Impact of government expenditure on education: The Nigerian experience

Obi, Zita Chika¹ and Obi, Cyril Ogugua²*

¹Department of Science Education, Anambra State University, Uli, Anambra State, Nigeria.
²Department of Economics, Anambra State University, Igbariam campus, Anambra State, Nigeria.

ABSTRACT

Nigeria has over the years invested substantially to improve the educational attainment of the labour force and to raise productivity but yet still faces declining real output and slow economic growth. The paper focuses on the impact of education expenditure on economic growth as a means of achieving the desired socio-economic change needed in Nigeria. The study uses time series data from 1981 to 2012. The Johansen's co-integration analysis and ordinary least square (OLS) econometric techniques were used to analyze the relationship between gross domestic product (GDP) and recurrent education expenditure. Findings indicate that though a positive relationship subsists between education expenditure and economic growth, but a long run relationship does not exist over the period under study. The study observed that this puzzle is attributable to labour market distortions, redundancy of the workforce, industrial dispute and job discontinuities as well as leakages in the Nigerian society such as brain drain, among others. In conclusion, the above study has shown that educational sector has not been productive as expected. This is evidenced by the poor quality of graduates, increasing cases of cultism in schools and high rates of drop-outs. The paper further suggests the improvement of the education system through efficient use of public resources through good governance, accountability and transparency. Also, efforts should be made by policy makers to come up with policies that would check, preserve and protect the plight of educational capital to other countries.

INTRODUCTION

It is widely accepted that education creates improved citizens and helps to upgrade the general standard of living in a society. Therefore, positive social change is likely to be associated with the production of qualitative citizenry. It would seem to follow naturally that if more individuals are educated, the wealth of nation would rise, since more education attracts higher wages and aggregatively higher national income. And if there are positive externalities of education, national income would increase by even more than the sum of the individual benefits. This increasing faith in education as an agent of change in many developing countries including Nigeria has led to a heavy investment in it, and thus the delegation of manpower development to the schools. The pressure for higher education and even school education in many developing countries has undoubtedly been helped by public perception of financial reward from pursuing such education. Generally, this goes with the belief that expanding education promotes economic growth.

The need for increasing public expenditure could be found in various theories of public expenditure. The theories of Wagner, Musgrave theory of increasing state activities, the Keynesian theory of deficit financing

*Corresponding author. E-mail: obicyw@yahoo.com.
(Alajekwu and Obi 2011), all emphasized the need for government spending to enhance economic welfare through its spending in the provision of public goods. According to Keynesian view (Alajekwu and Obi 2011), government could reverse economic downturns by borrowing money from the private sector and then returning the money to the private sector through various spending programs.

High levels of government consumption are likely to increase employment, profitability and investment via multiplier effects on aggregate demand. Thus, government expenditure, even of a recurrent nature, can contribute positively to economic growth (Chude and Chude, 2013).

Education is one of the important areas where governments in both developed and developing economies direct its resources. The belief is that the result from education expenditure will go a long way in transforming human, social, economic, cultural and other aspects of the people’s lives. But however, the paradox accompanying this belief is that, despite the huge investment in education, there exist no strong evidence of growth-promoting externalities of education in Nigeria, but rather, education expansion further deepens social inequality and inculcate negative social changes such as cultism, rent seeking, sexual harassment, sorting, result racketeering, industrial disputes, brain drain among other social vices in the Nigerian school system and the society at large.

The puzzle is - why has Nigeria that had invested substantially in education over the years be facing declining in real income and sluggish economic growth rate? Many theories and studies are of the opinion that education expenditure impacts growth and the society positively. One problem with education expenditure in Nigeria is the highly skewed nature of the trend of recurrent expenditure. With the incessant strike actions embarked upon by teachers at all levels in recent times, the future remains bleak for the sector. This leaves government with lean resources for capital expenditure in education.

However, the situation on ground with regards to education expenditure is different from what the theory says. This forms parts of the reasons for this study - to determine the impact of education (recurrent) expenditure on economic growth and to compare the result with the facts on ground and come up with some ways forward.

Hypotheses of Study

H₀: There is no significant relationship between government expenditure (recurrent) in education and economic growth.

H₁: There is significant relationship between government expenditure (recurrent) in education and economic growth.

Education in Nigeria

According to Omojomite (2010), the education sector in Nigeria has passed through two phases of development: the phase of rapid expansion in the growth of the sector (1950 – 1980); and the second phase of rapid decline in the sector in terms of growth (1981 – 2009). A look at the trend of events indicates that the situation still remains the same with the latter period to date.

During the first phase when representative governance took its roots in Nigeria, the three regional governments had control of the educational development in their respective regions. This first period marked the beginning of rapid expansion in terms of access. For example the number of pupils in primary schools was 626,000 in 1954, the figure rose to 2,912,619 in 1960. Similarly the number of post primary school rose from 161 in 1955 to 912 in 1960. The student population in post primary schools rose from 9,908 in 1947 to 140,401 in 1960 (Aigbokhan et. al., 2005). The surge in access to schools was due largely to the policies and programmes of governments that built primary and post primary schools and also provided grant – in – aid to missionary schools. We must note here that the missionary churches dominated the provision of schools before the government took over of primary and post primary schools in the early 1970s (Omojomite 2010).

Educational curriculum at this first period was not local oriented. It was based on colonial ideology by the British. It must be noted also that at this initial phase of educational development no effort was made to select school curricula that would meet the long-run developmental needs of the Nigeria society. Rather emphasis was placed on numeracy and general intellectual capacity while technical and practical skills were neglected. The university college Ibadan which was the only university in Nigeria before 1960 had no facilities of engineering, law and technology (Omojomite 2010).

During this period, access to tertiary education was easy with the establishment of the University of Nigeria, Nsukka (1960), University of Lagos (1962), University of Ife, Ile–Ife (1961), Ahmadu Bello University, Zaria (1962), and University of Benin, Benin City (1970). These universities were established and funded by the post independence regional governments. In 1975, the military government took over the regional universities and also extended grants—in—aid to state owned polytechnics. More universities and colleges of technology (polytechnics) were established between 1975 and 1980. In establishing the new educational institutions, sound investment criteria were not followed; instead the need to have regional balance, ethnicity, nepotism and opportunity for personal gains were the determining
factor (Awopegba and Adedeji, 2000). Also, during this period, precisely 1976, the government introduced the universal primary education (UPE) programme. This policy made primary education free to all Nigerian children. In 1976, a new structure was introduced into the education system in Nigeria to replace the old structure of 6 years primary; 5 to 7 years post primary (that is, secondary, teacher training colleges and sixth form or higher school) and 4 – 7 years of tertiary education (University, Polytechnics and colleges of education).

The second phase of the educational development in Nigeria was a period characterized by a decline in educational inputs leading to deterioration of educational fixed assets, inadequate funding and declining standards. Aigbakhan et al. (2005) noted that the period 1978 – 1999 was a crisis period in the education sector in Nigeria and the root cause of the crises was inadequate funding (Omomjote 2010). Omomjote (2010) advanced for the low and unstable trend in the allocation of resources to the education sector:

- The dwindled oil revenues due to a fall in oil prices in the early 1980s lowered federal government budgetary allocations and education sector was badly hit.
- The IMF/World Bank inspired structural Adjustment Programme (SAP) that was adopted as a development policy beginning from 1986 engendered cuts in fiscal spending including education expenditure.
- The debt overhang of the 1980s and 1990s constrained the amount of resources available for the other sectors of the economy including the education sector.
- It has also been suggested that the long military rule in Nigeria favoured the defence sector to the neglect of the education sector in terms of resource allocation.
- Widespread corruption in the management of educational institutions by political and school administrators has contributed to the underfunding of the education sector in the past three decades.

Omomjote (2010) states that what is new in the new system is that post primary education is now made of two tiers, that is, three years of Junior secondary and 3 years of Senior secondary education for ages 11-13; 3 years of senior secondary school for ages 14 – 16 years and 4-7 years of tertiary education for ages 17 years and above. In spite of these changes in curriculum which is facing dwindling funding, education in Nigeria is yet to improve to bring about the highly desired socio-economic change.

LITERATURE REVIEW

Omotor (2004) in his study analyzed the determinants of federal government expenditures in the education sector in Nigeria using the ordinary least squares (OLS) methods. His work shows that the trend in education expenditure in Nigeria is unstable which reflects the instability in government earning. Government revenue was the only significant determinant of education expenditures as revealed by the results of the regression. The study recommends a diversification of the sources of funding education so as to reverse the unstable trend in that sector.

The duo of Babatunde and Adefabi (2005) examined the long-run relationship between Education and economic growth in Nigeria using the Johansen co-integration approach as a framework of analysis. The co-integrating technique investigation suggest that there is long-run relationship between enrolments in primary and tertiary levels of education and the average years of schooling with output per worker. The study concluded that a well educated labour force possessed a positive and significant impact on economic growth through factor accumulation and on the evolution of total factor productivity.

Adebiyi and Oladele (2005) empirically investigated the relationship between public education expenditure and defence spending in Nigeria. The study employed the error correction mechanism and the vector auto-regressive (VAR) models and found a negative tradeoff between defence spending and public education expenditure. Analysis of the impulse response functions derived from the VAR model reveals that past public education expenditure shocks has a positive but declining relationship with current public education expenditure in the first two years after which it turns negative. Also, the impulse responses show that increase in defense spending will increase public expenditure available for education in the short-run. The study did not examine the causal link between the various levels of education and economic growth.

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 between investment in education and economic growth. All the variables used including gross fixed capital formation and educational capital are statistically significant (except labour 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.

are applied to test the hypothesis of a growth strategy led by improvements in the education sector. The results show that there is co-integration between public expenditures on education, primary school enrolment and economic growth. The tests revealed that public expenditures on education Granger cause economic growth but the reverse is not the case. The tests also revealed that there is bi-directional causality between public recurrent expenditures on education and economic growth. No causal relationship was established between capital expenditure on education and growth, and primary school enrolment and economic growth. The paper recommends improved funding for the education sector and a review of the primary school curricula to make it more relevant to the needs of the Nigerian society.

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.

Lawal and Wahab (2011) considers the relation that is established between education and economic growth in Nigeria. Education is seen here as representing one of the primary components of human capital formation, which is an important factor in modeling the endogenous growth. Human capital is essentially important in achieving a sustainable economic growth; however, the greatest contribution is accomplished through investment in the quality and quantity of education. Time series data were collected between 1980 and 2008, and OLS technique was used to estimate the model. It was discovered that education investments have direct and significant impact on economic growth in Nigeria. It was therefore recommended that government at all levels should increase their funding on different segments of education in the country.

Odeleye (2012) examines the impact of education on economic growth using primary and secondary annual data ranging from 1985 to 2007. The findings show that only recurrent expenditure has significant effects on economic growth as the academic qualifications of teachers also have significant impact on students' academic performance. Among other, this paper recommends that the government should increase its expenditure on education especially, the capital expenditure, while a good salary scheme with other incentives for teachers' motivation should be implemented.

Chude and Chude (2013) investigate the effects of public expenditure in education on economic growth in Nigeria over a period, from 1977 to 2012, with particular focus on disaggregated and sectoral expenditures analysis. The study used Ex-post facto research design and applied time series econometrics technique (Error Correction Model) to examine the long and short run effects of public expenditure on economic growth in Nigeria.

The results indicate that total expenditure on education is highly and statistically significant, and have positive relationship on economic growth in Nigeria in the long run. The study concluded that economic growth is clearly impacted by factors both exogenous and endogenous to the public expenditure in Nigeria. It is therefore recommended that, there is need for government to reduce its budgetary allocation to recurrent expenditure on education and place more emphasis on the capital expenditures so as to accelerate economic growth of Nigeria.

This present study employed an endogenous production function to study the relationship and impact of recurrent expenditure on education and economic growth in Nigeria.

The framework

To promote economic growth, factors of production such as capital and labour are used. But the efficient use of labour and capital resources for greater productivity requires that the workers are well trained and skilful. The training and skills acquisition are mainly accumulated through education. Education is an economic good because it is not easily obtainable and therefore need to be apportioned or traded. Economists regard education as both consumer and capital good because it offers utility to a consumer and also serves as an input in the production of other goods and services. As a capital good, education can be used to develop human resources necessary for economic and social transformation. The focus on education as a capital good relates to the concept of human capital, which emphasizes that the development of skills is equally an important factor in production as are finance, natural resources and physical equipment. Thus, the framework for this study assumes a stable Endogenous production function in which changes in output are due to changes in the quantity and quality of inputs and advances in knowledge. Considering such aggregate function, Solow in Jhingan (2000) postulates the production function in a special form as:

\[ Y = f(K, L, T_o) \]

(1)

Therefore, growth of output is a function of the capital stock \((K)\) and the labour force \((L)\) as well as a measure of educational training \((T_o)\), which is a policy variable that also contributes to national output.

DATA AND METHODS OF ANALYSIS

This research follows the ex-post facto design.
Onwumere (2005) is of the opinion that the ex-post facto research design establishes a causal link between the dependent and the independent variables. From the foregoing, therefore, it is conclusive that the best research design for this research is the ex-post facto research design, hence its adoption for this study. This study follows econometric research methodology in which the research employed the co-integration and Error correction model techniques to analyze the time series data ranging from 1981 to 2012. These secondary data was obtained from the Central Bank of Nigeria Statistical Bulletin various issues.

Model specification

From the foregoing discussions arising from the framework of the study, the following model was employed in this study. Equation (1) is an Endogenous growth function stated in a more flexible form with constant term, thus:

\[ Y = \alpha_0 + \alpha_1 K + \alpha_2 L + \alpha_3 EDUXP + \mu \]  \hspace{1cm} (2)

Where;
- \( Y \) = index of domestic output (GDP)
- \( K \) = index of capital input (GFCF)
- \( L \) = index of labour input (LABF)
- \( EDUXP \) = education expenditure
- \( \mu \) = stochastic term.

RESULTS AND DISCUSSION

The basic OLS result shown in Table 1 indicates that the coefficient of the variable for educational expenditure is statistically and positively significant to economic growth in Nigeria over the period under study. This can be seen since the probability value of the \( t \)-statistic falls below 0.05 level of significance. This implies that a 1% increase in educational expenditure causes GDP Income to increase by 0.12%. The \( F \)-statistic tells us that all the explanatory variables are statistically significant in determining the dependent variable. The \( R^2 \) (coefficient of determination) with a value of 94.8% indicates that the model is adequate in measuring the relationship stated by the production function. The Durbin Watson statistics was used to test for the presence of auto-correlation, 1.6 which is close to 2, suggest no auto-correlation.

However, these estimates cannot be said to be reliable if we do not check to see if the time series data satisfies the basic assumptions of OLS, least our result becomes ‘spurious’. We start by carrying out the test for stationarity in Table 2, using the Augmented Dickey-Fuller Unit root test of the time series data. The result indicates that all the time series data were integrated at order one. Since they are not integrated at levels, that is \( I(0) \), we go on to conduct the co-integration test.

The principle of co-integration is based on the notion that individual time series data may not be stationary, but a linear combination of these time series may produce stationary result. When this happens, we say that the time series are co-integrated, meaning that there is long run relationship between the variables. Table 3 shows the result of the multivariate residual analysis.

The decision rule involves the use of the trace statistic to compare the 5 and 1% critical values. Since the critical values exceed the trace statistic, no co-integration exists. From Table 3, none of the values of the trace statistic exceeds the 5 and 1% critical values, hence co-integration does not exist. Therefore, there is no adjustment for the error correction model. The implication of the above finding is that recurrent expenditure has no long run relationship with economic growth. Therefore, the regression estimates obtained in the basic OLS are not robust and reliable. In fact they are spurious (nonsensical). The practical implication of this finding is that recurrent expenditure in education does not support economic growth in Nigeria. This finding agrees with that of Nurudeen and Usman (2010) which posits that there was no significant relationship between expenditure on education and economic growth in Nigeria. On the other hand, the finding of Dauda (2009) contrasted with our finding in this study. This could be attributed to the differences in proxy used by the two researchers. The question raised here becomes: how do we regenerate education in Nigeria?

Firstly, the above finding should be seen as a puzzle which may be attributable to many factors. It may be due to the fact that the newly created educational capital has gone into piracy; that is, privately remunerative but socially unproductive activities, or there has been slow growth in the demand for educated labour, such that the supply of educational capital has outstripped demand and returns to schooling have declined rapidly, or perhaps the education system has failed, such that a year of schooling provides few (or no) skills.

The following reasons are adduced for this puzzle in this study:

- There is a huge labour market distortion. This is manifested in ways like disguised unemployment, job mis-match, emphasis on paper qualification rather than skill and competence.
- The issue of education staff redundancy. The education sector is filled with a lot of untrained teachers. Ageing workers who refuse to retire from public service through age under-declaration and re-declaration are currently redundant too. Teachers who use work period to carry out their own private businesses.
- Brain drain is another problem. The answer perhaps is that there are not enough people in Nigeria with
Table 1. Ordinary least squares analysis.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t-statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>9.393175</td>
<td>0.280246</td>
<td>33.51756</td>
<td>0.0000</td>
</tr>
<tr>
<td>LOG(K)</td>
<td>-0.026645</td>
<td>0.048165</td>
<td>-0.553198</td>
<td>0.5845</td>
</tr>
<tr>
<td>LOG(L)</td>
<td>0.249715</td>
<td>0.038589</td>
<td>6.471174</td>
<td>0.0000</td>
</tr>
<tr>
<td>LOG(EDUXP)</td>
<td>0.123106</td>
<td>0.007252</td>
<td>16.97456</td>
<td>0.0000</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.948384</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean dependent var</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.942854</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S. D. dependent var</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S.E. of regression</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Akaike info criterion</td>
<td></td>
<td></td>
<td>1.587568</td>
<td>0.0000</td>
</tr>
<tr>
<td>Sum squared resid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schwarz criterion</td>
<td></td>
<td></td>
<td>1.404351</td>
<td>0.0000</td>
</tr>
<tr>
<td>Log likelihood</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson stat</td>
<td>1.622851</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Augmented unit root test.

<table>
<thead>
<tr>
<th>Variable</th>
<th>t-statistic</th>
<th>5% critical value</th>
<th>Order of integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log(EDUXP)</td>
<td>-5.446945</td>
<td>-2.9665</td>
<td>I(1)</td>
</tr>
<tr>
<td>Log(GDP)</td>
<td>-3.320825</td>
<td>-2.9665</td>
<td>I(1)</td>
</tr>
<tr>
<td>Log(K)</td>
<td>-3.579652</td>
<td>2.9665</td>
<td>I(1)</td>
</tr>
<tr>
<td>Log(L)</td>
<td>-4.313786</td>
<td>2.9665</td>
<td>I(1)</td>
</tr>
</tbody>
</table>

Table 3. Johansen co-integration test.

<table>
<thead>
<tr>
<th>No. of CE(s)</th>
<th>Eigenvalue</th>
<th>Trace Statistic</th>
<th>5 Percent</th>
<th>1 Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>0.428343</td>
<td>35.46710</td>
<td>47.21</td>
<td>54.46</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.374917</td>
<td>18.69059</td>
<td>29.68</td>
<td>35.65</td>
</tr>
<tr>
<td>At most 2</td>
<td>0.141968</td>
<td>4.594466</td>
<td>15.41</td>
<td>20.04</td>
</tr>
<tr>
<td>At most 3</td>
<td>3.49E-05</td>
<td>0.001047</td>
<td>3.76</td>
<td>6.65</td>
</tr>
</tbody>
</table>

sufficiently high incomes to bid our own trained teachers away from the incomes they can command abroad. However, the resources devoted to their training convey little or no positive benefit to Nigeria after their departure.

- There is the issue of Industrial Disputes and Job Discontinuities. Nigeria has experienced increasing strike activity since independence caused by workers’ agitation for salary increases and improved conditions of service. Existence of industrial disputes and job discontinuities create a non-integrated educational system in Nigeria. For instance, because of strikes, many universities in Nigeria have to jettison two school years (1994/95 and 2001/2002 sessions) within one decade. Only last year (2014 June), university lecturers were on strike for six months. These industrial actions usually warrant work stoppages and loss of man-days, which inversely affect the real growth in GDP especially when a large number of workers or many sectors of the economy are involved in the dispute.

- There is also government failure. First, public expenditure on education, expressed as a percentage of GDP, is generally low and the situation of teachers is deteriorating. In general, teacher’s salaries and public spending on education have failed to progress in line with average spending in other sectors of the economy. Technical equipment is often outdated and schools often fail to receive appropriate funding and on time.

Conclusion

It is not a good achievement for any sector of the economy to exist for many years only to make a negligible (or at worst negative) contribution to economic
growth, which is not commensurate with its life span and investment. The education sector in Nigeria is one sector with this characteristic. The above study has shown that education sector has not been productive as it has been expected. This is evidenced by the poor quality of graduates, increasing cases of cultism in schools and high rate of school drop-outs.

**RECOMMENDATIONS**

- To regenerate education, make it responsive and to channel the benefits of education to the betterment of Nigerians today and future generations unborn, all hands must be on deck to redress the existing social, economic decay prevalent in our society today.
- There is need to put policies that would check, preserve and protect the plight of educational capital to other countries.
- Government should ensure that capital expenditure and recurrent expenditure are properly managed in a manner that it will raise the nation's production capacity.
- Education as a public good should be provided through the federation account.
- Parents, teachers, government and other stakeholders should address the issue of loss of morality and values in our society, corruption, good governance, accountability and transparency in Nigeria. The dignity of man has to be restored through education.

**REFERENCES**
