

The Impact of Human Capital Development on Economic Growth in Nigeria: 1980-2012

AIGBEDION ISIBOR MARVELOUS

Economics Department, University of Abuja, P.M.B 114, Abuja

Abstract

The paper examines the impact of human capital development on economic growth in Nigeria using data for the period 1980-2012. Econometrics techniques such as Ordinary Least Squares Method and Johanson's Co-integration Test were used to examine the long-run relationship. Evidence from the study suggest that though a long-run relationship exists between human capital and economic growth and the Nigerian human capital development is significantly and positively related to economic growth based on the result. But the link between the human capital development and the real sector of the economy remains very weak. This was due to the fact that some human capital development determinants have negative impact on economic growth in Nigeria and this implies that both the primary and secondary sub- sectors of education in Nigeria are yet to contribute significantly to economic growth. This is sad considering the amount of resources that are being allocated to these sub-sectors of education by the government and other stakeholders in Nigeria. Therefore, this calls for a rethink of our educational agenda and the study also recommended that the educational system should be restructured to meet the needs of the changing society in terms of high-level manpower that will propel the economy to higher levels of productivity, income and rapid economic growth.

Keywords- human capital, Resources, development, education, productivity, Efficiency

I. INTRODUCTION

There is no doubt that the human capital development strategy is a more recent phenomenon in the history of economic development. Economic development programme in the past especially from the 1950s through the 1970s and particularly in developing countries, have placed a heavy emphasis on, and striven for, rapid economic growth with the conviction that economic growth is synonymous with economic development. With such view dominating development thinking for quite a long time, the ultimate objective of development improving the well-being of the people was in many aspects overlooked.

To a large extent, a human being and his capabilities were considered as merely a factor of production of economic growth. Subsequently, the social aspects of development were inadequately taken into account, and the responses were often limited to redistribution of some income supported by the public sector. Inequality and poverty among some segments of the population were often considered as necessary costs for economic growth and development.

In more recent times, however, it has been recognized that such a limited view of development did more harm than good in the process of sustainable economic development. Hence a systematic and human approach to development, which considers human capital development as the center of any meaningful economic development programme has evolved.

This new approach to development got credence from various *Human Development Report (HDR)* published by the UNDP since 1990, which presents a profound and comprehensive analysis on the opportunities and challenges facing human capital development, stimulating policy debate and offering policy recommendations for both global and national actions. At the national level, the HDR encourages countries to evolve a process of expanding choices and development capabilities of the people in all economic, social and cultural activities for a wealthier, healthier, more knowledgeable and meaningful life.

In order words, the HDR sees human development strategy as a way of fulfilling the potentials of people by enlarging their capabilities and this necessarily implies the empowerment of people, and enabling them to participate actively in their own development. It is also a means through which the skills, knowledge, productivity and inventiveness of people are enhanced.

The belief in this philosophy of human development strategy may have prompted the Federal Government of Nigeria to declare in its guiding principles in the 1990-2003 economic policy that "the economy exists for and belong to the people, and at all times the general well-being of all the people shall be the proper measure of performance"[13]. It goes further to state in the same document that, "the strategy to be employed shall be to empower Nigerians in both rural and urban areas to become more economically productive, with a view to improving their quality of life. To avoid this mistake of the past, projects and measures to be implemented will be people- oriented. The people concerned, as stakeholders will be fully involved in determining the projects and will take ownership of the projects"[13].

It is now a generally accepted view that human capital plays a key role in the development of any nation. In fact, the differences in the level of socio-economic development across nations are attributed not so

much to natural resource endowment and the stock of physical capital but to the quality and quantity of human capital.

Human capital development tends to improve the quality and productivity of labour which, in turn, leads to economic growth. Besides acting as an important vehicle of achieving equitable income distribution, human capital development is also a potent means of addressing the problem of poverty, in the words of [16].

Human capital constitutes the ultimate basis for the wealth of the 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 organizations and carry forward national development [3].

Economists had long realized the importance of human capital development in the economic development process. For instance, besides emphasizing the importance of education at various points in the wealth of Nations, Adam Smith specifically includes the acquired and useful abilities of all the inhabitants or members of the society in his concept of fixed capital. Alfred Marshall also emphasizes the importance of education as a national investment and, in his view, “the most valuable of all capital is invested in the human beings. In spite of this awareness, most early Economists still regard physical” as the main component of a country’s productive wealth; they still relegate natural and human resources to the background. It took the effort of [31] and others to rediscover the importance of human capital which has led to a more recent effort to incorporate investment in education into the mainstream of economic analysis [3].

In Nigeria, despite the resources to develop the human capital the economic is not seem to has received the desire changes and growth, to this end this paper is to empirical examine the long-run relationship between human capital development and economic growth in Nigeria, from 1980 to 2012 To this the paper is subdivided into six sections which are: introduction, conceptual issues/theoretical Framework/empirical issues, methodology, empirical results/interpretation/analysis, summary of major findings/policy option and conclusion.

II. CONCEPTUAL ISSUES, THEORETICAL FRAMEWORK AND EMPIRICAL ISSUES

A. Conceptual Issues

In its very general form, human capital refers to the aggregate stock of a nation’s population that can be drawn upon for the present and future production and distribution of goods and services. It comprises of the essential variable (that is knowledge, skill and attitude) available within unit of the nation’s human resources stock. [36], describes human capital as the knowledge, skills, attitudes, physical and managerial effort required to manipulate capital, technology, and land among other things, to produce goods and services for human consumption.

In other words human capital are the totality of human potentials (knowledge, skills, attitude, energy and technology, inherent within a nation’s human resource stock and whose combined effort, if properly developed and harnessed, would yield a high level of labour productivity. [6] Human capital development can therefore be conceived “as the process of developing the skills, knowledge and the capabilities of all the people of the society and which are needed in the labour market for the production of goods and services”.

Another form of human capital development is the individual self-development. This occurs when individuals seek to acquire greater knowledge, skills or capacities through preparation on their own initiatives. However, Human capital can also be developed through improvement in the means of better medical and public health programmes and improvement in nutrition, which and jointly increase the working capacity of people on a man-hour basis as well as over a working life. The improvement in formal education health and nutrition can be both a cause of economic growth and a result of it.

Reference [37] defined human capital development as the process of expanding people’s choices, by expanding human functioning and capabilities. Human development has three essential capabilities or elements: to lead a long and healthy life, to be knowledgeable, and to have access to resources needed for a decent standard of living. Other areas of choice highly valued by people include participation, security, sustainability, and guaranteed human rights.

According to reference [26] the concept of human capital refers to the abilities and skills of the human resources of a country, while human capital development refers to the process of acquiring and increasing the number of persons who have the skills, education health care and experience that are critical for the economic growth and political development of a country. Human capital development, [26] concludes, “Is thus associated with investment in man and his development as a creative and productive person”.

Therefore human capital are all embracing, that is, it is inclusive of persons who work now, or are likely to be productively employed sooner or later. In effect, human capital development encompasses virtually the whole population as its target. Therefore, human capital development is a continuum, a continuing process from childhood to old age, and a must for any society or enterprise that wishes to survive under the complex challenges of a dynamic world.

B. Theoretical Framework

There are three modern theories of human capital development reviewed in this paper which are human capital

theory, the modernization theory and the dependence theory. Human capital theory emphasizes that education increases the productivity and efficiency of workers by increasing the level of their cognitive skills. References [32] and [24] introduced the notion that people invest in education to increase their stock of human capital. The proponents see human capital as the stock of economically productive human capabilities, which can be formed by combining innate abilities with investments in human beings.

Examples of such investments include expenditures on education, on-the-job-training, health and nutrition. Such expenditures increase future productive capacity at the expense of current consumption. However, the stock of human capital increases in a period only when gross investment exceeds depreciation with the passage of time, with intense use or with lack of use. The provision of education is seen as a productive investment in human capital, an investment which the proponents of the human capital theory 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 in low-skill occupations. They further state that an instruction that demands logical or analytical reasoning, or provides technical and specialized knowledge, increases the marginal productivity of workers in high-skill or professional positions.

The Modernization Theory focuses on how education transforms an individual's value, belief and behavior. Exposure to modernizing institutions, such as schools, factories and the mass media, inculcates modern values and attitudes. These attitudes include openness to new ideas, independence from traditional authority, willingness to plan and calculate future exigencies and a growing sense of personal and social efficacy. According to modernization theorists, these normative and attitudinal changes continue throughout the life cycle, permanently altering an individual's relationship to the social structure. The greater the number of people exposed to modernizing institutions, the greater the level of individual modernity attained by the society. Once a critical segment of the population changes in this way, the pace of society's modernization and economic development is quickened. Thus, educational expansion through its effects on individual values and benefits sets in motion the necessary building blocks for a more productive work force and for sustained economic growth.

The Dependence Theory arose from Marxist conceptualizations based on the dynamics of the world system that structure conditions for economic transformation in both the core and periphery of the world economy is based on the human capital development. The proponents argue that the prevalence of foreign investment capital, the presence of multinational corporations, and concentration on exporting of primary products and dependence on imported technologies and manufactured goods constrain long-term economic development. However, 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.

Critics of these have, however, pointed to the evidence of widespread unemployment and its negative impact on economic growth. It was also pointed out that educated individuals with modern attitudes values are causes of brain drain with its deleterious impacts on the stock of trained personnel, potential entrepreneurs and, consequently, on the rate of growth and development. It is not surprising then that many people have become more cautious and skeptical about the presumed positive economic impact of education.

Modern economic growth depends on the accumulation of physical capital and an increase in labour force with improved technological embodiment without which labour cannot be effective. Human capital is a factor influencing labour productivity because it facilitates the absorption of new technology, increases the rate of innovativeness and promotes efficient management [3]. Consequently, for high labour productivity, an integral part of technological progress is investment in human capital and thus is termed endogenous factor because accumulation of physical capital is enhanced by the knowledge, skills, attitudes and health status of the people who partake in such exercise. Thus, there is a strong and positive relationship between human capital development and economic growth.

An endogenous model of economic growth appears to be the most suitable for the study. The model suggests that endogenous factors such as government policies, political stability, market distortions, human capital etc., can significantly affect economic growth. It is a widely used growth model to provide a systemic investigation of the human capital-economic growth nexus. For example, references [34] and [3] used it to assess the role of human capital in the Nigerian economy.

C. Empirical Issues

A lot of studies have attempted to investigate the relationship between human capital and economic growth and these studies have shown mixed results. In his study of 98 countries between 1960 and 1985, [8] using school enrolment rates as proxies for human capital found that the growth rate of real per capita is positively related to initial human capital proxied by 1960 school enrolment rates. Reference [22], augmenting the Solow's growth model, empirically show that the effects of saving or investment and population growth rates are biased upward whenever human capital formation is excluded.

Their model explains nearly 80 percent of the cross-country variation in per capita income, which is

about 30 percent larger than when human capital is excluded. For the categories of countries, (low-income, intermediate and OECD countries), investment in human capital substantially influenced per capita income at 1 percent level of significance.

Reference [15], using varied forms of human capital investment, such as school enrolment, human development and economic liberty index evidently pointed out that human capital formation propels growth in per capita income. Its positive contribution to growth was statistically significant at 1 percent. Besides, the inclusion of the variable reduces the bias often associated with growth models that exclude human capital investment and, hence, the explanatory power of the model.

In contrast, [9] employed a standard growth accounting framework to study the contribution of human capital to economic growth, they found a negative relationship between initial per capita income and growth. Similarly, [28] found a negative impact of education on growth.

There are large numbers of empirical studies that confirm the strong association between health and economic growth. For instance, [10], as cited in [18], provided empirical evidence on the relationship between health variables and economic growth rates and found that health variables play a significant role in determining economic growth rates. They showed this by investigating cross-country data between 1965 and 1990, using a basic growth model, and they found that an increase of life expectancy by one percent accounted for an acceleration of GDP per capita growth by over 3% per annum. In addition, health and demographic variables explained over half of the differences in growth rates between Africa and the rest of the world over that same period.

There are also various studies that address the important issue of gender dimension in human capital investment. For instance, reference [21] examines the impact of gender inequality in education on fertility and economic growth. Using an overlapping generation framework, the paper argues that initial gender inequality in education can lead to a self-perpetuating equilibrium of continued gender inequality, with the consequences of high fertility and low economic growth. In the same vein, reference [32] also argues that reducing gender inequality through access to education and the labour market will help reduce poverty, thereby increasing the rate of economic growth.

Reference [29] explored two way linkages between economic growth and human development empirically with the help of cross-country statistics. The study argues that public expenditures on health and education represent especially important links in determining the strength of the relationship between economic growth and human development. Two chains namely, economic growth to human development and from human development to economic growth can generate self-reinforcing, vicious cycles of development, as well as identifying lop-sided performers.

The study finds that over time lop-sided development rarely carry on: countries initially in favour of economic growth lapse into the vicious category. Hence, even though both human development and economic growth should be encouraged together, human development should be given first priority.

Reference [2] emphasized the role of human resource development and vocational training for economic growth in Pakistan. The study reviewed and analyzed the status of vocational training, related policies and practices and their impact on development of human resource. The effect of the rate and variability of increase in institutions, enrolment and teachers on output growth variability was also explored. As the fluctuations in rate and variability of vocational indicators have serious implications for the output growth variability hence, the output growth variability was regressed on the rate and variability of the institutions, enrolment, and teachers, to find out the growth and the variability impact of the vocational indicators on the output growth variability.

The analysis of the impact of vocational indicators indicates that the long term planning is required to achieve the benefits of current policies. There is positive and significant relationship between the growth of institutions and output growth variability moreover; enrolment and teachers also play a significant role in determining the output growth variability. On the whole analysis shows that both the rate and variability of vocational indicators have positive and mostly significant impact on the output growth variability in the long run.

Reference [1] analyzed the impacts of human capital on economics growth for Pakistan and Sri Lanka. The results of empirical analysis show that primary schooling enrolment rates has negative while secondary and higher schooling enrolment rates has positive and significant impact on economic growth for both countries in the sample. The study has also combined the schooling enrolment rates at different levels of education with employment to generate effective labour input that performed better as compared to simple schooling enrolment rates and it is again concluded that there are important growth effects associated with human capital.

In Nigeria, several studies have emerged in an attempt to provide quantitative evidence to the growth-human capital nexus. References [5] and [23] determine the social and private returns to the different levels of education-primary, secondary and university, using cross-sectional data. On the basis of the positive rate of returns often computed, inference is made about the positive role of human capital on economic growth. [25] Using ordinary least square technique found that human capital, proxied by real capital and recurrent expenditure

on education, is positively related to growth, although the relationship is weak.

The Nigerian Economic Society held a conference on human resource development in Africa in Nigeria in 2002 and several interesting papers were presented. Some of the papers showed a positive and significant contribution of human capital to economic growth ([3], [34], [12]).

Reference [3] undertook an empirical investigation to determine the impact of human capital formation on economic growth in Nigeria between 1970 and 2000, using cointegration and error-correction mechanisms. The results indicate that investment in human capital in the form of education and training can lead to economic growth because of its impact on labour productivity.

[12] Explored the association between human capital investment and economic growth in Nigeria. A number of methodological approaches were employed to examine this link. Specifically, the Granger causality tests were inconclusive on the direction of causality. The variance decomposition analysis shows that “own shocks” constitute the predominant source of variation in employment growth’s forecast errors and income growth’s forecast errors, and that innovations of employment growth can be better predictors of income growth. The impulse response analysis reveals that there are considerable oscillations in the response patterns of income and employment to unanticipated shocks in each other. The paper observed a mismatch between the manpower needs of the country and the skills turned out by the educational system.

Reference [34] provided empirical evidence on the role of human resource development proxied by enrolment in educational institutions on economic growth in Nigeria, using the augmented Solow growth model and relying on co-integration and error-correction methodology. The results showed that human resource development does not only contribute positively to economic growth in Nigeria, but its impact is strong and statistically significant. This occurs despite the decline in the quality of education at all levels since the mid-1980s.

Contrary to the conventional wisdom, [7] study observed that the growth of educational capital shows a significant negative effect on economic growth in Nigeria. This is in line with the studies by [28], [20] and [19]. Could this be interpreted to mean that educational investment is harmful to growth in Nigeria? Due caution must be exercised in interpreting the result. However, several factors might be responsible for this. Some possible explanations offered by the [28] and [7] include the following; (i) existence of brain drain; (ii) the newly created educational capital might have gone into privacy that is, privately remunerative but socially unproductive activities; (iii) incessant strike actions by the academic and non-academic staff of Nigerian universities; (iv) failure of the educational system to provide qualified manpower that would enhance productivity growth; (v) there may be slow growth in the demand for educated labour, so that the supply of educational capital has outstripped demand and returns to schooling have declined.

Reference [4] on the “Paradox of education and Economic Growth in Nigeria” modeled for contribution of education growth. He considered real growth of the gross product (RGDP) as respondent variable and gross fixed capital formation (GFCT), aggregate labour force (LAF) and real budget allocation to education (REDUB) as explanatory variables. He estimated the models in both level form and in logarithmic form respectively. From the two sources, it was observed that the growth of real gross domestic product (RGDP) is positively affected by the amount of physical capital and labour inputs in all the specifications but in most cases they have insignificant effects.

He observed that contrary to a priori expectations, the estimate for the impact of growth in educational capital on the growth of real Gross Domestic Product was consistently negative. That growth in educational capital crowd’s out-growth of GDP was a puzzle.

Reference [27], his work “Role of Human Capital in Economic Development: An Empirical Study of Nigerian Case” the empirical results indicate that there is, indeed a long-run relationship among labour force, physical capital investment proxied real gross domestic capital formation, human capital development and economic growth in Nigeria All the variables appear with the expected positive signs. The variable denoting human capital components i.e. school enrolments at the primary, secondary, tertiary levels comply with the a priori expectations. That is, they have positive coefficients. All the human capital variables except, primary school enrolment are significant in economic growth and development. In his work it is evident that there is a feedback mechanism between human capital investment (at least on secondary and tertiary education) and the real gross domestic product in Nigeria.

III METHODOLOGY

Econometrics methodology is employed in this study as the analytical tool for the examination of the relationship between human capital development and economic growth. Consequently, the Ordinary Least Squares method is adopted to investigate the long-run relationship between human capital development and economic growth. The model states that economic growth is a function of Health contribution to Gross Domestic Product in Nigeria (GCH), Education contribution to Gross Domestic Product in Nigeria (GCE), Primary School enrolment rate (PER), Secondary School enrolment rate (SER), and Tertiary Institutions enrolment rate (TER).

To further examine the relationship between money supply and economic growth in Nigeria, the study employed Johanson's Cointegration Test. The secondary data used for this study covering the period 1980-2010 were obtained from the World Bank Database, Central Bank of Nigeria Statistical Bulletin, National Bureau of Statistics, Global Development Finance Statistics and International Development Statistics.

A. Model Specification

The standard methodology of growth models begins with the neo-classical production function as extended by [3]. It assumes a standard neoclassical production function which begins from a premise that changes in quantities of factors of production account for growth. The neo-classical model is given as:

$$Y = F(A, K, L) \dots\dots\dots(3.1)$$

Where: Y, K, L are aggregate real output, capital and labour respectively, and A denotes technical progress or total factor productivity.

When we differentiate equation (2.1) with respect to time, divide by Y and rearrange the terms, it gives equation (2.2) as:

$$\left\{ \frac{\Delta Y}{Y} \right\} = \left\{ \frac{\Delta A}{A} \right\} + \left\{ F_K \frac{\Delta K}{Y} \right\} \left\{ \frac{K}{K} \right\} + \left\{ F_L \frac{\Delta L}{Y} \right\} \left\{ \frac{L}{L} \right\} \dots\dots\dots(3.2)$$

Where:

- Y/K = Rate of growth of output;
- K/K = Rate of growth of capital;
- L/L = Rate of growth of labour force.
- $F_K F_L$ = Social marginal product of capital and labour respectively;
- $\Delta A/A$ = Hicks neutral rate of change of technological progress.

In this regard, several studies have attempted to integrate exogenous forces with endogenous factors in explaining economic growth across countries by using augmented Solow neoclassical production function. These studies include but not limited to the following; [30], [22], [14], [15] and [12] generally, the impact of human capital on economic growth is incorporated according to the [22] framework and is given below as:

$$Y_{(t)} = K_{(t)} \alpha H_{(t)} \beta (A_{(t)} L_{(t)})^{1-\alpha-\beta} \dots\dots\dots(3.3)$$

Where;

Y is output; K = Physical capital and H = the Human Capital Stock; L=Labour force; A is level of technology and $\alpha, \beta < 1$, implying decreasing returns to capital. By implication, there is a strong and positive relationship between investment in human capital and output growth.

From equation 3.3 linearizing the equation the Y (the output) is function of; K = Physical capital and H = the Human Capital Stock; L=Labour force; A is level of technology, which will give us equation 3.4 as:

$$Y = f(K, H, A, L) \dots\dots\dots(3.4)$$

If equation 2.4 is written as econometrics model we the following equation

$$Y_t = \alpha + \beta_1 K + \beta_2 H + \beta_3 A + \beta_4 L + U_t \dots\dots\dots(3.5)$$

From equation 2.5 it clearly shown that Y (output) is function of K = Physical capital and H = the Human Capital Stock; L=Labour force; A is level of technology. Since this study is to examine the impact of human capital development on economic growth, the equation above re-stated as:

$$Y_t = \alpha + \beta_1 H + \beta_2 L + U_t \dots\dots\dots(3.6)$$

in order to adopted the determinants of Human capital development.

In order to examine the impact of money market on economic growth, variables such as Health contribution to Gross Domestic Product in Nigeria (GCH), Education contribution to Gross Domestic Product in Nigeria (GCE), Primary School enrolment rate (PER), Secondary School enrolment rate (SER), and Tertiary Institutions enrolment rate (TER).

$$\text{If } H \text{ and } L = f(\text{GCH, GCE, PER, SER, TER}) \dots\dots\dots(3.7)$$

$$\text{Thus: } \text{GDP} = f(\text{GCH, GCE, PER, SER, TER}) \dots\dots\dots(3.8)$$

GDP is chosen as proxy for economic growth because it reveals the overall contribution of each sector of the economy. Health and education contribution to GDP and enrolment rates into the three levels of education are chosen as proxy for human capital development because the concept entails investment in health and education. The explanation of the multiple regression model for this study is as follows:

$$\text{GDP} = \beta_0 + \beta_1 \text{GEH} + \beta_2 \text{GEE} + \beta_3 \text{PER} + \beta_4 \text{SER} + \beta_5 \text{TER} + \mu \dots\dots\dots(3.9)$$

Where:

- β_0 = Intercept of the equation
- GCH = Health contribution to GDP.
- GCE = Education Contribution to GDP.
- PER = Primary School Enrolment Rate.
- SER = Secondary School Enrolment Rate.

TER = Tertiary Institutions Enrolment Rate.

μ = Stochastic error term

$\beta_1, \beta_2, \beta_3, \beta_4,$ and β_5 are estimate parameters.

Taking the natural log of equation 3.9 above, we derive the equation below:

$$\ln GDP = \beta_0 + \beta_1 \ln GCH + \beta_2 \ln GCE + \beta_3 \ln PER + \beta_4 \ln SER + \beta_5 \ln TER + \mu \dots \dots \dots (3.10)$$

The a priori expectations of the multiple regression model for the coefficients are as follows: $\beta_1 > 0; \beta_2 > 0; \beta_3 > 0; \beta_4 > 0; \beta_5 > 0.$

Positive signs are expected for the coefficients of the explanatory variables, that is positive relationships between GDP and GCH, GDP and GCE, GDP and PER, GDP and SER, and GDP and TER.

IV. EMPIRICAL RESULTS, INTERPRETATION AND ANALYSIS

A. Unit Root Tests

The unit root test was conducted to ascertain the stationarity of the data before estimation using both the Augmented Dickey Fuller (ADF) and the Philips-Perron (PP). The results of the test presented in Table I show that all the variables (except the Primary School enrolment rate (PER), Secondary School enrolment rate (SER), and Tertiary Institutions enrolment rate (TER)) are stationary at levels at 1 per cent significant level.

Since all the variables (except the Primary School enrolment rate (PER), Secondary School enrolment rate (SER), and Tertiary Institutions enrolment rate (TER)) in the model are stationary at levels at 1 per cent significant level, the hypotheses that state the presence of unit roots in all the variables under consideration (except the Primary School enrolment rate (PER), Secondary School enrolment rate (SER), and Tertiary Institutions enrolment rate (TER)) are rejected. This shows that all the variables included in the model are stationary at level while the Primary School enrolment rate (PER), Secondary School enrolment rate (SER), and Tertiary Institutions enrolment rate (TER) are stationary at first difference at 1 per cent significant level.

Given the unit-root properties of the variables, we proceeded to conduct the cointegration test to ascertain the long-run relationship between human capital development and economic growth.

TABLE I
UNIT ROOT TEST RESULTS

Variables	ADF Test Statistic		Philips-Perron Test Statistic		
	Level	1 st Difference	level	1 st	Difference
GDP	5.432	-0.4256	1.599	-5.176	I(0)
GCH	2.908	3.0046	6.829	4.8642	I(0)
GCE	5.279	1.6385	11.158	1.3470	I(0)
PER	-0.939	-3.108	-1.198	-4.464	I(I)
SER	-1.239	-3.707	-1.510	-3.736	I(I)
TER	-0.885	-4.559	-0.919	-6.385	I(I)
1% Critical	-3.6752	-3.6852	-3.6661	-3.6752	
5% Critical	-2.9665	-2.9705	-2.9627	-2.9665	
10% Critical	-2.6220	-2.6242	2.6200	-2.6220	

**indicates significant at 1% or a rejection of the null hypothesis of no unit root at the 1% level*

B. Johansen Cointegration Test Results

The Johansen cointegration test result in Table II shows the existence of two cointegrating equations at 5% significance level in the model. The hypothesis which states there is no long-run relationship between human capital development and economic growth is rejected at 5% significance level. This implies that there exists a long-run relationship between human capital development and economic growth in Nigeria.

TABLE II
JOHANSEN COINTEGRATION TEST

Date: 01/25/14 Time: 11:09
 Sample: 1980 2012
 Included observations: 31
 Test assumption: No deterministic trend in the data

Series: RGDP GCH GCE PER SER TER
 Lags interval: 1 to 1

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.753709	111.0280	82.49	90.45	None **
0.710742	70.39203	59.46	66.52	At most 1 **
0.362152	34.41942	39.89	45.58	At most 2
0.305066	21.37941	24.31	29.75	At most 3
0.225435	10.82518	12.53	16.31	At most 4
0.111151	3.417023	3.84	6.51	At most 5

*(**) denotes rejection of the hypothesis a 5 % (1%) significance level L.R. test indicates 2 cointegrating equation(s) at 5% significance level

C. The Long Run Regression Results

Having conducted the unit root and cointegration tests, we proceeded to obtain the long-run results of the relationship between human capital development and economic growth using the ordinary least squares method. The result presented in Table III reveals that all the variables in the model (except the Education contribution to Gross Domestic Product in Nigeria (GCE), Primary School enrolment rate (PER)) satisfy the a priori expectations with respect to their signs. But the Education contribution to Gross Domestic Product in Nigeria (GCE), Primary School enrolment rate (PER) has negative impact on economic growth. The result further shows that the Education contribution to Gross Domestic Product in Nigeria (GCE) has significant impact on economic growth at 10 percent significant level in the long-run. This means that a unit increases in the Education contribution to Gross Domestic Product in Nigeria (GCE) will decrease gross domestic product by 2.18 percent. Similarly, the Primary School enrolment rate (PER) has a negative and statistically insignificant impact on growth at 10 percent significant level in the long-run. The impact of the Secondary School enrolment rate (SER) and Tertiary Institutions enrolment rate (TER) on growth though positive but are not statistically significant at 10 percent significant level in the long-run. On the other hand, Health contribution to Gross Domestic Product in Nigeria (GCH) has positive and statistically significant impact on growth. This means that a unit increases in Health contribution to Gross Domestic Product in Nigeria (GCH) will increase gross domestic product by 1.784 percent in the long-run. The adjusted R² of 0.838 percent indicates that 84 percent of the variations in the dependent variable are explained by variations in the independent variables and the Durbin Watson statistic of 1.66 suggests that the model is free from serial auto correlation.

TABLE III
THE LONG RUN REGRESSION RESULTS

VARIABLES	COFFICIENT	STANDARD ERROR	T-STATISTICAL	PROB.
InC	1.784	2.0919	0.853	0.4016
InGCH	3.734	1.1264	3.314	0.0028
InGCE	-2.1843	1.0494	-2.0815	0.0478
(D)InPER	-0.3534	0.4777	-0.7398	0.4663
(D)InSER	0.5453	0.4455	1.2239	0.2324
(D)InTER	0.0863	0.1247	0.6919	0.4953
R-SQUARE	0.838			
ADJ R-SQUARE	0.806			
F-STATISTIC	25.96154			
D-W STATISTIC	1.656993			
PROB	0.00000000			

Source: author's Computation from E-views software 7.0

V. SUMMARY OF MAJOR FINDINGS AND POLICY OPTIONS

From the result analysis, it is very clear that the human capital development in any developing country like Nigeria become vital for economic growth, out of 5 variables used 3 variables are positively related to GDP while 2 have negatively to related to GDP and 2 out of 5 variables are statistically significant, but given the R^2 the equation shows that there is a significant relationship between human capital development and economic growth. Therefore, we reject the null hypothesis and accept the alternative hypothesis of the study. This suggests that Nigerian economy is partly determined by the level of human capital development, particular the level of health care services and the activities of tertiary education system in Nigeria if well handled.

The result shows that the tertiary institutions have positive impact on the economic growth in Nigeria but the impact is not felt because of the poor management and control of tertiary education sub-sector to yield output that will lead to an increased productive, this also implies that our tertiary education have the potential for economic growth in Nigeria only if the stakeholders can come together to draw agenda that will put the economy on the high track for technological development and for more productive projects than just education for administrations and polities.

The negative relationship of the primary educational system to the economic growth in Nigeria suggests that the primary education sub-sector does not have much impact in the short term impact, but there is long term, since it is the foundation for education in Nigeria. Therefore, there is a need for proper management of this sub-sector of education.

It is common knowledge that the rapid growth experienced by the South East Asian countries is due mostly to the presence of large stocks of high-level science and technology manpower. Besides, in the past decade, the Nigerian tertiary institutions have been characterized by incessant strikes and disruption of academic activities, leading to shorter academic calendar. This coupled with poor facilities such as ill-equipped libraries, laboratories, lack of teaching and research materials, inadequate classrooms etc. have resulted in the production of graduates who lack the basic skills necessary for rapid economic growth of the Nigerian economy.

Many graduates are unemployed, roaming the street while are some are under- utilized having very low paid job from the Nigeria Bureau Statistic the rate of unemployment of 11.79 percent in 2005 has increased to 12.29 percent in 2010.

Based on these finding the following recommendations were made. Firstly, the educational system should be restructured to meet the needs of the changing society in terms of high-level manpower that will propel the economy to higher levels of productivity, income and rapid economic growth.

Secondly, the government should also increase its spending on social and economic infrastructure in order to enhance the efficiency of labour and increase productivity, and by implication, economic growth and situation where school leavers and graduates are unemployed and roaming the streets should not be condoned.

Thirdly, there is need for better economic and political governance throughout the country. State governments should promote transparency, accountability, the rule of law and popular participation by the people as essential ingredients of good governance and human development. Peoples' human rights should be respected and deliberately promoted. Corruption should be regarded by all as evil and anti-people, as such existing anti-corruption laws should be more effectively enforced.

VI. CONCLUSION

The study focuses on the impact of human capital development on economic growth in Nigeria, 1980-2012. Ordinary Least Squares was used to determine the long-run relationship between human capital resources and economic growth in Nigeria. Neo-classical production function model was adopted in this study and the results of the study revealed that investment in human capital in the form of education and health can lead to economic growth because of their impact on labour productivity especially the health variable. However, the gains can be maximized if the quality of education is given to the human resources in this country, and if they are fully utilized, productive capacity and rapid economic growth will be promoted in Nigeria.

The results also showed that health care services play a great role in human capital development which in turn will enhance labour productivity that will eventually foster economic growth. In addition, the health sector has much significant impact on economic development than the education sector. Both the primary and secondary sub- sectors of education in Nigeria are yet to contribute significantly to economic growth. This is sad considering the amount of resources that are being allocated to these sub-sectors of education in Nigeria. This calls for a rethink of the educational agenda and goals in Nigeria.

Finally, the results show that the tertiary educational variable has a positive relationship with economic growth in Nigeria. Its contribution is far less than expected from the sector whose expectation is to train and develop skilled manpower for productive and sustainable economy, has failed to achieve its goals in Nigerian economy.

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