Jack Etim Idongesit & Gissor Vincent PhD.

THE IMPACT OF HUMAN CAPITAL DEVELOPMENT ON ECONOMIC GROWTH IN NIGERIA (1980-2014)

JACK ETIM IDONGESIT
Department of Economics,
Faculty of Humanities, Management and Social Sciences,
Federal University Wukari, Taraba State.

GISSOR VINCENT PhD.
Department of Economics,
Faculty of Humanities, Management and Social Sciences,
Federal University Wukari, Taraba State.

ABSTRACT

A nation cannot experience economic growth without human capital and for human capital to actually have any impact on economic growth some investments have to be made. Investment in human capital consists of; investment in education, training, health and other social services that will help in enhancing the productive capacity of labour. This project examines the impact of human of capital development on economic growth in Nigeria from 1980-2014, The study used the ordinary least square technique (OLS) to determine the relationship between human capital development and economic growth. The research result shows that foreign direct investment does not have much impact on economic growth while human capital which was proxied by total government expenditure, labour and gross capital formation, has an impact on economic growth. Comparing Nigeria to most countries we can see that the rate of investment in human capital is low. Therefore in order to increase its formation and thereby accelerate economic growth, much attention should be paid to expenditure on education, health and other socio-economic infrastructure that will enhance the productivity of labour. Attempts should be made to restructure the educational system to meet the challenges of the society. The government should furthermore try to ensure a stable macroeconomic environment that will encourage increased investment in human capital by private bodies, religious organization and individuals.

Keywords: human capital, labour, growth, production & organisation

Introduction

The concept of human capital refers to the abilities and skills of human resources of a country, while human capital development refers to the process of acquiringand increasing the number ofpersons who have the skills, education and experience that are critical for economic growth and development of a country's economy (Okojie, 2005). While economists

have long paid close attention to the concept of investment in physical capital in recent years, they have placed emphasis on the concept of human capital investment. Largely, this shift occurred as a result of the failure of classical economist's theory to explain the dominance of developed countries over undeveloped ones in the international market. Human capital covers a broad range of concepts but the most essential feature is increased productivity through investing in employees, it can mean education acquired from elementary school level, training of basic reading and writing skills, to job "raining, both of general and specific skills.

The use of the term human capital in the modern neoclassical economic literature dates back to Jacob Mincer pioneering article "Investment in Human Capital and Personal income distribution" in the Journal of Political Economy1958, and the best known application of the idea of 'Human Capital' in economics revolves around the work of Gary Becker of the Chicago school. Becker's book entitled Human Capital published in 1964 became a standardreference for many years. According to Gary Becker; Human Capital is similar to "physical means of production" [example factories and machineries] one can invest in human capital [via education, training and medical treatment] and one's income depends partly on the rate of return on the human capital one owns, which allows one to receive a flow of income which is like interest earned. Human capital is substitutable though it will not replace land, labour or capital it can be substituted for them to various degrees and be included as a separate variable in a production function.

Human capital can also be defined as a way of defining and categorizing people's skills and abilities as used in employment and otherwise contribute to the economy. It is also used to refer to the skills and knowledge intensity of the labour force in an economy which are essentially acquired through schooling and training.

The Organization and Economic Co-operation and Development (OECD) define human capital as "The knowledge, skills competences and attributes embodied in individuals that are relevant to economic activity" (Schuller 2001) while duration of schooling and levels of qualification are the standard measures.

Laroche et al (1999) further extend this notion to include "innate abilities". Innate abilities are;
1. They are not part of the physical body and there is therefore no chance of double counting.
2. They cannot be separated from such things in human capital such as experience.

Nakamura (1981) defines human capital broadly as labour skills, managerial skills and entrepreneurial and innovative abilities plus such physical attributes as health and strength,Newland and San Segundo (1996) sees human capital as that ability and education of an individual and on the other hand as the costs of physically raising a child and health.

Human capital refers to a conscious and continuous process of acquiring requisite knowledge, education, skills and experiences that are crucial for the rapid economic growth of a country (Harbison 1973, Salleh 1992). It involves investment in education, training and other social services like transport facilities and housing. Underdeveloped countries are faced with two diverse manpower problem; they lack the critical skills needed for the industrial sector and have a surplus labour force. The existence of surplus labour is to a considerable extent due to the shortage of critical skills and these problems are interrelated.

The need for investment in human capital formation in such economies is more obvious from the fact that despite the massive imports of physical capital they have not been able to accelerate their growth rate because of the existence of undeveloped human resources although growth of course is possible from the increase in the conventional capital even though the available labour force is lacking in skills and knowledge growth rate will be seriously limited without the latter. Human capital is then needed to staff and expand governmentservices to introduce new system of land use and new methods of agriculture; it develops new means of communication to carry forward industrialization andto build the educational system.

People are the most important asset a nation can have and there cannot be anyform of economic development if the people don't develop themselves.When we talk about human capital the capital being referred is the oneembodied in human beings that yield income and other useful outputs overlong period of time it could be schooling, a computer training course,expenditure of medical care and lectures on the virtues of punctuality andhonesty are also capital. It raises earnings, improve health, oradd to a person's good habit over much of his lifetime. Expenditures on education, medical care and so on are called investmentin human capital; they are called human capital because people cannot beseparated from their knowledge, skills health or values in the way that they can be separated from their financial and physical effect (Gary 1V64).We can therefore say that it is those innate abilities and various skills acquiredby a person that makes up his capital. Due to this factor there can be nosignificant economic growth in any economy without adequate human andnatural resources. We stock of human capital like the stock of natural andphysical capital will deteriorate and decay if not increased and maintainedthrough improvements in public health and sanitation, social welfare services, good nutrition and guaranteed employment schemes. The human capital formation indices should be integrated into the planning process in order toachieve a sustainable growth and development. The importance of human capital formation can be seen in the Khartoum

Declaration of 1998 which asserted that, "....The human dimension is the sine qua non of economic recovery..." No SAP or economic recovery programmeshould be formulated or can be formulated or can be implemented withouthaving at its heart detailed social and human priorities. There can be no realstructural adjustment or economic recovery in the absence of the humanimperative (Adedeji et al 1990).For a nation to be termed or described as developed it must have the followingcharacteristics and according to (Todaro2003) these are;

1. To raise levels of living including, in addition to higher incomes, the provision of more jobs, better education and greater attention to cultural and human values all of which will serve as not only to enhance material well-being but also to generate greater individual and natural self-esteem.
2. To increase the availability and widen the distribution of basic life sustaining goals such as food, shelter, health and protection.
3. To expand the range of economic and societal choices available to individuals and nations by freeing them from servitude and dependence not only in relation to other people and nation states but also to the forces of ignorance and human misery.

If these three objectives are anything to go by then we can rightly say that Nigeria is still underdeveloped and exhibiting the characteristics of a low -income developing country this includes low levels of living, low per-capita national income, income inequality, poverty etc.

Nigeria can be categorized as a country that is primarily rural, depends on primary product, exports, has high population growth, suffers from widespread poverty and rising unemployment and must deal with tribal and ethnic conflicts- Since the advent of Nigeria's independence in 1960 it has experienced ethnic, regional and religious tensions, magnified by the significant disparities in economic and educational development between the south and the north.

Nigeria's social indicators placed it among the poorest in South Saharan Africa with a human development index of 0.401 was ranked 137th among 174 developing countries considered in 1993(Odusola 1998). Infant mortality rate was about 144 per 1000 live births in 1981 (Odusola 1998). The performance of the economy has not been satisfactory, from 1980s using conventional indices. The periods 1960-65, 1970-75, 1976-80, 1981-85 and 1986-92 are very significant and they represent important episodes in the economy. The 1960-65 period attempts to capture both the independence and the commodity export boom at that time. The period 1970-75 reflects the era of oil windfall while 1976-80 period incorporates part of the oil boom and austerity measures and various stabilization packages finally, the period represents the structural adjustment years.

The oil boom and the consequent neglect of agriculture in the 1970s and early 1980s caused a massive movement of people from rural to urban centres. Moreover regional and income disparities are among the worst in the world (Todaro2003).For Nigeria to turn the tides of its economic misfortune and mismanagement, which includes a high rate of unemployment, poverty, illiteracy and so on, it will have to take steps to raise domestic food production and labour productivity; use oil revenues more rationally to diversify economic activity and reduce the burden of its' foreign debt; lower population growth through a combination of effective family planning programme Improved rural health and education and a reduction in absolute poverty: seek increased foreign aid and investment, including significant debt relief (which was achieved recently): make greater use of market price incentives to allocate resources while endeavouring to improve public and private decision making and maintain political stability between rural ethnic and religious groups (Todaro2003).

All these can rightly be achieved through human means and therefore the role of human capital to economic growth cannot be overemphasized and the development of human capital has been recognized to be an important prerequisite and an invaluable asset for a country's socio-economic and political transformation. Over the years, with the large population, Nigeria has not been able to do much in terms of economic development and poor leadership was blamed for the nation's underdevelopment. This brings about the question; does the large human resource available not able to affect economic growth? The answer to this question is clear in the sense that most countries which are less populated then Nigeria has done relatively well in economic good. Taking the case of Japan for example, it was a highly populated country that was able to harness its large human resource and transform the country into a developed

one. In the view of the fact that populated countries can still achieve economic growth, this study is embarked upon to assess the impact of human capital on economic growth in Nigeria.

Statement of the Problem

"There can be no significant economic growth in any country without adequate human capital development"'. In the past, much of the planning in Nigeria was centred on the accumulation of physical capital for rapid growth and development, without recognition of the important role played by human capital in the development process". This view was expressed by [Ogujiuba *et al,* 2003] they are of the view that people are a country's most valuable assets. Going by this view, investment in human capital in terms of education, on-the -job training and health will surely raise productivity in Nigeria. Much is still to be desired in educational and health sector of the economy as we have seen that investment in human capital was the triggering factor that led to the economic growth in other developed countries. In the light of this, the following questions and more will need to be answered in order for human capital to takeits place in the growth process and planning horizon of Nigeria these questions include:

1. How strong and significant will an increase in investment in education have on the economy.
2. Does education and health have any link in the increase in productivity?

Research Objectives

This study is aimed at examining empirically the effect of human capital on economic growth and the specific objectives of the study include;

1. To ascertain the impact of education on economic growth in Nigeria.
2. How openness to trade and human capital promote faster economic growth.
3. To make policy recommendations based on the findings of the research.

Research question

The questions this research tends to answer includes amongst others the following;

1. Does education have any impact on economic growth?
2. Does the labour force available in a country have any impact on economic growth?
3. Does domestic capital have any effect on economic growth?

Research Hypothesis

Based on the research work being carried out; the hypothesis is stated below; Ho: Education has impact on economic growth.

Scope of the Study

The scope of the study will cover the year 1980 to2015 and it will be restricted to the Nigerian economy.

Significance of the Study

The significance of this study on the impact of human capital on economic cannot be over emphasized as the result will help in policy making. The study is to help come to a solution on how to accelerate economic growth.

Concepts of Human Capital

Jack Etim Idongesit & Gissor Vincent PhD.

The role of human capital in economic growth cannot be overemphasized as human beings constitute the key development input as producers and at the same time the key beneficiaries of economic growth. This is because natural and physical resources would lie idle and remain unexploited without man. In line with (Yesufu, 2000) believed that without labour all the factors of production are passive (Oladeji *et al,* 1996). Further underscore the importance of human capital in the development process. According to them human resource is a critical variable in the growth process and worthy of development. They are not only means but more importantly the ends that must be saved to achieve economic progress. It is apparent that the underdevelopment and underutilization of the skills and knowledge of the people of a country will lead to economic retardation of such a country. This is because ignoring human capital in the growth process would mean lowering the productive capacity of such an economy and hence, reducing growth, since a healthy and well educated people make an economy more productive and this propels growth.It has been posited by Lucas (1998) that human capital formation has contributed immensely to economic growth. This has been achieved through increased knowledge, skills and capabilities acquired through education andtraining by all the people in the country. Schultz (1961) has identified five ways of developing human resources. Namely;

1. Investment in health facilities and services, broadly conceived to include all expenditures that affect life expectancy, strength and stamina, and the vigour and vitality of the people.
2. On-the-Job training including old-type-apprenticeships organized by firms.
3. Formally organized education at the elementary, secondary and higher levels.
4. Study program for adults that are not organized by firms including extension programs notably in agriculture.
5. Migration of individuals and families to adjust to changing job opportunities.

Human capital investment is an important factor in modern economic growth and it has direct effect on economic growth through a number of different channels, the most important of which are increases in productivity and the increased rate of technological progress and diffusion. Investment in human capital is also required to raise the general living standards of people and this is possible when education and training makes fuller and rational utilization of surplus manpower by providing larger and better job opportunities in both rural and urban areas. The two human capital proxy; education and health are treated together because of their close relationships. Health is central to well-being and education is essential for a satisfying and rewarding life. A greater health capital may improve the return to investments in education in part because health is an important factor in school attendance and in the formal learning process of a child. A longer life raises the returns to investment in education and on the other hand; greater education capital may improve the returns to investments in health because many health programs rely on basic skills often learned at school. Education is also needed for the formation and training of health personnel. Education is a sound economic investment for individuals and families because it raises the quality of life, improves health, productivity and living standards, increases individuals access to paid employment and emancipate them for social and political participation in the economy (Thomas 1991). When a sound macroeconomic policy is put in place investments in education raises per capita GNP and

reduces poverty because better educated parents are more likely to ensure the education of their children and also attend to the health requirements of their wards. Okogie, (1995) succinctly puts it "attention to health and leisure has resulted in tremendous savings due to reduced illness, longer life expectancy and increased vitality".

The Nigerian government which is the main employer of labour should play a leading role in human capital investment activities as investments in education and health per person per year was estimated to be about $63 compared to other developed countries like the republic of Korea which invested as high as $160 per person per year, Malaysia invested $150 at the same period. ClearlyKorea and Malaysia witnessed rapid growth because of the huge human capital investment in human resources (Okogie, 1995). But in Nigeria government expenditure on real health and education declined by about 60 perent and 70 percent between 1980-1983 and 1987-1989 (Husain *et al* 1994).Inadequate funding of education coupled with poor facilities in school and deficiency in science facilities resulting in improper manpower mix.

Yesufu (2000) For effective and speedy development of human resources in Nigeria, the government and beneficiaries (students and parents), employers and other stakeholders in the society should share the responsibility of financing education and training. The government should concentrate and intensify efforts in the funding of primary and secondary education as these levels provides a solid foundation for human capital formation in any country since basic literacy and upward movements in education and training hierarchy depends on these levels. It has been universally acclaimed that investments in human capital through education has substantially increased productivity and economic development (World Bank 1990) and the East Asian miracle is an attestation to this fact. In that economy rapid growth was facilitated by the availability of highly skilled domestic engineers and workers who could have productive use of foreign knowledge and imported capital. In a study on, productivity growth in Japan Hamada and Honda (1995) found that rapid growth resulted from huge investment in human capital through on-the-job training from where workers acquired specific skills that enabled them adapt more easily and quickly to imported technology. In a study of thedeterminants of real GDP, (Psacharopoulous, 1985) examined 58 countries during 1960-1985. He found that education which is investment in human capital is highly significant and positively related to aggregate output. In another cross country analysis of the effect of human capital formation or per capita income, (Mankiw *et al* 1992) using an augmented model with human capital explaining nearly 80 percent of the variations in per capita income which is about 30 percent larger than when human capital is excluded. The implication is that investment in human capital substantially influenced per capita income which is about 30 percent larger than when human capital is excluded. The implication is that investment in human capital substantially influenced per capita income at 1 percent level of significance. Mbanefoh 1980, undertook a cost benefitanalysis of university education in Nigeria and found that university education boosts productivity and hence growth when the discount rate is between one and ten.

According to Guisan (1996), education has been considered as an additional input in the production function with a positive effect over the GDP growth and studies have also shown that poor health conditions in developing countries also harm the productivity of adults. Statistical methods have shown that a large part of the effect on health on raising earnings is

due to productivity differences it is not just the reverse causality that higher wages are used in part to purchase better health (Todaro 2003).

In developing countries including Nigeria, there is greater inequality in educational opportunities among other areas, and this is due to culturaltradition of such societies. Investment in female education is therefore considered a waste in patriarchal societies either because of poverty, tradition or parental bias [Schultz 1994]. Therefore rescuing gender inequality through greater access to education and the labour market will help to reduce poverty in Nigeria, thereby increasing the rate of economic growth. There is need to increase investment in the human capital of women alongside that of men to ensure rapid and even growth.

Economic Growth

Economic growth is the increase in the amount of goods and services produced in economy overtime. It is conventionally measured as the per cent rate of increase in real gross domestic product, or real GDP. Growth is usually calculated in real terms, inflation adjusted terms, in order to net out the effect of inflation on the prices of goods and services produced. In economics, "economic growth" or economic growth theory typically refers to potential output i.e. production at "full employment" which is growth in aggregate demand or observed output (Wikipedia, 2013).

Milton (1980), in the works of Idowu (2005), views economic growth first as the rate increase in an economy full employment and real output or income overtime. Secondly, he defined economic growth as the rate of increase in an economy's per capita full employment in real GNP or GDP. From this classification, the first of these measures has been employed to describe the expansion of nations economic output while the second is used to express thedevelopment of a country's material standard of living and to compare it with that of other nations.

The Determinants of Economic Growth

The process of economic growth is determined by two types of factors; economic and non-economic factors. Economist regard factors of production as the main economic forces that determine growth. The growth rate of the economy rises or falls as a consequence of changes in them. Some of the economic factors are explained below:

i. **Natural Resources:** The principal factors affecting growth of an economy is the natural resources or land. "Land" as used in economics includes natural resources such as the fertility of land, its situation and composition, forest wealth, mineral, climate, water resources, sea resources, etc. A country which is deficient in natural resources will not be in a position to develop rapidly. As pointed out by Lewis "other things being equal, men can make better use of rich resources than they can of poor".

ii. **Capital Accumulation:** Capital means the stock of physical reproduction of factors of production. When the capital stock increases with passage of time, it is called capital accumulation (or capital formation). Capital formation is essential to meet the requirement of an increasing population in such economics. Investment in capital goods not only raises production but also employment opportunities.

iii. **Technological Progress:** Technological changes are regarded as the most important factor in process of economic growth. Changes in technology lead to increase in production.

Education in Nigeria

The human capital theory emphasizes how education increases the productivity and efficiency of workers by increasing the level of their cognitive skills. The provision of education is seen as a productive investment in human capital investment which the proponents of the human capital theory considers to be equally worthwhile than that in physical capital. Education can be defined as the social mechanism designed to bring about in the persons submitted to it, certain skills and attitudes that are judged to be useful and desirable in his society (O'Connell 1964).

The Nigerian educational research council in 1951 also described education as the process by which the young of the family are prepared for happy and useful membership of the world into which they are born.Education is a big industry in Nigeria, and it affects everybody. Even right from the colonial era, education was regarded as the missing link in National development. The general belief even till date is that there is a high positive relationship between increased educational expansion and economic development. At present, Nigeria operates a 6-3-3-4 education system which replaced the 6-5-2-4 system inherited from the colonial masters.

In 1960, there were 15,703 primary schools in Nigeria and total enrolment was 2, 912,600 (Vision 2010 report 1997) By 1970 enrolment had risen to 35 million while the number of primary schools stood at 14, 902 Besides enrolment, the primary education drop-out rate has been high According to CBN(2000), the drop-out rate for both male and female pupils decelerated from 42O in 1986 to 29.8% in 1992 and 25% in 1994 before rising to 4325 in 1995 (Uwatt 2000). The importance of education as a means for enhancing economic growth in Nigeria cannot be overemphasized since it contributes to economic growth. This is why Nigeria since the time of independence has witnessed a rapid expansion in higher education. The history of higher education dates back to 1932, when the British government established Yaba Higher College in Lagos in response to pressure from several quarters (Adedeji *et al* 2000). The Elliot commission on higher education in 1945 observed that the demand for educated Africans outruns the supply and they recommended that a university be established in Nigerian in line with this, Ibadan University College was established in 1948 with 104 students of the former Yaba College When the regions in Nigeria attained internal self government the University of Nigeria was established on 7th October 1960, following the oil boom and the geographical restructuring of Nigeria into twelve states, the demands for more universities became strident. This led to establishing seven additional universities.

By the middle of 1990, the number of federal universities had grown to twenty four with numerous colleges of technology, polytechnics and colleges ofeducation. Sequel to the expansion of tertiary institutions and population growth, total student enrolment increased at an unprecedented rate. The expansion of educational facilities has persisted to date. For instance in the universities, total student enrolment increased from 276,440 in 1995/96 to

about 319920 in the 1998/99 academic year showing an average annual increase of about 4.0%. Graduate turnout correspondingly grew from about 49,950 to 61,750 over the same period, representing an average annual of about 2.0 % [Chete]. In the case of the colleges of education, their number increased from 58 in 1995/96 to 61 in 1998/99 and total student enrolment from about 19,630 to 21,150 between 1995/96 and 1998/99 academic years [Adeoye]. In general, it appears that the government is aware of the crucial need to develop human resources in order to achieve economic growth and social development.

Theoretical Framework

The conventional neoclassical growth theory which was modelled by Robert Solow (1956) is of the view that Growth occurs from the accumulation of physical capital and an increase in labour force with improved technology. Human capital is a key determinant of labour productivity because it facilitates the absorption of new technology, increases the rate of innovativeness and promotes efficient management (Adamu 2000). For high labour productivity, an integral part of technological progress is investments in human capital and this is termed endogenous factor because accumulation of physical capital isenhanced by the knowledge, skills and attitudes of the people who partake in such exercise (Mankiw et al 1992; UNDP 1996; Lucas 1998). Economic growth is as a result of the accumulation of physical capital and an 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 changes in quantities of factors of production accounts for growth (Solow 1957, Khan 1997, lyoha 2000). The model allows for diminishing returns, perfect competition but not externalities, following 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 way. Solow uses the aggregate production function;

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

Where Y= aggregate real output

K= stock of 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;

$$Y = A \ (t) \ F \ (K, L)\ldots\ldots\ldots 2$$

Where A (t) = index of technical change which is called total factor productivity (TFP).

Total factor productivity represents the efficiency with which the production function transforms 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 institutions encourage productive activity and effort and the management skills of producers and entrepreneursVan Dan Berg:2000)

Now differentiating equation 2 totally with respect to time and dividing by Y, we have:

$$\frac{\Delta Y}{Y} = \frac{\Delta A}{A} + \frac{A\delta F}{\delta V} \frac{\Delta K + A}{V} , \frac{\delta F}{\delta L} \frac{\Delta L}{Y} \dots\dots\dots\dots..3$$

Where δ = time derivatives.

Equation 3 can further be expressed as;

$$\frac{\Delta Y}{Y} = \frac{\Delta A}{A} + \frac{A\delta F}{\delta K} \frac{K\Delta K + A}{Y \; K} , \frac{\delta F}{\delta K} \frac{L}{Y} \frac{\Delta L}{L} \dots\dots\dots\dots..4$$

$$\frac{\Delta Y}{Y} = \frac{\Delta A}{A} + \frac{\delta F}{\delta K} \frac{K\Delta K + A}{\delta K \; Y \; K} , \frac{\delta F}{\delta K} \frac{L}{Y} \frac{\Delta L}{L} \dots\dots\dots\dots..5$$

Expressing equation 5 in growth form we;

Gy=Ga+GkBk+GkBL......... 6

Where   Bk=Capital
BL= Land
Gy=percentage growth in output
Ga=percentage growth in productivity
Gk=percentage growth in variable z.

The exogenity factor that increases productiveness that is the technological progress has been questioned in the literature (e.g. Lucas 1998; Romerl987; Azaradis and Drazenl990; 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 behaviour of the people responsible for the accumulation of physical capital.

The emergence of endogenous growth models was primarily an attempt to encompass the sources of technological progress and hence of sustained productivity growth within the general equilibrium framework. The literature has evolved to provide several distinct explanations of the process of economic growth each of which carried particular empirical and policy implications: Romers "AK model" generates sustained growth by assuming that technological change is the unintended result of specializing firm's investments. Creation of capacity to produce more and more specialized intermediate products is assumed to work like Adam Smiths' division of labour principle, but at the aggregate level. The resulting externalities yield increasing returns to cumulative investment, and thus the production of goods can avoid the decreasing returns to rising capital- intensity that the neo-classical model posited. These externalities imply that the comprehensive equilibrium path does not coincide with that which could be achieved I optimally planned economy.

The last conclusion was taught by virtually all the theoretical analysis based upon successive formulations that belong to the family of "endogenous growth models". It carries the impression that growth performance might be improved by public policy action (K.K. Ogujiuba and A.O. Adeniji).

Subsequent endogenous growth models have flushed out the process of technological change through the explicit introduction of human capital and knowledge.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-state growth rate of labour 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 modelling other important activities performed by skilled labour, 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 modelled as a factor affecting innovation, the long run rate of productivity growth is positively affected by the human stock's level; whereas in the Lucas (1988) model the rate at which human capital is being accumulated relative to the existing stock was seen as the critical determinant of productivity growth.In the words of Salleh (1992) he observes that "It is human resources that develop the nation and the nation's development in turn develops humanresources, when the process of both is analogous to a spinning wheel which is continuously spinning just as long as there is growth in population and need for development".

This view or proposition led to the formulation of the augmented Solow-model using Cobb-Douglas' product in function by incorporating human capital into it. Therefore following Mankiw et al (1992), Gammy *et al* (1996), Odusola (1998), the Solow Model is presented thus: p &1 implying decreasing returns to Capital.

Aghion *et al* (1998) distinguished between two basic frameworks derived from endogenous growth theory i.e. the Nelson-Phelps (N.P.) approach and the Lucas approach. The Nelson-Phelps approach relates growth to the stock of human capital through two channels either directly through human capital effect on a country's ability to innovate. (The domestic innovation component) and indirectly through the ability to facilitate technology adoption i.e. to foster technology "catch up" with the leading country (the technology diffusion component). The second approach was based on Lucas (1988) assumes that growth is driven by the accumulation of human capital. It treats human capital like an ordinary input in the production function Changes in the growth rates across countries are assumed to be primarily due to changes in the rates of human capital accumulation.

Aghion *et al* (1998) believes that these two approaches have different implications for the effects of human capital investment on long run growth in one case raising the level effect on output and on the other hand affect the growth rate.They also suggest the possibility that both approaches might apply if one were to distinguish between types of human capital for the purpose of this study the Lucas approach will be concentrated on.

Empirical Review

Research conducted in the field of economics of education and labour economics in the more recent years especially since the late 1970s has not only brought the human capital theory under severe attack but also provides the scope for new theories, the human capital theory contends that individual earnings in the labour market is a function of his or her personal decisions and choices regarding investments in education in other words, skills acquired in schools are directly related to the characteristics that labour needs. The theory of screen however disagree and according to them education merely acts as an instrument through which the effect of some other variables are transmitted which are inherent and non-cognitive in nature. Various empirical studies have been carried out both in developed and developing countries Nigeria inclusive.

Below are some of the works carried out (Ramesh 1989), As cited in "The Human Capital, Performance and Earning Connection- a firm level study, in his human capital performance and earningsconnections carried out an empirical study and the result supports the humancapital approach to earnings determination but it also shows that traditional simple human capital variables like years of formal education and experienceon-the-job do not necessarily determine the performance variation among workers Psachrapoulous (1993), claims that in general, the rate of return to educationare higher for primary education than for further education and that primary education contributes more to economic growth in less developed countries than in developed countries. According to Guisan (1996), there is a positiveeffect that education of active population has over economic growth. Education has been considered as an additional input in the production function with apositive effect over the GDP growth.   And an increase in the stock of physical capital per head implies an increment of qualified labour demand. The increment of educational standards has a consequence a better socio culturalenvironment. (Thomas *et al* 1997) examined whether education and openness to trade canimprove the development impact of investment project. Their findings suggested the importance of trade openness and education for improvinginvestment project performance and the potential gains from outward oriented learning. Pritchett (1999) shows that variation in the changes in average schooling plays little role in explaining cross country variation in growth rate. (Benhabib *et al* 1994) found out that the initial level of average education per worker is asignificant determinant of output growth. They argued that education levels make the adoption of technology easier.

David Cook (2000) in his paper education and growth used instrumental variables estimate approach which drew much of data from variation within developing economies. His paper showed that human capital positively affects productivity which invariably leads to increased economic growth. Yesufu (2000) as cited in Impact of Human Capital on Economic Growth in Nigeria: An error correction approach opines that "The essence of human resources development becomes one of ensuring that the work force is continuously adapted for and upgraded to meet the new challenges of its total environment" in response to various stimuli such as introduction and discovery of new techniques of production.

Okojie (1995) as cited in 'the impact of human capital on economic growth in Nigeria: an error correction approach concludes that human capital formation "is thus associated with investment in man and his development as a creative and productive person". The totality of

the effort and cost involved in this massive upgrading of the productive capacity of the people constitutes investments in human resources, which is also referred to as manpower development or human resources development. Human capital can be acquired and developed in different ways namely; education, training, health promotion, as well investment in all social services that influences man's productive capacities including, telecommunications transport and housing. In the words of Yesufu (2000) as cited in 'the impact of human capital oneconomic growth in Nigeria: an error correction approach "education and training are generally indicated as the most important direct means of upgrading the human intellect and skills for productive employment". However human capital formation transcends mere acquisition of intellectual ability through formal education system to include the family, the educational system ,formal or informal institutions, special professional and training organizations; enterprise in- house arrangements, and even individual self-efforts.

Grammy and Assane (1996) using varied forms of human capital investment shows that human capital formation propels growth in per capita income. Its positive contribution to growth was statistically significant at 1 percent. Okedera's (1978) study used a three year experimental adult literacy programme of the University of Ibadan to generate the private and social benefits associated with formal and informal primary education. He calculated the private rates of return on formal primary education to be 10.6 percent and adult literacy level was 17.8. The corresponding social rates of return were 8.5 and 14.7 percent for formal and informal primary education. By implication both formal and informal primary education does not only increase productivity through earnings, but also through increased capacity for future possibilities, which invariably translates into growth.

Mbanefoh [1980], as cited in 'Impact of Human Capital on Economic in Nigeria', An error correction approach carried out the cost-benefit analysis of university education in Nigeria and his conclusion was that investment in universityeducation is always profitable when any discount rate is between one and ten is used.

Methodology

This study is designed to investigate empirically, the impact human capital development on the economic growth of Nigeria. The research is necessitated by the dwindling performance of human capital development over the years. There are various investments that can be made in order to contribute to the formulation of human capital. But investment in education has been chosen. The scope of the study will cover the year 1980-2015 and it will be restricted to the Nigerian economy.

This research work is designed to access the impact of Human Capital Development on economic growth in Nigeria. This regression study employed data mainly from secondary sources and multiple regressions technique in carrying out its investigation and analysis, so as to determine the impact it has on economic growth.

For the purpose of this project, data will be sourced from the central bank statistical bulletin for the various years and the data are all secondary data. From the model it can be seen that the data needed are gross domestic product, gross capital formation, foreign direct investment, and total government expenditure on education. These data are secondary data

andare expressed in logarithmic forms to cover the period 1980-2015. The data were sourced from the Central Bank Statistical bulletin for 2014.

Data Analysis

The method of data analysis employed for this research is the regression statistical analysis. Regression technique was used or chosen in order to measure the relationship between the variables used in the model. Regression analysis estimates the relationship among variables in a model. In the case where there are more than one variable, multiple regressions is used to analyse and make predictions. The regression equation is presented as follows:-

$Y = al \ blXII \ b2X2I........bnXn$
Where;
Y = criterion to be predicted
a = constant
b....bn = regression weight for each predictor
X....Xn = score on each predictor

Following the model adopted by Bernadette Andreosso (2002) we start with an early form of the production function which gives: $YK^a \ L^{1-a}$, expanding it we have;

$Y=F(K,L, HK)........... 1$
Where Y= GDP
K=CAPITAL
L=LABOR
HK=HUMAN CAPITAL

K can be decomposed into domestic capital and foreign capital. Which is capital imported through foreign direct investment (FDI). Human capital will be proxies by total government expenditure on education.

Taking the logarithm of equation 1 above and by differentiating them we obtain the following function:

$In \ GDP = \alpha + \beta \ In \ LOB + \beta_2 \ In \ GCFC + \beta_3 \ In \ FDI + \beta_4 \ In \ EXPD +e........2$

Where

GDP= Gross Domestic Product. GCFC=gross capital function. FDI=foreign direct investment. L=labour. EXPD= total government expenditure on education.

$\beta_1, \beta_2, \beta_3, \beta_4$ = represent the elasticity of production relative to labour, gross capital function, foreign direct investment and human capital which is proxies by total government expenditure on education

Data Presentation and Analysis
Table 1 Descriptive Statistics Analysis

Jack Etim Idongesit & Gissor Vincent PhD.

	GDP	LOB	GCFC	FDI	EXPD
Mean	14984.55	56.48353	1137996.	887407.8	1173111.
Median	4010.875	56.90000	217854.4	125466.4	382816.4
Maximum	89043.62	56.90000	7178905.	9765732.	5211420.
Minimum	94.22000	54.80000	8799.480	3452.800	9636.500
Std. Dev.	25249.77	0.697710	1966118.	2388762.	1596884.
Skewness	1.880235	-1.281237	1.904525	2.968874	1.359046
Kurtosis	5.141910	3.084181	5.442701	10.14409	3.462595
Jarque-Bera	26.53263	9.312253	29.00717	122.2511	10.76952
Probability	0.000002	0.009503	0.000001	0.000000	0.004586
Sum	509474.8	1920.440	38691863	30171866	39885765
Sum Sq. Dev.	2.10E+10	16.06438	1.28E+14	1.88E+14	8.42E+13
Observations	34	34	34	34	34

Source: Eviews 9.0 Output, 2016

The result of Table 1 above is a summary measure for all the relevant information from the data for analysis. The main highlight includes the measures of central tendency, measures of dispersion and test for normality. What is of paramount importance is the mean-median ratio which is positive for all the variables in the model. It thus implies that both the mean and median are clustered together, indicating the shape of a standard normal curve.

Skewness for all the data set is positive except for LOB. It means the entire distribution is skewed to the right of the normal curve. Kurtosis on the other hand indicates two of the series LOB and EXPD to fulfill its expected condition of 3. GDP, GCFC and FDI all indicate a flat distribution with values more than 3.

Jarque-Bera test for normality indicates the data series to be normally distributed. This decision is based on the significant probability values which are statistically significant at 1% confidence level.

OLS Model Estimation Table 2 OLS Result
Dependent Variable: GDP
Method: Least Squares
Date: 07/09/16   Time: 08:37
Sample: 1980 2014
Included observations: 34

Variable	Coefficient	Std. Lrror	t-Statistic	Prob.
C	-66884.84	78171.90	-0.855612	0.3992
LOB	1170.142	1371.818	0.852986	0.0007
GCFC	0.008159	0.002845	2.868094	0.0076
FDI	0.000892	0.000803	1.110648	0.0758
EXPO	0.004858	0.002891	1.680354	0.0036
R-squared	0.982330	Mean dependent var		14984.55
Adjusted R-squared	0.979892	S.D. dependent var		25249.77
S.E. of regression	3580.465	Akaike info criterion		19.33943
Sum squared resid	3.72E+08	Schwarz criterion		19.56389

Log likelihood	-323.7702	Hannan-Quinn criter.	19.41597
F-statistic	403.0390	Durbin-Watson stat	1.853883
Prob(F-statistic)	0.000000		

Source: Eviews 9.0 Output, 2016

The OLS was used to analyze the relationship between human capital development and economic growth in Nigeria. The use of OLS is as a result of its easy of usage, and it has been variously used by other researchers with its optimum properties often refer to as the BLU properties. The details of the OLS result are presented in Table 2 above:

Result of Table 2 above shows all the independent variables in the model to be positively related to the dependent variable. To be precise, the result shows LOB to be positively related to economic growth in Nigeria during the time period of analysis. All the variables are also statistically significant at 5% levelof confidence.This is very clearly that economic growth in Nigeria is a product of manyvariables. Human capital development is one of the sure sources of growth in Nigeria and if well promoted alongside other factors like the flow of financial resources from abroad and sustained government investment, sustainablegrowth and development can be easily achievable.The R^2 and adjusted R^2 of 98% and 97% all show the robustness of our Regression model. In fact, the model has a good fit. The Durbin-Watsonstatistics of 1.85 shows positive serial autocorrelation but is within anacceptable bound of 2.In summary, the result is quite good and consistent with a priori theoreticalcriteria and practical reality in Nigeria. At this juncture, we shall proceed withresidual test aimed at evaluation of the stochastic error term. Such tests include the test for normality,   autocorrelation test and test for hetereskedasticity.

The OLS normality test indicates the data series to be normally distributed with positive skewness and flat kurtosis of a value more than 3. The probability values are statistically significant at 1% level of confidence. This informs our choice of decision about the test.

The probability values are all statistically significant at 1% level of confidence, given rise to an easy decision that the data series are not hetereskedastic but rather homoscedastic.

Stability Test

One of the important properties of time series data is for the data set to be stable over time. If not stable, the regression result is suspected to be spurious. In this work, we conducted the stability test for the data set at 5% confidence level. The result of the test as reported by the cumulative sum of Squares.

In Figure 1 above, the upper and lower bounds indicates the level of significant at which the CUSUM test is being conducted. It is a 5% confidencelevel. The test statistic falls in between the upper and lower bound, confirmingthat the data set has passed the test for stability. This means that the variablesare stable over time hence have all passed the test for stability at 5% level ofsignificance.

Test of Hypothesis

The study was anchored on one hypothetical statement. To test it, we proceed as follows:

Jack Etim Idongesit & Gissor Vincent PhD.

i. There is no significant impact of human capital development on economic growth in Nigeria.

Again, using the OLS result where the relationship between human capitaldevelopment and economic growth in Nigeria was not just positive but alsostatistically significant at 5% level of confidence, we reject the null hypothesisof no significant relationship between human capital development and economic growth in Nigeria.

Summary

The research was undertaken to assess the impact of human capital development on economic growth in Nigeria. The research used annual time series secondary data that was generated from the CBN and NBS bulletin between 1980 and 2014. Using OLS multiple regression and other supporting tests like normality, autocorrelation, hetereskedasticity and stability tests, the OLS result indicates a positive and statistically significant relationship between human capital development variables and economic growth in Nigeria during the period of analysis. On the basis of this significant relationship, the null hypothesis of the study was rejected.

Conclusions

Economic growth and development is not a product of a single economic variable. The ability of the authorities to manipulate all appropriate macro economic variables to move in the right direction is important. In this research, we can conclude that if human capital is well developed, it would contribute to economic growth and development in a significant magnitude.

Recommendations
i. The human capital in Nigeria should be given the desired attention especiallyhuman resource training to enable it copes with modern requirements forhuman capital in a technical evolving economy,
ii. Government must encourage the growth of capital for investment into thekey sectors of the economy. In our research, fixed capital formation is seen tobe   positively related to economic growth, it implies that if encouraged, economic growth can be encourage as well.
iii. The   inflow of FDI should be seriously encouraged to ensure steady availability of funds for development projects in the country. Funds availabilityis the key to any meaningful development.

Reference

Adedeji et al (1990). As cited in 'Impact of Human Capital on Economic in Nigeria. An error correction approach. Patricia A.Adamu. National Economic Society Publication.

Jack Etim Idongesit & Gissor Vincent PhD.

Adamu.P.A. The impact of human capital on economic growth: an error correctionapproach. Human resource development in Africa selected papers for the 2000 annual conference.Nigerian Economic Society Publication.

Aghion and Howitt (1998). Endogenous Growth Theory .M.I.T Press.

Bello and King 1991, Hill and King 1991, Thomas 1991. As cited in "Impact of Human Capital on Economic Growth in Nigeria". Patricia. A.Adamu. Nigerian Economic Society.

Benhabib and Spiegel 1994. As cited in 'Education and Growth Instrumental Variable Estimate.Economic Growth and Human Capital development: the case of Nigeria by K.K Ogujiuba and A.O. Adeniyi.Deraniyegelal995. As citied in 'Education and Growth Instrumental Variable Estimate.Foster and Rosesenzwig 1995.As cited in 'Education and Growth Instrumental Variable Estimate.

Gary Becker (1964). Human Capital.Wikipedia free encyclopedia.

Guisan .Y. Frais (1996): The Role of Education in Development and European Cooperation with Latin America.

Hamada and Hondal995. As cited in "Impact of Human Capital on Economic Growth in Nigeria". Patricia. A.Adamu. Nigerian Economic Society.(NES)

Habison (1973), Salleh(1972): As cited in 'Human Capital Investment And TheEmpirics of Economic Growth in Nigeria'.Ayodele .F. Odusola: National centre for economic management and Administration(NCEMA)

Human Capital Investment and the Empirics of Economic Growth in Nigeria: Ayodele F. Odusola.

Husain and Farugee 1994: as cited in: "The Impact of Human Capital on Economic Growth in Nigeria". Patricia Adamu. (NES).

K.K.Ogujiuba and A.A.Adeniyi: 'Economic Growth and Human Capital Development. The case of Nigeria.

Mankiw et al 1992; UNDP 1996; Lucas 1998; as cited in The Impact of Human Capital on Economic growth in Nigeria; An Error correction Approach by Patricia A.Adamu.

Mbanefoh (1980). As cited in 9The Impact of Human Capital on Economic Growth in Nigeria". Patricia A.Adamu.The Nigerian Economic Society (NES).

Michael P.Todaro, Stephen C. Smith: Economic Development. Pearson Education.

Nakamura(1981).As cited in 'Literature on The Relation between Human Capital and economic growth. Definitions and problemsGBas Van Leeuwen.International Institute of Social History.

Newland and San Segundo(1996). As cited in 'Literature on The Relation between Human Capital and economic growth. Definitions and problems Bas Van Leeu wen. International Institute of Social History.

Jack Etim Idongesit & Gissor Vincent PhD.

Odusola (1998). Human Capital Investment and the Empirics of Economic Growth in Nigeria. Ayodele Odusola: National Economic Society Publication.

Laroche et-al (1999). As cited in 91iterature on the relation between Human capital and economic growth: definitions and problems". Has Van Leeuwen International Institute of social history.

Lucas 1988: Herbrison and Myers 1964. As cited in 9The Impact of Human Capital onEconomic Growth in Nigeria". Patricia A.Adamu.The Nigerian Economic Society(NES). Lucas 1998; Romer 1987; Azariadis and Drazen 1990; Mankiw et al 1992; UNDP 1996;as cited in Human Capital Investment and the Empirics of Economic Growth inNigeria: Ayodele F. Odusola.

Ramesh Datta .As cited in "The Human Capital, Performance and Earning Connection- a firm level study.

Robert Solow 1956: as cited in ' Human Capital Investment and the Empirics of Economic Growth in Nigeria.OAyodele F. Odusola.

Salleh 1992.As cited in 'Human Capital Investment and the Empirics of Economic growth in NigeriaO Ayodele F. Odusola.

Schuller 20001.As cited in Educational Human Capital Development and Unemploymentin Nigeria.Proffessor Prince Famous Izedonmi and Ese UrhiU

Schultz 1994: OkojiU1998. As cited in "Impact of Human Capital on Economic Growtk in Niglfia" .Patricia A.Adamu.TkUNiglfian Economic Sociliy (NES).

Solow 1957; Kkan 1997; lyoka 2000. As cited in 'impact of kuman capital on Lconomic growth: An Error corrlition Approack.Patricia A. Adamu.

Tlinpl 2001 .As cited in 'Education and Growtk InstrumUital VariablUEstimatU David Cook.

Todaro 2003. Micklal P.Todaro, StI|)klh C. Smitk.Economic DlyUopmllit. Plarson Education.

Uwatt 2000. As cited in Human RliourcUDLvlIopmlfit and Economic Growth in Niglfia. 1960-2000.Uwatt B.Uwatt.

Vision 2010 Report 1997. As citlfl in Human RUourcUDlMIopmlht and Economic Growtk in Niglfia. 19 60-20 00. Uwatt B .Uwatt

World Bank 1990, OkogiU1995, Odusola 1998. As cited in "Human Capital InvUtmlht and tkUEmpirics Of Itonomic Growtk in Niglfia: AyodUU.F. Odusola National ClhtrUfor Economics ManagtHal Administration (NCCMA).