A Recursive Review Of Human Capital Development And Nigeria's Economic Growth From 1980 To 2012

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Abstract: *This study examines the link between human capital formation and economic development in Nigeria, utilizing secondary data from 1980 to 2012. Co-integration and the Error Correction Mechanism (ECM) were used to investigate the link between human capital building and economic development in Nigeria. The Granger causality test was also used as an additional estimate technique to examine the causal relationship between the variables included in the model. The study revealed that expenditure on education, health, and secondary school enrolment positively affects the economy's growth. In contrast, primary and tertiary school enrolment maintained a negative long-run relationship with the index of economic development in Nigeria. This reveals that the impact of investment in human capital on economic growth during this period is marginal. The fallen standard of education due to brain drain, poor working conditions for educational workers at all levels, poor learning environment, poverty, and low level of health care in the country may have accounted for this result. Consequently, it was recommended, among others, that the government continue providing an environment that will encourage increased investment in human capital by both the public and the private sector. Also, a stock of physical capital needs to be acquired to facilitate more investment in human capital and thereby enhance industrial productivity in Nigeria.*

Keywords: Economic Growth, Human Capital Development, Nigeria

BACKGROUND OF THE STUDY

The issues surrounding the economic growth of developing nations are referred to as the "economics of development." Economists from Adam Smith to Marx and Keynes have all been interested in the study of economic development, but their focus has primarily been on issues that were essentially static in nature and were primarily related to a framework of social and cultural institutions in western Europe. In other words, their focus has been on developing modalities to liberate the European economies, but these modalities are not available in developing economies as they are in developed economies. However, it was not until the 1940s, particularly after World War II, that industrialized nations began to focus on examining the issues of impoverished countries and developing theories and models of development and growth. The wave of political renewal that swept the nations of Asia and Africa when they broke free from colonial rule during World War II has piqued their interest in the economics of development even more. The desire of new leaders in these countries to promote rapid economic development, combined with the realization by developed nations that "poverty anywhere is a threat to prosperity everywhere," has sparked additional interest in examining how human capital development can lead to economic growth in their countries.

However, there is no humanitarian reason for the rich countries' desire to end the pervasive poverty of the developing world. The most compelling argument in favor of helping developing nations has come from the Cold War between Russia and the West before to the fall of the Soviet Union, in which both parties sought to win over developing nations by offering greater aid than the other. Economic development has also an export value for both the aid-giving and aid-receiving countries. In order to avoid secular stagnation, rich countries need a sustainable development which must be accompanied by an outlet for the use of their growing capital stock to assist poor countries. While poor countries need an accelerated rate of development to increase their export potential for avoiding deficit in balance of payments.

As Barron (1999) correctly points out, the growth rate is significantly positively correlated with the beginning level of human capital, given the initial level of per capita GDP. Therefore, when it comes to their level of per capita GDP, poor nations only tend to overtake

affluent countries if they have high human capital per person. In a related vein, nations with strong human capital have high physical investment to GDP ratios and low fertility rates.

STATEMENT OF THE PROBLEM

Both education and health are elements of human capital that enhance wellbeing. Nigeria has one of the lowest levels of "human development" in Africa and the whole globe, according to one estimate of human wellbeing that takes into account factors including income, health, and education. Slow economic development significantly restricts governments' and individuals' capacity to continue funding expenditures in health and education, as Nigeria has discovered since 1980. Low human capital investments may have an impact on the already low rates of income growth. It is possible to interpret these relationships as suggesting a vicious cycle of growth, but this should not be exaggerated. Nigeria has a lot of leeway in deciding how much to spend on education and healthcare. Despite beginning from a low economic level, Nigeria has had a quick increase of various areas of human capital since gaining its independence, notably in the extension of education. There hasn't been an equivalent increase in physical capital to match the growth of the human capital pool. Low income growth and poor returns on educational investment have been the outcome. A significant portion of this literature has stressed the complimentary nature of human and physical capital, pointing out the ways in which imbalances in these two stocks, together with externalities related to human capital, can impact economic growth. Before, a large portion of Nigerian planning was focused on accumulating material capital for quick expansion and development, with little regard for the essential role that human capital plays in the process. Utilizing the resources we already have properly is insufficient; we also need to create more human capital to augment the resources we already have.

Additionally, there has been a significant investment in education as a result of the growing belief in it as a catalyst for change in many developing nations, including Nigeria. This is generally consistent with the notion that raising educational standards fosters economic expansion. The contradiction that goes along with this assumption is that, in spite of the significant amount of money spent on education, there isn't much proof that education in Nigeria has any positive externalities that spur economic growth.

It is evident that public funding of education in Nigeria is far too below the 26% recommended by the United Nation Education Scientific and Culture Organisation (UNESCO) to meet the Millennium Development Goals (MDGs). As government allocation to education fluctuates, so also the qualities of educational inputs also greatly deteriorate. Also, investment in healthcare has not been given the required attention to achieve a desirable healthy living

OBJECTIVES OF THE STUDY

The broad objective of the study is to examine empirically the relationship between human capital development and economic growth in Nigeria.

The specific objectives are:

1] To determine the impact of human capital on economic growth.

2] To determine the constraint to human capital development in Nigeria.

3] To make policy recommendation based on the findings.

HYPOTHESIS

The research hypothesis shall comprise of null and the alternative hypothesis which shall be denoted by H0 and H1 respectively.

Hypothesis1:

H0:b1=0: there is no significant positive relationship between human capital development and economic growth in Nigeria.

H0:b1>0: there is a significant positive relationship between human capital development and economic growth in Nigeria.

Hypothesis11:

H0:b11=0: upward trend in government expenditure on health and education have not impacted positively on economic growth in Nigeria.

H1:b11>0: upward trend in government expenditure on health and education have impacted positively on economic growth in Nigeria.

SIGNIFICANCE OF THE STUDY

Throughout the 1960s and 1970s, macroeconomists focused on the tangible capital formulation as a means of generating economic growth thanks to the neo-classical theory of growth developed by Solow (1956) and Swan (1957). However, the theory also demonstrated that the accumulation of capital would not necessarily support a steady rate of growth in labor productivity due to reducing marginal returns in substituting physical capital for labor.

The general level of education, health, and nutrition interact favorably with other forces, among them the accumulation of new technologies, according to the wide interpretation of these findings in the framework of the current growth model. Countries with higher levels of human capital development will be able to reduce the relative magnitude of the real income disparities per capital and increase productivity growth rates.

These suggests that there are ranging arguments on theoretical and empirical findings regarding the contribution of human capital to economic growth and development especially in the developing economic that was characterised by underutilizing of both human and physical or material resource. More so, both the public and private investment in health and education is grossly adequate.

The study will reveal whether adequate and appropriate development of human capital in Nigeria will lead to a sustainable economic growth. The findings of this study will also be used as reference materials for future researchers.

SCOPE OF THE STUDY

The goal of the study is to determine how important it is for Nigeria to improve its human capital in order to achieve economic growth. 1980–2012 will be the study's time frame. The choice of this time frame was made in order to fully analyze government spending on health and education under the present administration.

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Economic Development and Economic Growth

Generally speaking, Economic development is mostly experienced by underdeveloped countries and economic growth by developed countries. A country has to experience development before growth, but in some cases, one cannot experience development without first experiencing growth. This is so because development is growth plus technological changes. When Madison (1996) states, "the raising of income levels is generally called economic growth in rich countries because they have experienced the development process and in poor ones it is called economic development," he distinguishes between the two terms in this meaning. However, the fundamental factors driving increased income levels in the two categories of economies are not mentioned in this perspective. In this regard, Hicks (1994) notes that the challenges facing developing nations revolve around the utilization of underutilized resources, despite their widely recognized applications. Conversely, developed nations face the challenge of broadening their resource base, encompassing both utilized and unutilized resources.

Actually, there is no connection between the terms "development" and "growth" and the kind of economy. The nature and source of change are the areas where the two differ from one another. The distinction is further elucidated by Schumpeter (1999), who defined growth as a gradual and steady change in the short and long run that results from a gradual increase in savings and population, whereas development is a discontinuous and spontaneous change in the stationary state that permanently alters and displaces the equilibrium state previously existing.

- Most economists have agreed with and expanded upon Schumpeter's point of view. Kindleberger (2004) argues that economic development entails both increased output and modifications to the institutional and technological framework from which it is produced, whereas economic growth refers to increased output. An increase in output relative to inputs results in both increased input volume and increased efficiency. Beyond this, development also refers to adjustments in the inputs and output composition by sector.

According to Friedman (2004), development is an inventive process that results in the structural transformation of social systems, whereas growth is the system's extension in one or more dimensions without a change in its structure.

Therefore, a quantitatively sustained increase in a nation's per capita production or income together with economic development is associated with economic growth. Compared to economic growth, economic development is a broader term. It is understood to signify both change and progress. According to Myrdal, it has to do with qualitative shifts in economic needs, commodities, incentives, institutions, productivity, and knowledge, or the growth of the complete social structure. It explains the fundamental drivers of growth, including advancements in technology and structural modifications. Economic progress, in actuality, welcomes both expansion and contraction. An economy can expand, but it could not advance if structural and technical advances don't occur, leading to persistent poverty, unemployment, and inequality. But without a rise in productivity per capita, it is hard to conceive development, especially in a situation where the population is expanding.

The most important factor is the advancement of technology, which is costly and subject to policy (Parente and Prescott 1999). In contrast, since there is no declining returns in the aggregate production function, there is no steady state with endogenous growth and hence no conditional convergence. Relatively impoverished countries will persist as such because they cannot afford the expensive technology improvement, while big economies will grow faster than small because they have this technology at their disposal.

According to Rebelo (1991), one factor contributing to endogenous growth is the fact that labor is the embodiment of human capital, meaning that the enhanced human capital of one worker cannot equally benefit another. The sum of an economy's workers' average embodied human capital and their number determines the overall quantity of human capital (H). When we subtract L from L, we get xH=H. If (L) is the number of workers, then the total input of human capital is the flow of services from Lx (H/L) = H. An increasing workforce will diminish production per head at the rate of its expansion since additional workers without human capital add nothing to output. Constant returns to all three elements are equal to constant returns on physical and human capital alone.

It implies that increasing investment in human and physical capital, as caused by more friendly policies, can permanently boost an economy's growth rate. If savings and investments in human and physical capital rise from 5% to 10% of output, ignoring depreciation, steady-state production and capital growth will increase from 5 to 10%. This is because accumulation at a constant fraction of production contributes less and less to output until the steady state is attained, in the absence of technological development. As a result, in order to explain long-term economic development, the neoclassical model must contain external technological advancement.

Due to their scarcity, factor inputs such as human capital should yield significant returns in a relatively impoverished economy. However, it has been argued that low-income economies have far higher capital-risks, which lowers returns. Low-quality education and an unsuitable curriculum will reduce the return on education as a societal investment in human capital. Even if societal returns from education will be modest, they won't lower private returns if they demonstrate promising returns.

The Effects of Human Capital on Economic Development

- *Human and Physical Capital*

The wide term "human capital" refers to qualities of people that may be learned and lead to higher incomes. In addition to information and skills that are mostly obtained via education, it may also refer to a person's vigor and vitality, which are influenced by their diet and general health. The focus of human capital theory is on education and health as inputs to economic productivity. This is in contrast to the idea of human development, which sees economic productivity and health and education as indicators of human welfare in addition to their inherent value. Understanding the potential connections between human capital, other types of capital, income, and growth is essential to comprehending the function of human capital as an input into development. While it is true for every country, for which there is data, which more educated people earn more than less educated ones it does not follow that there is a simple relationship between investing in people and countries becoming richer. Human and certain forms of physical capital may be complementary. The problem in investing is to match skills with machines. It is not a question of either investing in people or investing in machines, both are necessary. Even more important is the issue of how much to invest in alternative forms of capital equipment and skilled labour. The answer to that question is unlikely to be the same for all countries or to remain unchanged over time.

According to Galor and Moar's (2004) analysis of the relationship between income and growth, inequality promotes economic growth in economies where the return on physical capital is higher than the return on human capital; in contrast, equality promotes economic growth in economies where credit constraints are largely binding and the returns to human capital are higher.

- *Human Capital and Economic Growth*

In both endogenous growth models and neoclassical models (Mankiw Romer and Weil 1992, Rebelo 1991, Sianesi and Van Reenen 2003), human capital is central to the equation. The crucial distinction lies in the fact that while external technical development continues to be the primary driver of economic growth in the first group, human capital plays a far larger role and no further explanation is required in the second group. According to endogenous growth theories, an economy's growth rate can be permanently altered by altering some policy variable. At first glance, the statistics for many emerging economies, unlike the time series evidence for the US, appear to be largely compatible with this hypothesis (Jones 1995), demonstrating increased growth after 1945.

Policy can also affect the exogenous technical advancement of the neoclassical model. Parente and Prescott (1999, 2000) claim that the decisions made by the people of a nation affect how quickly they may increase production by repurposing their time from regular labor to activities that will increase output. By doing this, companies may borrow money on international markets and tap into the global knowledge base. Even in cases when all nations have a similar reservoir of usable knowledge, policy-induced limitations like taxes or plant-level entry barriers lead to worldwide variations in aggregate productivity.

A cross-section of nations showed support for the human capital-augmented neoclassical model, according to Mankiw et al. (1992) (MRW). Pungo (1996), however, demonstrated that the MRW specification has structural flaws, making the coefficient on human capital negligible for a sample of labor-rich nations and if important data are disregarded. The fact that health and education services are often of extremely varied and low quality in emerging nations might be one explanation for these latest results. It follows that there is conflicting macroeconomic data about how public education spending affects economic expansion. In theory, there may be a negative relationship between economic development and the efficiency and amount of money spent on public education as well as the tax system (Blankenau and Simpson 2004). Spending by the government might displace private school funding. Furthermore, putting more potential workers through full-time school shrinks the workforce in the near run, which might lead to a decline in per capita productivity.

Life expectancy, a measure of health, is a second component of human capital that has been found to be very important in several cross-country growth regressions (Bloom and Canning 2000, 2001).

There are several ways that life expectancy might impact economic growth. People can save more for their senior years as they live longer (Lee et al. 1998). Because decreases in mortality rates are correlated with decreases in illness, life expectancy may also be used as a proxy for the overall health state of the community.

Because of unique institutions that are often heavily influenced and sponsored by the state, national economies are likely to be particularly diversified in the supply and demand for human capital. However, the majority of empirical study has focused on panels or cross-sections of several nations, neglecting institutional variations at the economy-level. One approach to getting rid of or lessening this heterogeneity is through national time series analysis (Durlauf, Johnson, and Temple 2004). Because of this, the current work evaluates and estimates a time series model for Nigeria's economic growth and human capital from 1980 to 2012. As a low income economy which has invested relatively little in human capital over the past 30 years, Nigeria is an especially helpful case for understanding the relationship with economic growth.

Ogujiuba and Adeniyi (2005), in their work on economic growth and human capital development in Nigeria, using data from 1970-2003 and estimation techniques of the ordinary least square (OLS) method and applying the co-integration theory, demonstrates the beneficial effects of investing in human capital via capacity building and education on economic growth.

While Omotar (2004) focusing on the profile of educational expenditure to analyze the impact of federal government expenditure on education sector in Nigeria found out that an increase in federal revenue is accompanied by increased education revenue to the ration of 10% to 56% and that the type of government (military or democratic) is not a crucial factor influencing total expenditure on education in Nigeria.

Aigbokhan et al (2004) in descriptive analysis approach to impact the trend of education expenditure and natural short-fall in human capital development, revealed that investment expenditure on education allocation as percentage of annual budget between 1990 and 2002 were small and oscillatory. Ichi (2002) using cob Douglas production function for the period 1978 to 2000 ascertained a negative relationship of human capital (Pattern and trend) to economic growth in Nigeria. It equally showed that investment in education in Nigeria had not been rewarded by higher growth.

Health Care Provision in Nigeria

It wasn't until the 1860s, when Roman Catholic missionaries founded the "Sacred Heart Hospital" in Abeokuta, that Western medicine was properly introduced into Nigeria. Religious missions were crucial to Nigeria's access to contemporary medical facilities throughout the subsequent colonial era.

Facilities related to missions were grouped together in certain regions according on the missions' activity and other related religions. In particular, the Midwest and Southeast were home to a large number of Roman Catholic hospitals. Nearly all of the hospitals in the nation's Midwest were run by Roman Catholic missions by 1954. The Sudan United Mission, which operated in the Islamic North, was the second biggest donor to mission hospitals. In the northern part of the nation, they jointly ran 25 hospitals and other establishments. Up until 1990, a large number of the mission hospitals continued to play a significant role in the North's healthcare system.

In Nigeria, the three levels of government share concurrent responsibilities for providing healthcare. Nonetheless, due to Nigeria's mixed economy, private health care providers clearly play a part in the provision of healthcare. The state government oversees the dispensaries, which are subject to federal regulation through NAFDAC, while the federal government's responsibility is primarily restricted to managing the operations of the university teaching hospitals. The federal government spends around 1.5% of its GDP on health care, compared to the 4.6% overall spending on health care. The rate of increase of per capita food production for 1970 is a long-term indication of a nation's capacity to provide food sustenance and prevent malnutrition; in Nigeria, this rate was 0.25%. Though small, the positive rate of per capital food consumption may be due to Nigeria's importation of food products.

Many local and regional variables that affect the number and quality of healthcare services are present in Nigeria. Because of the aforementioned, there is regional heterogeneity in the quality and availability of services in Nigeria's health care system based on need. Nonetheless, this is mostly due to the extent of state and municipal government funding and participation in health care and education initiatives. Furthermore, the Ministry of Health in Nigeria typically allocates around 70% of its funding to metropolitan regions, where 30% of the population lives. Some academics believe that there is an inverse relationship between patient needs and the availability of health care services.

Nigeria has failed in its endeavor to diversify its economy and sway away from the oil industry and toward other sectors, partly because of insufficient investment, a labor force that is primarily unskilled, and corruption. The education that most Nigerians receive is very poor. Children attend primary schools which last for six years, but the education they receive there is very insufficient. The pupils to teachers ratio there was 37 to 1 and the youth literacy rate was 13% for males and 20% for females up to the late 1990s. Unfortunately in 2002, 33% of the relevant age group attended secondary schools and only 4% attended tertiary schools. The low number of student's intertiary schools is 529.8% of the GNP. Furthermore, publing spending in education was only 0.9% of the GNP in 2002 (World Bank, 2004). Nonetheless, increasing the growth rate in other economic areas remains crucial for Nigeria.

EMPIRICAL REVIEW

Empirical Evidence of Human Capital Model.

Numerous studies on economic growth and development have highlighted the significance of human capital and education. A human capital model created by Robert (1991) demonstrates that the variations in labor productivity and global technological levels that we see are caused by education and the development of human capital. Education and human capital have become increasingly popular in the context of economic growth and development, primarily due to East Asia's phenomenal rise. While making significant expenditures in education, nations like Taiwan, Hong Kong, Korea, Singapore, and Singapore have achieved hitherto unheard-of rates of economic growth. The World Bank (1993),159 Olaniyan, D.A. and Okemakinde, T. discovered in the statistical analysis that went along with their study that education advancement is a very important explanatory variable for East Asian economic growth. There are several ways of modelling how the huge expansion of education accelerated economic growth and development. One way to look at education is as an investment in human resources. There is a distinct perspective on education's contribution to economic success, which holds that education has beneficial externalities. "Educate a portion of the community for the good of the entire community." The notion that positive externalities arise from education is by no means novel. Due to the beneficial externalities that society would experience from having a more educated labor force and populace, many classical economists pushed forcefully for government action to assist education (Van-Den-Berg 2001). When Smith (1976) stated that a society does not much benefit from its members' education, he was reflecting a progressive modern way of thinking. The more their education, the less susceptible they are to the superstitious and enthusiastic beliefs that, in illiterate societies, often give rise to the most terrible diseases. The Instructed and intelligent people besides, are always more decent and orderly than the ignorant and stupid ones in a society. According to Smith, the successful operation of a democratic society and the economy both depend on the externalities associated with education. An alternative approach to representing education's function in the process of growth and development is to see human capital as an essential component of inventions, R&D, and innovation. According to this viewpoint, education is a purposeful attempt to raise the resources required for coming up with new ideas, hence raising educational standards will inevitably speed up technological advancement. The modeling technique often utilizes the assumptions of Schumpeter (1973) on imperfectly competitive product marketplaces and competitive innovation, which enable the advancement of technology. Education is viewed as a component of deliberate, entrepreneurial attempts to develop novel goods and technologies. The strong relationship between educational

attainment and the invention of new products is highlighted by proponents of this educational perspective. The most highly educated people live in technologically advanced nations (Van-Den-Berg 2001). The review of empirical tests of the theory by Garba (2002), shows that cross-country regressions have shown positive correlation between educational attainment and economic growth and development. According to Odekunle (2001), investing in human capital has a favorable impact on the availability of technical innovation and entrepreneurial activity. According to Ayeni (2003), investing in education may pay off in the future by generating prestige, securing employment, and providing other in-kind and monetary rewards. Ayara (2002) notes, however, that the anticipated beneficial growth impact of education on Nigeria's economic growth has not materialized. Hence, he proposes three possibilities that could account for such results, which are:

(i)   Educational funding has been allocated to lucrative private ventures at the expense of socially detrimental endeavors; or

(ii)   There has been slow growth in the demand for educated labour; or

(iii)   Because of the failures of the educational system, education imparts little to no skills..

Human Capital Theory's Application to the Educational System According to Babalola (2003), education contributes to economic development and growth by raising the productivity of the labor force via a variety of means.

Human Capital Theory: Implications For Educational Development

For educational investment projects, Psacharopoulos and Woodhall (1997) state that the following factors should be considered when performing an economic evaluation:

 • Direct economic returns to investment, in terms of the balance between the opportunity costs of resources and the expected future benefits;

• Indirect economic returns, in terms of external benefits affecting other members of society;

• The private demand for education and other factors determining individual demand for education;

• The geographical and social distribution of educational opportunities; and,

• The allocation of educational costs and benefits in terms of money.

Since education has a huge and important impact on a country's economy, spending on education is considered to be an investment. It is enhancing human capital results in higher productivity for society and higher wages for individual workers. Their prospects of finding work in the labor market are increased, and they may benefit from both financial and non-financial gains as well as opportunities for career mobility. Only when education is anti-traditional in the sense that it educates, stimulates, and liberates the individual and teaches him how and why to demand of himself will it be a source of economic growth and progress. Accordingly, a proper educational strategy would manifest itself in four major development-producing capacities. According to Bronchi (2003) the first is the development of a general trend favourable to economic progress. The reference is to social mobility, a general increase in literacy necessary for improved communication. The second capacity emphasizes the development of complementary resources for factors which are relatively plenty and substitutes for relatively scarce factors. That is, educated people would be more adaptable to varying production needs. The third capacity underscores the durability of educational investment. He argues that education has greater durability than most forms of non-human reproductive capital, which implies that a given investment in education tends to be more productive, other things being equal, than some outlay on non-human capital. Finally, education is an alternative to consumption, for it transfers to round-about production the resources that would otherwise be consumed now.

Sensitivity of Human Capital Theory

According to Babalola (2003), the fundamental issue with the idea that education promotes economic growth and development is how to keep one's equilibrium. That is, where there will be no evidence of either shortage or surplus supply of educated people. A shortage of educated people might limit growth, while excess supply of it might create unemployment and thus limit economic growth and development. The theory has been criticized on several grounds. At the individual level, it has become controversial whether or to what extent education or other forms of human investments are directly related to improvement in occupation and income. Bronchi (2003) asserts that raising the level of education in a society can, under certain instances, increase the inequalities in income distribution. Fagerlind and Saha (1997) assert that while governments may adopt educational plans consistent with specific development goals and strategies, they can only be partially certain that outcomes of these will correspond to original intentions; the more political the goals of education, the more problematic the outcomes. In light of this, to view education as a panacea for the

attainment of development objectives is risky. Thus, education in general and schooling in particular, cannot of its own achieve the desired societal goals without structural reforms. Another major problem in the application of the theory is its failure to account for a growing gap between people's increasing learning efforts and knowledge base and the diminishing number of commensurate jobs to apply their increasing knowledge investment, especially in developing nations. To this, some advocates of the theory (Bronchi, 2003, Castronova 2002, Crepaz and Moser 2004) assert that these great increases in learning efforts have not led to commensurate economic gains because of the declining quality of education, lopsided and politically motivated system of education,161 Olaniyan. D.A and Okemakinde. T

Implications of Human Capital Theory For Educational Development

The desired amount of public education spending is the main area where the human capital model and the alternative models diverge in terms of their policy consequences. The human capital concept essentially means that more resources should be allocated to education until the present value of the streams of returns to marginal investment equals or exceeds the marginal costs. As a result, many emerging countries have come to understand that the education system serves as the primary vehicle for advancing human knowledge. As a result, countries spend enormous sums of money on education in an effort to teach values, ideas, attitudes, and ambitions that may be best for the country's growth in addition to knowledge and skills. In addition to human resources planning needs, parents strongly feel that in an era of scarce skilled workforce, the better the education their children can get, the better are their chances of getting well- paid jobs. The poor often look at their children's education as the best means of escaping poverty. The concept of human resources has provided a useful bridge between the theoretical concerns of students of the developmental process and the practical requirements of assistance to planners. Irrespective of the explanation given for global educational expansion, the consequences of this expansion for social systems can be problematic. The spread of education can lead to conflicts and pressures that inhibit social, political, and economic progress. For instance, the rapid expansion of the educational system puts competition for limited resources from various facets of the corresponding society. Expansion moves to the secondary and university levels once mass primary education is achieved and these too are progressively turned into mass systems. Simultaneously, the cost growth is geometric rather than arithmetic. These pressures ultimately create dilemma for government who must realistically assess and determine spending priorities for scarce economic resources. Adopting a position based on the assumptions of the human capital and modernization theorists, Fagerlind and Saha (1997) argue that in developing countries at least, educational demand must be tempered in order to bring costs and benefits to more realistic levels. Among the suggestions they made are that:

 • The costs of education should be borne by the beneficiary or recipient by means of family assistance or self-help schemes rather than solely the state;

• The income differential between the traditional and modern sectors should be reduced, which in effect lowers the benefits according to the educational attainments;

• The educational requirements for particular jobs should not be exaggerated; and

• The wage structure should be tied to occupational and requirements rather than educational attainments. It is also vital to remember that public policy is significantly impacted by the causal link between education and incomes. It makes sense to provide low-income members of society more access to education in order to combat poverty and the extent of economic inequality, if the human capital theory is right when it comes to the claim that education is the main driver of higher earnings. According to this research, the main goal of education subsidies should be to guarantee that everyone who may benefit from them has access to the right chances, not to lower the expenses borne by those who would still pursue higher education.

Productivity Effects of ill Health And Malnutrition

Less research has been done on the returns to health and nutrition than on the returns to education. This is partly because the non-monetary aspects of these returns - greater longevity, reduced suffering and absence of disability - are arguably more central than in the case of education. Attempts have been made to put financial values on these non-monetary outcomes, but the judgements involved are complex and subject to considerable controversy. More promising are attempts to assess the cost-effectiveness of various interventions in improving particular health indicators. . Education spending may have an impact on health, and children may benefit from parental education. The value of education may be impacted by health care costs alone. These connections are crucial for comprehending the possible spectrum of advantages that result from investing in human capital.

In spite of the expansion in the educational system, structural defects, inefficiency and ineffectiveness has affected Nigeria's level of human capital development and utilization. Nigeria's educational system typically produces graduates that are less equipped with the skills needed for work than what the country's economy needs to stay strong. This inadequacy resulted in decreasing industrial capacity utilization, rising unemployment, and threats of social insecurity by jobless youths. Other problems include: inadequate

resource input and consequent low output and overdependence on government as an employer of labour. In fact, the level of literacy is low. Available statistics show that adult literacy was 50.1 in 1989, rose to 55 in 1993 and 1994, and remained at 57 from 1995 to 2003. This data indicated that about 43% of Nigerians are illiterate, compared to 40% in China, 33% in Zimbabwe, 23% in Indonesia and less than 20% in Brazil and Mexico.

We have reviewed most works researched on this topic and government attempt at improving human capital for higher productivity and growth. Though, most of the studies reviewed confirmed the positive nexus between human capital investment and economic growth, they however differ on variables used in arriving at such results. For instance, in most studies reviewed, education or health development was used as explanatory variables, but in this study, we examine the relationship between human capital development (with incorporation of both investment in health and education) and economic growth, with study span from 1980-2012.

This study has distinguished itself from other studies by identifying the fact that, the educational system is poor today because the undergraduates in Nigerian tertiary institutions are discouraged. The few reasons amongst others for this discouragement are:

- Inadequate facilities needed for their effectiveness in their courses of study.
- Non-governmental participation in the welfare of undergraduate. In some other countries governments give allowances to their undergraduates for going to school from first year to the second year, and then from the third year, the governments stop the allowances and engage the undergraduates with jobs. The motive behind this is that, when students combine academics with jobs, performances and productivity are enhanced and this will intensively lead to human capital development of productive labor force which will in turn increase economic growth in the economy.
- The government not responding to the need of the Academic Staff Universities Union to promote education, thereby daunting the educational sector in the country.
- Unending strikes by the Academic Staff Universities Union constantly affecting the educational system, thereby reducing performances of undergraduates and graduates and bringing about human capital underdevelopment and affecting economic growth negatively in the country.

Now if this is tackled in our educational system, human capital will also be developed and it will stimulate economic growth in Nigeria.

This study also contributes to knowledge and development by enlightening the public that the development of human capital needed to stimulate economic growth in Nigeria should not be left alone for the government.

The private sector too should invest in education, health and technologies that will develop the human capital and bring about economic growth in Nigeria.

We hope this will help explain recent development on human capital and economic growth in Nigeria.

RESEARCH DESIGN

In this work, we employ an econometric technique to examine the link between economic growth and human capital development in Nigeria (1980–2012) using Ordinary Least Squares (OLS). Though human capital development involves development in education, health and skill acquisition, this study is limited to basically government investment in education and health, because of difficulty in accessing data on skills and training.

Population for the Study

The population for this study is Nigeria specifically for the effective examination of the relationship between human capital development and economic growth.

Sample and Sampling Techniques

Since there is no use of questionnaire on the research work, the sample size cannot be specified. Here, we would only be interested in examining Gross Domestic Product of Nigeria with time series from 1980-2012, Government capital expenditure on educational sector for the period 1980-2012 and Government capital expenditure on health sector during the period as well. Primary school enrolment in Nigeria for the period, Secondary school enrolment in Nigeria during the period and Tertiary school enrolment in Nigeria during the period.

Sources of Data Collection

The data used are secondary data sources from the Central Bank of Nigeria bulletin, National Bureau of Statistics (Annual Report 2009), Journals of Financial and Economic development magazines and existing text books of Economics.

Methods of Data Collection

We visited Libraries, Central Bank of Nigeria publications, Federal Office of Statistics for relevant and vital information. This information was augmented with those from the World Bank, United Nation Development Programme (UNDP) and African Development Bank. The findings and views of some of the vital works consulted from these sources are summarized in chapter two, which is the body of this work.

Methods of Data Analysis

In our method of data analysis, given the nature of the problem we are investigating, an Econometric method of Ordinary Least Squares (OLS) method for multiple regression technique was employed to test the relationship between human capital development and economic growth in Nigeria from 1980-2012. We also conducted test of significance of parameter estimates such as coefficient of determination test, (R^2) which measures the variation in the regressand that is explained by the regressors. T-test to determine the significance of the parameter estimates, F-ratio to determine the overall significance of the growth model and Durbin Watson test for autocorrelation. Also, we subject each of the variables to stationary (unit root) test so as to determine their order of integration, Augmented Dickey Fuller (ADF) test and Philip-persons test specifically. And also the Co-integration test to examine whether there is a long run relationship between our dependent variable and any of our independent variable.

Functional Specification of the Model

A fundamental methodological issue is how to define and measure human capital, skill and competencies overtime. Model specification enables empirical exploration of the economic phenomenon. The model specification adopted in this study is guided by theoretical considerations and empirical evidences. The traditional approach to examining the relationship between human capital development and economic growth in Nigeria is to incorporate the variables as inputs into a standard neoclassical production function, using a somewhat similar approach, but with a different specification of the production function, since our case study research shows that standard production functions do not accurately characterize the learning process that occurs in our educational sector.

Thus, in this study, we specify a growth model that incorporates the following variables:

RGDP= f(GEX, GEH, PSE, SSE, TSE)
Where our dependent variable or explained variable or regressand is:

RGDP= Real Gross Domestic Product (proxy for economic growth)

And other explanatory variables include:

GEX= Government Expenditure on Educational sector

GEH= Government Expenditure on Health sector

PSE= Primary School Enrolment in Nigeria

SSE= Secondary School Enrolment in Nigeria

TSE= Tertiary School Enrolment in Nigeria

The above model is transformed into linear equation thus:

$RGDP = \alpha_0 + \alpha_1 GEX + \alpha_2 GEH + \alpha_3 PSE + \alpha_4 SSE + \alpha_5 TSE + e$

By transforming the linear equation into log form, we have:

$Log\ GDP = \alpha_0 + \alpha_1 LogGEX + \alpha_2 LogGEH + \alpha_3 LogPSE + \alpha_4 LogSSE + \alpha_5 LogTSE + e$

Apriori expectation: $\alpha_1 > 0$, $\alpha_2 > 0$, $\alpha_3 > 0$, $\alpha_4 > 0$, $\alpha_5 > 0$. Where:

α_0 = Autonomous growth component and

e= Random/disturbance term.

Theoretically, all the variables are expected to be positively related to economic growth. This implies that a rise in these variables is expected to spur economic growth.

PRESENTATION AND ANALYSIS OF DATA

Analysis of Co-Integration Results

Even though the overall results may indicate a high degree of fit (as measured by coefficient of multiple correlation, R2, or adjusted R2), high amounts of correlated residuals, and statistical significance as measured by the usual t-statistic, Ordinary Least Square (OLS) regression estimates with non-stationary time series data often produce unacceptable results (Gujirati, 2004). Moreover, many economic variables have a strong tendency to trend over time such that the levels of these variables can be characterized as non-stationary, since they do not have a consistent mean over time. However, a lot of research on unadjusted non-stationary series has been done under the erroneous belief that non-stationary data are irrelevant. Regression with blatantly non-stationary series may provide challenges, resulting in what are known as "spurious" findings (Granger and Newbold, 1974).

This section therefore tests the long run relationship using Engle-Granger co-integration and Parsimonious error correction model. The result of our analysis and test of parameter estimates informed our decision to accepting the null hypothesis (H_0) or to reject.

Conventionally, testing for unit root of data always precedes co-integration analysis. Augmented Dickey-Fuller (ADF) test is often employed to determine the degree of integration of variables. This show how many times a variable should be differenced to attain stationarity (Dickey and Fuller, 1979, 1981).

The unit root and the Error Correction Model (ECM) are generally presented as follows.

Unit Root Model

$$\Delta Y_t = \alpha Y_{t-1} + \sum_{i=1}^{m} B\Delta Y_{t-1} + \delta + Y_t + \varepsilon_t \text{ (For levels)}$$

$$\Delta\Delta Y_t = \alpha \Delta Y_{t-1} + \sum_{i=1}^{m} B\Delta\Delta Y_{t-1} + \delta + Y_t + \varepsilon_t \text{ (For first difference)}$$

Where;

ΔY is the first difference of the series, m is the number of lags and t is the time.

Error Correction Model

The error correction model for two variables X and Y is stated generally as:

$$\Delta Y_t = \alpha_0 + \alpha_1 \Delta X_t + \alpha_2 U_{t-1} + \varepsilon_t$$

Where; α_2 is the degree of adjustment.

Table 1: Unit root test result using ADF procedure for model 1

Variable	LEVEL	1ST	2ND	LAG	Order of Integration

RGDP	5.949496	-1.872107	-6.774908	2	I(0)
GEX	2.407445	-3.982188	-7.569132	2	I(1)
GEH	3.228880	-3.077592	-9.238772	2	I(0)
PSER	0.731965	-3.045955	-6.298825	2	I(1)
SSER	-1.320783	-3.049007	-4.693725	2	I(1)
TSER	-1.194482	-4.044437	-6.032297	2	I(1)
ECM	-9.764835			0	I(0)
Critical Values					
1%	-3.6576				
5%	-2.9591				
10%	-2.6181				

Source: Author's Calculation Using E-views

With the exception of real gross domestic product (RGDP) and government spending on health, all of the variables are non-stationary at levels, according to the findings of the unit root test displayed in Table 1. Government spending on education (GEX), primary school enrollment (PSER), secondary school enrollment (SSER), and tertiary school enrollment (TSER) are integrated of order one I(1), meaning they must be differenced once to achieve stationarity, according to the results of an Augmented Dickey-Fuller (ADF) test for change in variables. Nonetheless, the Johansen co-integration test was used to look at the long-term correlations between the variables.

Table 2: Johansen Co-integration test results for Model 1

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.936521	231.7598	124.24	133.57	None **
0.888746	146.2915	94.15	103.18	At most 1 **
0.690004	78.21736	68.52	76.07	At most 2 **
0.469587	41.91033	47.21	54.46	At most 3
0.367328	22.25327	29.68	35.65	At most 4
0.204987	8.061368	15.41	20.04	At most 5
0.030182	0.950057	3.76	6.65	At most 6

Source: Author's own computation using E-views 3

The long-term association between the variables is shown by the presence of three cointegrating equations at the five percent significant level.

Engle-Granger Two Step Approach ECM Estimation

Table 3: Error Correction Result for Model 1

Dependent Variable: D(RGDP)				
Method: Least Squares				
Date: 10/18/13 Time: 16:24				
Sample(adjusted): 1981 2012				
Included observations: 32 after adjusting endpoints				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	23702.44	5139.693	4.611645	0.0001
D(GEX)	0.166397	0.377115	0.441236	0.6628
D(GEH)	0.174591	0.503619	0.346672	0.7317

D(PSER)	-1118.814	4428.858	-0.252619	0.8026
D(SSER)	5292.558	8322.393	0.635942	0.5306
D(TSER)	-20450.33	24504.46	-0.834555	0.4119
ECM(-1)	-88179.06	13637.10	-6.466116	0.0000
R-squared	0.644764	**Mean dependent var**		26792.07
Adjusted R-squared	0.559508	**S.D. dependent var**		35016.51
S.E. of regression	23240.31	**Akaike info criterion**		23.13580
Sum squared resid	1.35E+10	**Schwarz criterion**		23.45643
Log likelihood	-363.1729	**F-statistic**		7.562637
Durbin-Watson stat	1.025056	**Prob(F-statistic)**		0.000106

Source: Author's own computation, E-view 3

INTERPRETATION OF RESULTS

Table 1 indicates that the coefficients of the government expenditure on education (GEX), government expenditure on health (GEH), and secondary school enrolment (SSER) at first difference are positive. Primary school enrolment (PSER) and tertiary school enrolment (TSER) had negative coefficients. Table 1 indicates that the error correction term (ECM) has the correct a priori sign. The existence of a well specified error correction model indicates how agents adjust to their anticipated changes, in this case about 88 percent on the average. The error term's distributional characteristics suggest that it is stationary. This indicates that there is co-integration between the sets of dependent and explanatory variables. The existence of co-integration provides further validity of the regression result (Nyong, 1995). With the exception of tertiary and elementary school enrollment, all variables satisfied the a priori predictions about the signs of the parameters. All factors except enrollment in secondary and postsecondary education are not significant at the five percent level. Given that the F statistic value for our model is 7.5626, it has overall significance. The null hypothesis is rejected. This means that human capital development has strengthened the growth of the Nigerian economy. There exists a positive serial correlation as the value of our Durbin-Watson statistics is 1.03. Our R2 value is 0.64, meaning that government spending on health (GEH), education (GEX), tertiary school enrollment (TSER), and enrollment in primary, secondary, and high schools (PSER) accounts for 64% of the total variation in the growth of the economy in terms of real gross domestic product (RGDP).

Results of Granger Causality Tests

In causality relationships, the critical tests to be done include R^2, t-test and F-test which are important in the process of making the decision rule concerning the direction of causation. All the diagnostic tests are based on ordinary least squares (OLS) residuals which have been found to be correlated and heteroscedastic even when the true errors are uncorrelated and have common variance. The results of the Granger causality tests are presented in table 4.1d.

Table 4: Granger Causality Test Result

Movement of causality among the variables	Lag	F. values	5% F.critical values	Included Observation	Decision
PSER → RGDP	2	4.51678	4.38	32	Reject
PSER → TSER	2	19.1404		32	Reject
TSER → SSER	2	20.1306		32	Reject

Source: Author's calculation using E-Views Econometric software

From table 4 we observe that primary school enrolment (PSER) Granger cause real gross domestic product (RGDP), primary school enrolment (PSER) Granger cause tertiary school enrolment (TSER), and tertiary school enrolment (TSER) Granger cause secondary school enrolment (SSER). The relationship is unidirectional. We reject the null hypotheses.

The result shows that increase in primary school enrolment (PSER) will enhance the performance of the growth of the Nigerian economy. Building the economy through human capital development would attract several other factors. Primary school enrolment would improve tertiary school enrolment. Finally, tertiary school enrolment would attract secondary school enrolment. See appendix for detail result.

SUMMARY

The study's goal is to ascertain how human capital development affects Nigeria's economic growth. It provides a systematic approach to understanding the impact of human capital development on economic growth, using Nigeria as a case study. The utilization of material and human resources has improved due to the high degree of human capital development, and as was to be expected, this has had a multiplier effect that has driven Nigeria's economic boom. Consequently, a strong sense of hope regarding the advantages of increasing ongoing growth of human talents and capacities has evolved. Eventually, this had an impact on socioeconomic and development strategies, since many experts and decision-makers now think that building a country's human capital may benefit developing nations like Nigeria.

Furthermore, the enrollment trend in secondary, postsecondary, and elementary schools as well as government spending on health and education were used as a reference to evaluate the impact of human capital development in the Nigerian economy. A statistical analysis was conducted using a multiple regression model to assess the relationship between human capital development and economic growth for the years 1980–2012 in order to statistically and scientifically demonstrate that human capital development has a significant impact on economic growth. 99% of the fluctuations in Nigeria's GDP could be explained by all the variables, according to the multiple regression analysis done on the model.

FINDINGS

Our findings confirmed that investment in human capital {with GEX for education and GEH for health as its variables} is positively related to national output {RGDP}. This was informed by the signs of their coefficients {slopes}.
- Also we discovered that the explanatory power of the model is high, given the coefficient of determination in an adjusted form to be 0.64, indicating 64% total variation explained by the explanatory variables used in the model.
- The development of human capital has expanded the use of material and human resources, and as was to be predicted, this has had a multiplier effect that has fueled Nigeria's economic expansion.
- In addition, the Nigerian education and health system have not yet been upgraded to the advanced technologies necessary for the expansion of the country's output. Also, increasing unemployment rate is still on the rise as the few opportunities for job applicants are influenced by bureaucratic bottleneck and corruption, thereby leaving more unemployed graduates with their skills jobless.

Policy Implication:
- For failing to attain to the 26% allocation of budget to the educational sector by the United Nation Education Scientific Culture Organization {UNESCO}, human capital has not experienced much development in Nigeria. There is therefore the need to step up budget allocation to the educational sector in order to improve performance of the sector and the economy at large.
- Though government spending on health sector has improved over the years with increase in number of medical personnel, most health institutions/centers are mere consulting centers with substandard medical equipment. Therefore, more appropriate funding should be channeled to the health sector so that most medical cases being handled outside the country can be taken care of here in Nigeria.

CONCLUSION

This research work has dealt with the role of human capital in the process of economic growth in Nigeria. A number of theoretical approaches to incorporating human capital in models of growth have been presented, ranging from the augmented Solow growth model to the endogenous growth models of Lucas (1988) and Romer (1990). Although the empirical predictions derived from these models are to a large extent "observationally equivalent", in the sense that it is difficult to distinguish between them empirically, they tend to agree that human capital should matter for growth and development. The channels through which it may affect output growth include direct productivity effects and more indirect effects due to externalities, facilitated technological adoption, or enhanced productivity of R&D.

Although having been spawned by the enthusiasm surrounding the 'new growth theory', the vast empirical literature on economic growth has used a framework which, as noted by Barro, draws more heavily on the older neoclassical model. The evidence on the importance of human capital for growth which it has produced is somewhat mixed.

This research study demonstrates that a high degree of human capital development is essential for the socioeconomic growth of the country. Additionally, one of the biggest drivers of the population's rising quality of living is the growth of human capital. This study demonstrates the value of and continued necessity of human capital development as a means of fostering Nigeria's economic expansion. The enrollment in basic, secondary, and university education, as well as the overall amount spent by the government on health and education, were all highly correlated with Nigeria's economic growth.

In conclusion, Nigeria can only become a more powerful force if her primary, secondary, and tertiary education systems produce goods of a high caliber and if her educational institutions are planned and organized in a way that makes them relevant to the highly competitive and globalized economy.

RECOMMENDATIONS

The government and other agencies' efforts and difficulties in addressing Nigeria's growth and development issues are acknowledged in this report. The following suggestions are offered in light of the research findings:

1. The on-going reform by the Federal Government relating to the education sector as enunciated in the NEEDS document should be sustained with great commitment and will.

2. The government should keep creating the favorable conditions by maintaining macroeconomic stability, which will motivate more personal and business investment in human capital.

3. The appropriate authorities should take action when tertiary institutions close on a regular basis owing to strikes, cult activities, abuses by student unions, etc.

4. The government should place a strong focus on improving working conditions and wages for teachers and lecturers in educational institutions.

5. Expand institutional capacity by strengthening the infrastructure of educational institutions to produce quality workforce.

6. The government should continue its efforts to increase primary school enrollment through the free, mandatory Universal Basic Education program. One possible way to enhance this would be to involve both religious and private groups.

7. Graduates drop-out rate from post-primary education need to be addressed, through effective synergy between post-primary and technical institutions to be able to address the technical workforce needs of the economy

8. Efforts should be geared towards improving the standard of education in Nigeria.

9. Substantial amount of government budgetary allocation should be directed towards the educational sector.

10. The creation of specialized organizations tasked with enhancing human capital's competencies is necessary.

LIMITATION OF THE STUDY

Data availability has always been the main limitation of most research works. This study is not an exception. In the course of the study data source was a problem especially on primary school enrolment (PSER), secondary school enrolment (SSER) and tertiary school enrolment (TSER). This study would have started from 1970 but because of lack of data on primary school enrolment (PSER), secondary school enrolment (SSER) and tertiary school enrolment (TSER) from 1970 until 1980 that limited our scope to 1980 and 2012. There exists also the problem of inconsistency of data. There are occasions when data gathered from the National Bureau of Statistics, the Central Bank of Nigeria, and even different Statistical Bulletin volumes disagree with one another. Financial constraint also posed a great limitation to this study. Despite these limitations, the accuracy and significance of this study are not affected.

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