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Education As A Key To Economic Growth And Development In Nigeria

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Abstract:
The aim of this paper is to analyze the impact of education on economic growth of Nigeria using ordinary test squares (OLS) to determine the relationship between education as human capital and Real Gross Domestic Product (GDP). The study therefore found that there is statistically significant relationship between GDP and all the variables used in the study with the exception of primary school enrolment (PRYE). The negative coefficient of the PRYE is also an indicator that there are problems at this level of education in Nigeria. The variables to be used are Real Gross Domestic Product, Capital Expenditure on Education, Recurrent Expenditure on Education, Primary School Enrolment and Secondary School Enrolment from 1970 to 2006 which is latest data for Nigerian education sector by Central Bank of Nigeria.

Keywords: Education, Development, Nigeria, Gross Domestic Product, Capital Expenditure

Jel Code: I23, I22, I20, I28, A21

INTRODUCTION

Many great educationists and authors of repute have tried in the past and others are still trying to give a precise and concise definition of education. According to a renowned educationist "Education is the natural, harmonious and progressive development of man's innate powers" (PESTALOZZI, H. Johann 1997). This definition stresses that man naturally is endowed with certain inborn powers and capabilities, and the task of education is to bring about the development of these.

Education is "The deliberate and systematic influence extended by a mature person upon the immature through instructions, discipline and harmonious development of the physical, intellectual, aesthetic, social and spiritual powers of the human being according to their essential hierarchy by and for the individual and social uses and directed towards the union of the educated with the creator as the final end" (REDDEN .D. John 2000). This definition identifies that the ultimate goal of life is the union of the individual with God his creator. This inion according to Redden can take place only when the various capacities of a child are developed for the good of the individual as well as that of the society.

However, of all the various and numerous definitions given by various scholars, one that most people relate well with is the one that define Education as a process which draws out the best in the human with the aim of providing well balanced personalities: culturally refined, emotionally stable, ethically sound, mentally alert, morally upright, vocationally self- sufficient, and internationally liberal. This definition is all encompassing in nature, as it portrayed education as a total overhauling of the human with a view of instilling in him the appropriate values and bringing out the best in him, taking into cognizance that the total make up of a man is in need of growth and development, ascertaining that man is naturally endowed and education is responsible for bringing about the development of these innate abilities that will enable him make original contribution to human life to the best of his abilities.

Education in a broad sense is a process by which an individual acquires the many physical andsocial capabilities demanded by the society in which he/she is born into to function (UWADIA, 2010). Education is the process of acquisition of knowledge, that is, it involves the teaching and learning process (EDUWEN, 1999).

Education as a key component of human capital formation is recognized as being vital in increasing the productive

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capacity of people. Education especially at the higher level, contributes directly to economic growth by making individual workers more productive and leading to the creation of knowledge, ideas, and technological innovation. The effect of education on technological innovation is direct following the Romer/Solow growth theory framework. An investment in education is beneficial to the society, both at micro and macro levels and affects the system both directly and indirectly. Education is basic to development and is also regarded as an instrument through which the society can be transformed. As a salient factor in transition programme, education equips human resources with the needed knowledge, skills and competencies, which would make them functional, and contribute to the all-round development of the nation. It does not only help to supply the essential human capital which is a necessary condition for sustainable economic growth but it is also a key to poverty reduction and a major vehicle for promoting equity, fairness and social justice (TODARO, 2007).

A country that seeks to experience rapid economic growth must give high preference to ensuring that a high percentage of its population is entitled to quality education. The educational sector is one that ensures an increase in output per worker and this can transcend into economic growth. Studies have all revealed that increase in national income and per capita income is a function of education and that differences among nations can better be explained by differences in the endowment of human, rather than physical capital.

Formal education in Nigeria dated back to the British colonialism. In the pre-colonial and colonial era, the colonial master introduced reading, writing, arithmetic which was the beginning of formal education in Nigeria. Before now, education was informal, that is apprenticeship system of acquiring knowledge. With the advent of the British colonialism there was a shift from the informal to the formal system of education. Soon after the Nigeria independence tertiary institutions for manpower training and development were established by the Nigerian states. Consequently, this led to the growth of the Nigerian professionalism. Education have a had a tremendous impact on the Nigerian Nation over the years, this is evident in the growth and development of the Nigeria civil service, political system, technological growth, communication, industrial growth, agricultural production and so on, as well as the harnessing of her national endowment.

All the aforementioned development witnessed in Nigeria was brought about by the growthand expansion of tertiary education where professionals in charge of these sectors in the economy were trained. Soon after independence, there was the need for competent manpower in the Nigerian quest for development; consequently, upon this, the federal government embarked on the establishment of primary, secondary and tertiary institutions.

Education in Nigeria is more of a public enterprise that has witnessed government complete and dynamic intervention and active participation (Federal Republic of Nigeria, 1981). It is the view of the formulated education policy in Nigeria to use education as a vehicle in achieving national development, education being an instrument of change. In Nigeria, education policy has been a product of evolution through series of historical developments, improving the education is not only a goal in itself for a better quality of life, but also its positive impact on the economic development of a country is far-reaching. The provision of education is a key element of a policy to promote broad based economic growth. The main asset of the poor is clearly their labor and education improves the productivity and earnings of workers.

Education is considered a major remedy for many problems faced by developing countries. For example, high fertility rates are adding to population pressures in several countries. From a global perspective, economic and social development is increasingly driven by the advancement and application of knowledge. Education in general and higher education in particular, are fundamental to the construction of a knowledge economy and society in all nations (World Bank, 1999). Yet, the potential of higher education systems in developing countries to fulfill this responsibilitiesis frequently thwarted by long standing problems of finance, efficiency, equity, quality and governance. As a result, developing countries cannot be said to be reaping the benefits of a knowledge economy. It therefor became imperative with the aid of the Earnings Model developed by Miner (1974) which is founded on the theory of Investment in human capital, as well as the model by Morelti (2002) for social returns to education, to assess the development impact of higher education in Nigeria with a view to establish the link between Nigeria's educational system and her economic growth, as well as explicating how Nigeria can participate in the global knowledge economy. The result also revealed that a well-educated labor force possessed a positive and significant impact on economic growth through factor accumulation and on the evolution of total factor productivity. Also, the amount of government expenditure on education significantly influences output per worker growth.

LITERATURE REVIEW

Many observers have emphasized the crucial importance of human capital, particularly as attained through education to economic progress. An abundance of well-educatedpeople goes along with a high level of labor productivity. It also implies larger numbers of more skilled workers and greater

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ability to absorb advanced technology from developed countries. There have been a number of attempts to measure educational attainment across countries to quantify the relationship between it and economic and social outcome variables. Economists now accept that investment in education or human capital is an important element in the economic growth process. In reviewing the literature, Deniz and Dugruel (2008) traced the interaction between economic growth and education to the pioneering work of Becker (1962), Schultz (1960), Nelson and Phelps (1966). Later, following neo-classical growth theory introduced by Solow (1956), several growth models were developed to explain the interaction between economic growth and education.

The models developed by Romer (1986, 1990), and Lucas (1988) on the effects of technology on the economic growth stimulated a new wave of discussions on the role of education on economic growth. Solow-Swan model anticipate that the aggregate output depends on the quantities of physical capital and the labor. However, empirical research shows that the primary source of the economic growth is the level of technology. The mechanisms that produce new technology and enhance human capital formation are widely discussed by the studies on economic growth. Both theoretical models and empirical research show that, in addition to learning-by-doing, education is one of the main instruments to improve the human capital.

Economists have long known that people are an important part of the wealth of nations. Measured by what labor contributes to output, the productive capacity of human beings is now vastly larger than all other forms of wealth taken together. (Theodore, 2012)

Akerele (1991) recognizes that human capital is the unique element that makes the difference between one organization and the others. This is a source of distinctive competence for an organization. Harbinson (1973) in his article 'Human Resources as the wealth of the Nations', dramatize the importance of human resources capital development as follows: "Human resources, not capital, income or material resources constitute the ultimate basis for the wealth of nations. Capital and natural resources are passive factors of production, while human beings are the active agents who accumulate capital, exploit natural resources, build social economic and political organizations and carry forward national development clearly. A country which is unable to develop the skills and knowledge of its people and to utilize them effectively in the national economy will be unable to develop anything else" (Harbinson, 1973). According to Gbosi (2007), there are three types or means of investing in human beings; they are: education and training, health expenditure and research. He further stated that this aspect of investment in human capital will lead to an improvement in the quality of labor in employment. It will also increase the quantity of labor available for work either by reducing the amount of working times or by reducing the incidence of death among workers. A country's accumulation of human capital is seen as an investment decision, where the individual gives up some proportion of their income during the period of education and training in return for increased future earnings (BLUNDEL, 1999).

Studies have shown the handsome returns to various forms of human capital accumulation: basic education, research, training, learning– by doing and capacity building. Education enriches people's understanding of themselves and the world. It improves the quality of their lives and leads to broad social benefit to individual and society. Education raises people's productivity and creativity and promotes entrepreneurship and technological advances, demonstrated in several countries such as Malaysia, Bolivia, China (World Bank, 1999).

Most theoretical and empirical studies on education and economic growth, both cross-section and time-series, under distinct theoretical approaches, have repeatedly proved the existence of a significant association (and causality) between the economic performance of national economies and the level of education of their population. Long-run historical approaches concerning economic backwardness have underlined how a poorly educated, trained and culturally unaware population have been a decisive factor of persistent low productivity levels, low labor mobility, slow structural changes, slow diffusion of innovation, preventing sustained economic growth to set in. Moreover, if an economy, though succeeding, at last, to achieve modern economic growth is not able to overcome rapidly the human capital accumulation gap, some loss of opportunities for the expected catch up growth will be met and growth rates will be comparatively small (NUNES, 2001).

Schumpeter (1954) has similarly stressed the role of innovation (which is a by-product of education) in the process of economic growth. This he asserted can be achieved by assigning key role to entrepreneurs particularly because of their ability to innovate which could be seen in different ways: creation of new products, and new markets; designing of more cost effective method of production; and organizational reconstructuring.

A review literature on the link between education and economic growth is very illuminating. Many studies have found that additional years of education per person in the labor force increase real output or growth rate (World Bank, 1991; 1993).The literature on return to human capital in developing countries focuses predominantly on measuring the returns to additional years of schooling for wage earners. Psacharopoulos (1994) summarizes the results

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from more than 55 wages studies from Africa, Asia and Latin America.

These summaries present a consistent pattern of very large returns to primary education and somewhat smaller returns to secondary and post-secondary education.

Education is an important key of achieving a sustainable national development, the quality of its education should be improved. (Abubakar, 2014).

Psacharopoulos (1994) found that average private rate of return to primary education in developing countries was 29%, while the returns to secondary and post-secondary education were 18% and 20% respectively. The main problem with the focus of this study is that majority of individuals in developing countries are not wage earners. For example, only about 20% of working individuals in Ghana were wage earners at that time. Similarly, wage earners made up to 15% of work force in India, 19% in Haiti, 20% in Nigeria, and 11% in Togo (World Bank, 1995, Table A2).

Barro (1991) carried out a study on the effects of human capital on growth. His study was based on data sets pertaining to very diverse array of countries. He used a narrow flow of human capital such as school enrolment rates at the primary and secondary level. Human capital is implicitly referred to as formal and informal education, yet it can also contain factors such as the costs of raising children, health costs, and ability (LEEUWEN 2007).

Human Capital is recognized as an agent of national development in all countries of the world. Providing education and health services to people is one of the major ways of improving the quality of human resources. Apart from being issues of social concern, both provide an economy with healthy trained human resources required for economic growth and development. (ISOLA .A. Wakeel)

The importance of investing in education is well appreciated and understood in economies that wish to attain growth and development. Nigeria is rated by international standards as 'less developed' and thus has economic growth as a major goal. Indeed, the importance of a prime sector such as education has been stressed in Nigeria since the early sixties following the submission of the Ashby report in September 1960.

Uwatt (2002) empirically examined the impact of human capital on economic growth, using five variants of the original Solow Model linking physical capital, labor and human capital proxied by total enrolment in educational system to real Gross Domestic Product (GDP). The result showed that physical capital exerted a positive and very statistical impact on economic growth. Its coefficient was statistically different from zero at 5% significant level. Labor force that entered all the models in log form had also positive but statistically insignificant effects on economic growth.

Ndiyo (2002) on the 'Paradox of education and Economic Growth in Nigeria' modeled for contribution of education growth. He considered real growth of the gross product (RGDP) as respondent variable and gross fixed capital formation (GFCT), aggregate labor force (ALF) and real budget allocation to education (REDUB) as explanatory variables. He estimated the models in both level form and in logarithmic form respectively. From the two sources, it was observed that the growth of real gross domestic product (RGDP) is positively affected by the amount of physical capital and labor inputs in all the specifications but in most cases they have insignificant effects. He observed that contrary to prior expectations, the estimate for the impact of growth in educational capital on the growth of real Gross Domestic Product (GDP) was consistently negative. That growth in educational capital crowds out of GDP was a puzzle (Gylych JELILOV, Ilyas TOPARSLAN, 2015).

Investment in education is fast becoming very significant because of new challenges being faced in the Nigerian environment and the discovery of education as an impetus to economic growth and development. Various researchers (BAKARE, 2006, OLANIYAN and OKEMAKINDE, 2008) have explored the concept of human capital investment and have tried to empirically trace the linkage between education and economic growth.

Bakare (2006) investigated the growth implications of human capital investment in Nigeria using vector autoregressive error corrections mechanism. The study revealed that there is a significant functional and institutional relationship between the investments in human capital and economic growth in Nigeria since 1% fall in human capital investment led to a 48.1% fall in the rate of growth in gross domestic output between 1970 and 2000.

Olaniyan and Okemakinde (2008) carried out a research on the implications of educational development on human capital. They concluded that Nigeria is confronted by most of the problems that could limit the capacity of expansion in education to stimulate growth and development such as under-employment, low absorptive capacity, and shortage of professionals, regional imbalances and brain-drain.

Dauda (2009) carried out an empirical investigation on the relationship between investment in education and economic growth in Nigeria, using annual time series data from 1977 to 2007. The paper employs Johansen co-integration technique and error correction methodology. Empirical results indicate that there is indeed a long-run relationship

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between investment in education and economic growth. All the variables used including gross fixed capital formation and educational capital are statistically significant (except labor force) in the Nigerian economy. The findings have a strong implication on educational policy in Nigeria. The study seems to suggest that a concerted effort should be made by policy makers to encourage increase in educational investment in order to accelerate growth which would engender economic development (Gylych JELILOV, Ilyas TOPARSLAN, 2015).

Lawal and Wahab (2011), (Education and Economic Growth: The Nigerian Experience) concluded that the achievement of rapid economic growth through boosting and rapid investment in education is a decision in the right direction as much as it would not affect the average cost of education or reducing the quality of education. Nigerian economy wouldbenefit greatly from an increase in government expenditure that goes to the education sector even if it comes at the expense of a reduction in other aspect of investment.

Nurudeen and Usman (2010) carried out a disaggregated analysis on government expenditure and economic growth in Nigeria. Their analysis concluded that there was no significant relationship between expenditure on education and economic growth in Nigeria. However, they suggested that government should increase expenditure in the educational sector since it would increase productivity and economic growth (Gylych JELILOV, Samuel WAKDOK, 2016).

Adenuga (2006) examine the relationship between economic growth and human capital development using Nigeria data from 1970 to 2003. They applied cointegration theory incorporating the error correction mechanism and found that investment in human capital, through the availability of infrastructural requirements in the education sector accelerates economic growth. The paper then concludes that there can be no significant economic growth in any economy without adequate human capital development.

METHODOLOGY

The data used in this study were obtained from Central Bank of Nigeria Statistical Bulletin and World Bank data. The variables to be used are Real Gross Domestic Product, Capital Expenditure on Education, Recurrent Expenditure on Education, Primary School Enrolment and Secondary School Enrolment from 1970 to 2006.Therefore, in this section, a model that seeks to examine the impact of Export on economic growth in Nigeria will be used. The estimation of the model is via the ordinary least squares (OLS) facilitated by the application E-views, the regression output includes other relevant statistics that enhances further analysis and evaluation. The model employed in this paper is multiple regression models. The model is specified as follows:

RGDP= F (CEDU, REDU, PRYE, SECE)…… (3.1)

Linearized thus;

$RGDP = b_O + b_1CEDU + b_2 REDU + b_3 PRYE + b_4 SECE + U$… (3.2)

Where:RGDP = Real Gross Domestic Product

CEDU = Capital Expenditure on Education

REDU = Recurrent Expenditure on Education

PRYE= Primary School Enrolment

SECE= Secondary School Enrolment
(Schumpeter, 1954)

U = Error Term

INTERPRETATION OF RESULTS

To examine the impact of education on economic growth and to avoid spurious results the study employed the use of unit root test using ADF. The result is presented as follows:

TABLE .1. ADF Test for LRGDP, LCEDU, LREDU, LPRYE and LSECE

Variables	level		First difference		Remark
	Intercept	Trend & Intercept	Intercept	Trend & Intercept	
LRGDP	0.985800	-1.435483	-5.396366**	-5.599312**	stationary at first difference
LCEDU	2.556967	11.67029	8.228473 **	4.470581**	stationary at first difference
LREDU	1.334661	0.224451	0.694220**	0.728381**	stationary at first

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					difference
LPRYE	-1.471902	-4.946371	-6.209136**	-6.196852**	stationary at first difference
LSECE	-1.530618	-3.307547	-11.87414**	-11.87768**	stationary at first difference

Note: ** shows Stationarity @ 5% level of significance
From the above table, all the variables are stationary at 1st difference

TABLE .2. The estimated model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	25716.28	32975.26	0.779866	0.4412
LCEDU	1.912247	0.768591	2.487991	0.0182
LREDU	0.735223	0.586483	1.253613	0.0291
LPRYE	-0.007700	0.006257	-1.230632	0.2274
LSECE	0.082915	0.019629	4.224175	0.0002
R^2=0.91	$\hat{R}^2$ = 0.89	F-statistic=81.52	F_{Prob} 0.000	DW= 1.51
Akaike criterion= 24.7 Schwarz= 24.9 RSS= 8.84				

From the above table, it is apparent that the coefficient of education and GDP are positive and statistically significant with the prob values of less than 0.05 percent but with the exception of primary school enrolment (PRYE). The coefficient of determination R^2 is 0.91. This is very high, goodness of fit indicating that about 95% of the variation LRGDP is explained by changes in the independent variable. The DW is 1.51 which is approximately 2 and is in line with the rule indicating that there was no sign of autocorrelation in the model.

The results further show that the overall regression is statistically significant with F-statistics of 81.52 and the Prob (F-statistics) of 0.000. This indicates that the overall regression is statistically significant at 95% degree of confidence level.

CONCLUSION AND RECOMMENDATIONS

The aim of this paper is to analyze the impact of education on economic growth of Nigeria using ordinary test squares (OLS) to determine the relationship between education as human capital and Real Domestic Product (GDP). The study therefore found that there is statistically significant relationship between GDP and all the variables used in the study with the exception of primary school enrolment (PRYE). The negative coefficient of the PRYE is also an indicator that there are problems at this level of education in Nigeria, facilities for education at this crucial primary school level is still poor in the country, especially at local government levels, the government therefore require a total restructuring of the primary education to improve its standard and level of enrolment.

From the above it is therefore recommended that the Nigerian government need to set up appropriate policies that will modify the educational sector of the economy to improve its standard as well as making education affordable and accessible to all.

Incentives that will improve teachers performances and availability of educational infrastructures is also to be examined so as to enable the country increaseits human capital formation that could lead to possible growth and development.

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