

TERTIARY SCHOOL ENROLMENT IN NIGERIA: IMPLICATION FOR NATIONAL DEVELOPMENT

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ABSTRACT: *The paper evaluates tertiary school enrolment in Nigeria: Implication for national development. The main aim of the paper is to assess the effect of tertiary school enrolment on economic growth in Nigeria. It is equally discovered that while tertiary enrolment is nominally increasing, in real terms, it is abysmally nose-diving. The analyses used for the study include the Ordinary Least Square estimation techniques, unit root test, co-integration test and the variance decomposition test to analyze the empirical model of the study. The findings of the empirical investigation confirm that tertiary enrolment is veritable tools through which appreciable economic growth can be enhanced in Nigeria. The study equally observed that tertiary school enrolment and government recurrent expenditures are statistically significant in explaining growth in the Nigerian economy. The paper therefore recommends among others that government should as a matter of urgency give immediate employment to all NCE graduate, this will encourage and increase the number of people seeking enrolment in the colleges.*

KEYWORDS: tertiary enrolment, economic growth, government expenditure, national development, recurrent expenditures, capital expenditures

INTRODUCTION

The main engine of growth is the accumulation of human capital of knowledge and the main source of differences in living standards among nations is differences in human capital. Physical capital plays an essential but decidedly subsidiary role. (Lucas, 1993). Broadly defined, human capital has several aspects, including education, training, and health. This paper explores the growth effects of one aspect of human capital higher education human capital.

The relationship between education and development is well established such that education is a key index to development and that the development of nations in the 21st century depends on the quality and quantum of their educated citizens (World Bank, 2008). It has been documented that schooling improves productivity, health and reduce negative features of life such as child labour as well as bringing about empowerment. From a global perspective, economic and social developments are 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-based economy and society in all nations (World Bank, 2008). Besides acting as an important vehicle of achieving equitable income distribution, human resource development is also a potent means of addressing the problem of poverty. Thus, education is very vital to the pace of social, political and economic development of any nation. Corroborating this increased global awareness regarding the significance of education, the United Nations (UN) dedicated a goal (Goal

2) in the Millennium Development Goals (MDGs) to achieving Universal Primary Education (UPE) among the member nations by 2015.

Specifically, the most obvious direct benefit of education is that educated workers will receive higher income apparently due to increased productivity than those who are less educated. Thus, the direct benefit of education to any individual is higher lifetime earnings (Glick and Sahn, 2000; Lincove, 2009). Enrollment rates and years of schooling have risen in most countries of the world and this can be attributed to successive generations of parental investment in children's education within the confine of a stable household structure. Overtime, these investments have narrowed the differences in schooling across and within countries, and between and within genders. In 1960, the average schooling of men aged 25 and over in advanced countries were 5.8 times that of men in developing countries. In 2000, this ratio fell to 2.4. During the same period, women's average schooling level as a ratio of men's increased from 0.5 to 0.7 in developing countries. While increasing incomes, shifts in demand for more skilled labour, and government investment of considerable resources on building and equipping schools (through various policy interventions), have all contributed to this global convergence in enrollment rates and completed years of schooling, nevertheless, substantial education gaps persist between the rich and the poor countries, and between males and females in many developing countries (Orazem and King, 2008).

In Nigeria, available evidence has shown that tertiary enrolment growth rates are quite inconsistent and sluggish. The profile of tertiary enrolment in Nigeria reveals that tertiary enrolment has relatively been increasing over the years with the highest growth rate of 219.64 percent in 1997 and the lowest growth rate in 2004. However, 1995 and 2004 recorded major distortions in the tertiary enrolment in Nigeria. This is essentially due to the political crisis and industrial dispute witnessed during these periods. It should be noted that in spite of various policy interventions initiated by the government over the years to stimulate schooling at all levels of education, enrolment rates of school-aged children still remain abysmally poor. Apart from this, documentary evidence of the impact of education, generally, on economic growth is legion but the impact of tertiary enrolment specifically is still very nascent. Therefore, the main objective of this paper is to examine the impact of tertiary enrolment on economic growth in Nigeria

The fact that different schooling levels of education may have different effects on growth has been addressed in a small set of recent papers. The motivation for this study comes from the necessity of identifying the potential impact of the different schooling levels on economic growth, in the period that an educational expansion took place especially in secondary and mainly in higher education. The results may improve the decisions of policymakers about education and its contribution to economic growth.

The major focus of this paper is to evaluate Tertiary school enrolment in Nigeria: Implication for National Development the paper is organized as follows. The next section provides the link between education and economic growth and also considered education as a major factor in human capital. The third section considers the stylized facts on education and growth in Nigeria.

REVIEW OF EMPIRICAL LITERATURE

According to the existing literature, there is a large amount of evidence that human capital has a significant impact on economic growth. Although a few empirical studies focus on the impact of different education levels on economic growth. The main studies that have examined the impact of the educational levels on economic growth are Liu and Armer (1993) found that both primary and junior high achievement variables add explanatory power to economic growth in Taiwan, but senior- high and college education did not exert any significant effects on growth.

Tallman and Wang (1994) showed that higher education has a greater positive impact on growth in relation to primary and secondary education for the case of Taiwan. Mingat and Tan (1996) for a sample of 113 countries found that higher education has a positive statistically significant impact only in the group of developed countries, while the primary has a positive effect in less developed and secondary a positive effect in developing. Gemmell (1996) for OECD countries concluded that primary education most affects the less developed countries, while secondary and higher education the developed ones. Mc Mahon (1998) examined the effect of the three levels of education on economic growth for a sample of Asian countries and concluded that primary and secondary level have a significantly positive effect on economic growth, while higher is negative.

Abbas (2001) for the countries of Pakistan and Sri Lanka showed that the primary has a negative effect on economic growth, while secondary and higher education have a positive and statistically significant impact on economic growth in both countries.

Petrakis Stamatakis (2002) found that the growth effects of education depend on the level of development; low-income countries benefit from primary and secondary education while high-income developed countries benefit from higher education. Self and Grabowski (2004) for the case of India showed that except higher education the primary and secondary education had a strong causal impact on economic growth. Villa (2005) investigated the effect of the three levels of education on economic growth for Italy and found that the higher and secondary education has a positive effect on economic growth, while the primary has no significant effect.

Gyimah, Paddison and Mitiku (2006) found that all levels of education have a positive and statistically significant impact on the growth of per-capita income in African countries. Lin (2006) for the case of Taiwan found that primary, secondary and tertiary, have a positive impact on economic growth. Chi (2008) showed that in China, higher education has a positive and larger impact on GDP growth than primary and secondary education.

Econometric Model and Estimation Method

(a) Econometric Model

The approach we use to investigate Tertiary School enrolment: Implication for National Development is to estimate an expanded neoclassical growth equation of the MRW type that uses three levels of education – higher, secondary, and primary as our measures of human capital, here more emphasis will be on tertiary school enrolment since institutions are very important for the efficient functioning of an economy.

The empirical analysis of this paper uses the methodology of neoclassical theory. Following MRW's (1992) augmented neoclassical model we assumed a Cobb-Douglas production function with constant returns to scale and decreasing returns to capital, augmented with the exogenous level of technological progress and human capital. The principal assumptions of their model included country specific constant rates (steady state) of investment in human and physical capital. The Cobb-Douglas production function of MRW model has been given in the following form:

$$Y = K^\alpha H^\beta (AL)^{1-\alpha-\beta}$$

where Y represents aggregate output, K is the physical capital, H is human capital and A is a technical efficiency index and L is labour. One assumes that L and A grow at constant and exogenous rates.

The proxy of national development is a key issue in the empirical growth model, as it would improve the performance of the growth model. The estimation of this variable is achieved by using the following model with some adjustments to suit the purpose of the study with regards the Nigerian economy. To make the model significant to our study, we modified the model to include other variables as Real gross domestic product as proxy for National development (Y), Tertiary school enrolment (TSE) and government recurrent expenditure on education ($GREE$). The three variables were included to capture tertiary school enrolment and national development.

$$Y = F(TSE, GREE) \quad \dots \quad 1$$

Conducting a step-wise regression so that;

$$Y = a_0 + a_1 TSE + a_2 GREE + U_t \quad \dots \quad 2$$

Where,

Y = National development

TSE = Tertiary school enrolment

$GREE$ = Government Recurrent Expenditure on Education

U_t = Error term

a_0, a_1, a_2 are parameters to be estimated

Tertiary school enrolment: This is expected to have positive sign because an increase in tertiary school enrolment is expected to lead to increase in national growth of the Nigerian economy.

Government recurrent expenditures on Education: This is expected to have a positive sign because an increase in government recurrent expenditure on education is expected to lead to increase in productivity and efficiency of workers by increasing the level of their cognitive skills thereby leading to national development or growth.

Data sources

The data for all the variables have been taken from the World Bank online database and central bank of Nigerian statistical bulletin (CBN Bulletin) several issues. That of Tertiary education indicators comes from the UNESCO educational database. The data are secondary in nature

Data Analysis and Interpretation

This study is to evaluate tertiary school enrolment in Nigeria: Implication for national development. Under this section, an empirical analysis of the model presented is carried out; the results is interpreted and explained. This part, therefore, consists of trend analysis, presentation and discussion of result. The result of the unit root test is presented in table one below:

Table 1: Summary of ADF unit Root Test Result

Variables	Levels data	1 st diff.	2 nd diff	1% cri. value	5% cri. value	10 % cri. value	Stat us
TSE	0.721687	-4.276342	-	-3.808546	-3.020686	-2.650413	I(1)
REOE	-1.721616	-1.802329	-12.13545	-3.769597	-3.004861	-2.642242	I(2)

Sources: Author calculation using E – Views.

The Augmented Dickey Fuller (ADF) unit root test result suggests that Tertiary school enrolment (TSE) is stationary at first difference, that is I(1) and Recurrent expenditures on education (REOE) became stationary at second difference, that is I(2). This can be seen by comparing the observed values (in absolute terms) of the ADF statistics at 1 percent, 5 percent and 10 percent levels of significance. Since all these stated variables were stationary at first difference on the basis of this, the null of non-stationarity is rejected and it is safe to conclude that the variables are integrated of order one, that is, I(1).

Co-integration Test

The Johansen co-integration test was used to test the long-run equilibrium relationship among the variables.

**Table 2 shows the Johansen test result
Unrestricted Co-integration Rank Test (Trace)**

Hypothesized No. of CE(s)	Eigen Value	Trace Statistics	0.05 critical value	Prob.**
None *	0.681308	40.08366	29.79707	0.0023
At most 1*	0.407072	13.78245	15.49471	0.0891
At most 2*	0.073697	1.760743	3.841466	0.1845

Trace test indicates 1 co-integrating eqn(s) at the 0.05 level

**denotes rejection of the hypothesis at the 0.05 level*

***Mackinnon-Haug-Michells (1999) p-values*

Unrestricted Co-integration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigen Value	Trace Statistics	0.05 critical value	Prob.**
None *	0.681308	26.30121	21.13162	0.0085
At most 1*	0.407072	12.02171	14.26460	0.1098
At most 2*	0.073697	1.760743	3.841466	0.1845

Trace test indicates 1 co-integrating eqn(s) at the 0.05 level

**denotes rejection of the hypothesis at the 0.05 level*

***Mackinnon-Haug-Michells (1999) p-values*

The result of the Johansen co-integration test indicates one (1) co-integrating equation at 1 percent significance level using trace test. Thus the null hypothesis of no co integration was rejected for the trace statistics. The Maximum Eigenvalue statistics also indicate one (1) co-integrating equations. Following Harris (1995), in case of differences in the number of stco-integrating equations the trace statistic supersedes.

Variance Decomposition Analysis

The variance decomposition (VDC thereafter) is estimated for each variable in the VAR models for a period of ten years. As the years pass tertiary school enrolment gradually affect more the variation of national development or economic growth. Variance decomposition is a standard VAR tool that help us to realise what proportion in the variance of the next period certain shocks have, i.e. it breaks down the proportion of the variability of each variable on the part of the variability that resulted from the shock of the variable and the variability that is the result of shocks in other variables (Ravnik and Žilić, 2011). Table 5 shows the percentage of the forecast error variance decomposition of GDP growth rate. We attempted to estimate that what percentage of the forecast variance is for determining shocks to each of the variables. Shocks to tertiary school enrolment appeared to be the most effective variable in explaining the variation in national development. As also shown from table above, tertiary school enrolment became the second after real gross domestic product. It explains 79.33% (in the third period) of the variation in GDP growth, while shocks to recurrent expenditures on education explain only 14.77% of changes in GDP growth rate. In the first period tertiary school enrolment explains 0.50% variation on national development in the 5th period while shocks to recurrent expenditures on education explain 34.54% variation to growth in the same period. These findings imply that national development and recurrent expenditures on education are the two most effective variables influencing growth in the tertiary school enrolment in the colleges of education in Nigeria.

CONCLUSIONS AND RECOMMENDATIONS

It is evident from the above analysis that tertiary enrolment is a veritable tool for enhanced economic growth in Nigeria. The result, in addition, established that without government expenditures on education national development may not be achieved as this is reflected in the t-test value of tertiary enrolment (5.135676). Again, the study has also confirmed the UNESCO's position of improved government investment in education as this can exert significant impact on tertiary school enrolment and by extension generate economic growth for the country. In

conclusion, unless conscious and aggressive funding is bestowed on the education sector in the country, the declining trend of school enrolment in the colleges of education will continue as can be shown in the variance decomposition test

In the light of the findings of this study, the following recommendations are made:

1. There is need for government to adequately and conscientiously fund the education sector in the light of weak and sluggish contribution of the sector to development in the country.
2. There should be effective and functional regulatory framework saddled with the responsibility of monitoring the public funds committed into the educational sector in order to guide against wastages.
3. The government should as a matter of urgency give immediate employment to all NCE graduate, this will encourage and increase the number of people seeking enrolment in the colleges.

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