. The study

shows that human capital development is beneficial and remains an essential tool of economic growth in Nigeria. The primary, secondary and tertiary school enrolments, total government expenditure on health and on education were significantly related to economic growth in Nigeria.

Recommendations: This study recognizes the efforts and challenges of government and other agencies in tackling the tackling the problems of growth and development in Nigeria. From the findings of this research, the following are recommended:

- Efforts should be geared towards improving the standard of education in Nigeria.
- Substantial amount of government budgetary allocation should be directed towards the educational sector.
- There should be establishments of special agencies with the responsibility of improving the skills and capabilities of human capital.

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