

An Empirical Analysis of Budgetary Allocation to Education and Poverty in Nigeria:

(A Comparative Study)

BY

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ABSTRACT

The study investigated the Comparative Analysis of Budgetary Allocation to Education and Poverty in Nigerian from 1980-2015. The objective of the study was to comparatively analyze the relative impact of federal government actual budgetary allocation to education alongside UNESCO 26% recommended budgetary allocation to education. In respect to the above, relevant theoretical and empirical literature were reviewed. The researcher formulated the relevant objective research question hypothesis to guide the study. In the course of the study, relevant data relating to the variables needed by the researcher were extracted from various document analysis such as Central Bank of Nigeria (CBN) Statistical Bulletin and National Bureau of Statistics (NBS) Statistical Bulletin. The Classical Linear Regression Model was employed in modelling the relationship between poverty and the budgetary allocation variables. The Ordinary Least Square (OLS) equation technique was used in analyzing the data. The unit root analysis revealed that all the variables were not stationary at levels. But at first difference, all the variables became stationary. The Johansen cointegration analysis revealed that the variables were cointegrated and had a valid error correction mechanism. The analysis of the Error Correction Mechanism (ECM) showed that the impact on poverty was wrongly signed and insignificant. On comparative analysis, the researcher observed that the UNESCO's 26% recommended budgetary allocation to education criteria will have more impact on poverty in the long run. It was therefore, recommended that Budgetary allocation to the educational sector in Nigeria should be implemented based on the UNESCO 26% recommended principle. Greater percentage of the budgetary allocation to education should be spent on capital project in the education sector. This is because such expenditure will impact positively on the educational sector and in turn have a multiplier effect on the general performance of the economy at the long run.

KEYWORDS: *Comparative Analysis, Budgetary Allocation, Education, UNESCO 26%, Poverty Rate*

Introduction

Education is undoubtedly the back-bone of any country that has achieved sustainable economic growth and development. It plays a vital role in the formation of human capital. Education instills in an individual the ability of broaden his/her horizons, making informed choices and also the opportunity of having a voice in public decision making. This is because education is viewed as a form of human capital and investment in human capital is an investment made for the growth and development of an individual and also that the future. Todaro (2007) asserts that education serves as the major key for the promotion of fairness, social justice, equity and also helps to reduce poverty.

In the light of this, expenditures made on education are considered as investment expenditures. This supports the individual human capital and as such, leads to the enhancement of earnings for the average individual worker, greater output for the society, etc. It tends to increase the individuals chance of employment in the labour market, and enables such an individual to reap pecuniary returns and also gives him/her opportunities for job mobility.

Statement of the Problem

Over the years, the Nigerian educational sector has experienced a lot of uncertainties which has negatively affected the growth of the society. For example, due to the problems plaguing the educational system, the output from the sector has not been able to solve the issue of economic disequilibrium in the society. Despite the annual increase in the level of graduates from the educational sector most especially, the tertiary educational system, the nation is still faced with an alarming rate of unemployment. Most of these graduates are more of job seekers rather than job creators. This has inversely affected the standard of living of the people. The situation with regards to public investment in education does not correlate with what theory says about the relationship between investment in education and poverty. This forms the basis for this study.

Aim and Objectives of the Study

The study is a comparative analysis of budgetary allocation to education and poverty in Nigerian economy. The objectives of the study is to:

Find out the effect of government actual budgetary allocation and UNESCO 26% recommended budgetary allocation to education on the poverty level in the Nigeria economy (1980-2015).

Research Questions

What is the effect of government actual budgetary allocation and UNESCO 26% recommended budgetary allocation to education on the poverty level in the Nigerian economy (1980-2015)?

Research Hypotheses

There is no significant relationship between government actual budgetary allocation and UNESCO 26% recommended budgetary allocation to education and the level of poverty in the Nigerian economy (1980-2015).

REVIEW OF RELATED LITERATURE

Theoretical Framework

Theory of Expenditure Limitation

The theory was propounded in 2003 by Aaron Wildavsky. The theory is not concerned about why the government should make a choice on limiting its spending on certain sector of the economy or activities. Rather, the theories thoughts is linked to the theory of opportunity cost (alternative forgone), which states that the value of an act is measured in terms of opportunities forgone.

The theory of expenditure limitation simply means that government expenditure should be based on the principle of scale of preference. The theory supports the simple principle of rationality that emphasizes that more money should be spent on productive sectors of the economy and less money on unproductive sectors. This is because such a decision will impact positively on the economy at the long-run. Therefore, this will make government regulations that impose financial burdens not be considered viable and desirable, rather would create a balance against the loss to the economy on which the size of the social service depends.

Conceptual Framework

Education and Poverty

In the world today, most people perceive terrorism as the greatest problem confronting world peace. But in reality, the disuse of poverty is a greater threat to peace and stability of the world other than terrorism (Omoniyi, 2013). Poverty was defined in three different perspectives. They include relative poverty, moderate poverty and extreme poverty (Sachs, 2009)

Relative poverty is defined as the household level of income which is below the given proportion of the average nation income. According to Sachs (2009), people who live in high income countries of the world lack access to recreation, education, quality health care, entertainment etc. which is required for the upward social mobility. Extreme poverty simply means the household cannot meet-up with the basic needs for survival. In facts, this simply means that the average household economic unit lives below the poverty-line as prescribed by the United Nations. While moderate poverty is simply a life condition in which basic needs of life are barely met.

Poverty is basically one of the major challenges confronting the World today. Over one billion inhabitants of the world live below US\$1.25 per-day while 1.75 billion people from multidimensional poverty, with deprivations in economic opportunities health, living standard and education (cook, 2013). A large number of poor people living in the world is found in the developing nations, with countries in Africa accounting for the highest poverty rate (Dauda, 2016). One of the determinants of human poverty is Education. The deprivation of which is called poverty of education. The poverty of income gives birth to poverty of education. The poverty of income which does not allow individual(s) to adequately invest in education thus, low level of investment in education breeds poverty. It is of widely acceptance that investment on education is an important tool to break the existing relationship of poverty of education (ADB, 2003).

Education and poverty reduction in developing nations have a link and synergy. Education as a reformable tool, apart from providing quality life for citizens of a nation also impacts positively on the growth and development of a country. It helps to instill knowledge in the people on how to be productive, creative and innovative. This in turn helps to increase the purchasing power of the citizenry, thereby bridging the gap between the rich and poor.

The Nigeria economy is faced with a high poverty rate. This is due to the low life expectancy rate, high infant mortality rate, high mortality rate, low standard of living and one inability to have access to the basic needs of life. Osowole&Bamiduro (2013) assert that in Nigeria, the high rate of severe and widespread poverty is a reality because the situation on ground depicts lack of health care and other basic amenities. This, they claim, is the need to use public expenditure most especially, as a viable instrument or tool to solve the problem of poverty in the economy. This is because education equips one with basic knowledge and required skills to be innovative and creative in the society. Despite the fact that the government at various levels have been spending through different poverty alleviation programmes, the poverty situation instead of reducing, keeps worsening.

Review of Related Empirical Studies

Faux and Ntembe (2013) carried out a study on the impact of educational attainment on poverty in Cameroon. They employed the logistic regression Model to investigate the probability of an individual being poor using work experience, educational levels and gender as independent variables. The result revealed that as an individual level of education increases, the probability of such an individual being poor decreases.

Afzal, Malik, Begam, Sarwar and Fatima (2012) researched on the relationship between education, poverty and economic growth in Pakistan from 1971 – 2010. They discovered that Education affects the Gross Domestic Production (GDP) and significantly only in the long run and concluded that better education can be an effective tool for poverty reduction and enhancing economic growth. Knight, Shi, and Quheng (2007) analyzed the relationship between education and income in rural China based on the data from a national household survey for 2002. They discovered that community enrolment is positively related to community income and suggested that providing education and increase in income reduce the risk of being poor.

Awan, Mark, Sarwar& Wages (2011) in a study tagged the effect of different levels of education, experiences and gender of the employed individuals as the determinants of poverty. The data for the study originated from the Household Integrated Economic Survey (HIES) between 1998 to 1999 and 2001 to 2002. The study made use of a logistic regression model as the technique for data analysis. The study revealed that as the individual's level of education increase the probability of such an individual not being poor will also increase. The study went further to discover that educational achievement and experience are inversely with the poverty incidence in both years.

Ehigiamusoe (2013), examined the causality between poverty and education in Nigeria from 1970-2009. The researcher utilized the Autoregressive distribute lag technique. The finding from the study revealed that there is a causal relationship poverty and education both in the short-run period and long-run period.

Verner (2004) studied the impact of education on poverty reduction in Latin America and the Caribbean region using the probit analysis. The study revealed that the single most important poverty reducing factor is education attainment. While all education levels from the primary to the tertiary educational level are significantly and negatively associated with the probability of being poor.

Ohadeji and Abiola (2002), carried out a study on “poverty alleviation with economic growth” strategy as long term solution. At the end of their study, they found out that poverty alleviation in present day Nigeria requires educational order to stimulate the human capital development of the poor in the society. Also, emphasis for educational reforms should be in the areas of vocational education and training educational reforms etc.

Research Design

The research design for this study is the correlational research design. Correlational research designs were chosen for this study because government budgetary allocation to education and UNESCO 26% recommended budgetary allocation to education would be treated to observe its effect on Nigerian economic development indicators such as Gross Domestic Product Per-capita (GDPc), Poverty, Unemployment and Life -expectancy.

Instrument for data collection

The instrument that was used for the study were various document analysis such as Central Bank of Nigeria (CBN) Statistical Bulletin (2016 Edition)

Method of Data Collection (Nature and Sources of Data)

The data required for this study are secondary in nature and consist of annual time series of the following variables:

- i. Poverty index
- ii. Government Recurrent Expenditure on Education
- iii. Government Capital Expenditure on Education
- iv. UNESCO 26% Recommended Budgetary Allocation to Education.

All data were collected from 1980-2015. Supplementary materials were taken from newspapers; research journals, text books, and unpublished works of other scholars and researchers.

Model Specification

$$POVT = f(GREE, GCEE, UNESCO\ 26\%) \quad (1)$$

The implicit model above were transformed into log linear explicit model as follows

$$\log POVT = \log \beta_0 + \beta_1 GREE_1 + \beta_2 \log GCEE + \beta_3 \log UNESCO\ 26\% + \mu_2 \quad (6)$$

Where:

GREE is government recurrent expenditure on education

GCEE is government capital expenditure on education

POVT is annual poverty index

UNESCO 26% recommended budgetary allocation.

$\alpha_0, \beta_0, \theta_0$ and λ are intercept terms.

α_1 to α_3 and β_1 to β_3 are model parameters while the μ is the error term.

Method of Data Analysis

This section described the method employed in estimating the model specified and analyzing the research data. The model specified in equation 3.3 above was analyzed with the use of computer aided statistical Software-E-view. Specifically, we used the Classical Linear Regression approach, using the Ordinary Least Square (OLS) method. The OLS method was chosen because of the statistical properties of its estimates. The parameter estimates will be examined for significance at 0.05 level and the model explanatory power and significance will be evaluated using the R^2 and f-statistic respectively.

Data Analysis and Empirical Results

Table 4.1 Unit Root Test Result

Variable	Level	1 st difference	5% critical	Remark
POVT	-2.9390	-6.4823*	-3.5529	1(1)
GREE	-3.4268	-4.5568*	-3.5629	1(1)
GCEE	-2.3219	-5.5158*	3.5485	1(1)
UNESCO	-1.5426	-6.2627	3.5578	1(1)

Source: E-view output printout

*Stationary at 1st difference

** Stationary at 2nd difference

The unit root test results presented in table 4.1 above showed that all the variables were stationary after 1st differencing.

Co-integration Analysis

Co-integration Analysis : POVT Model

Table 4.2 : Unrestricted Cointegration Rank Test (Trace)

Hypothesized	Trace	0.05		
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.819936	109.4382	47.85613	0.0000
At most 1 *	0.681903	51.14719	29.79707	0.0001
At most 2	0.274803	12.20361	15.49471	0.1474
At most 3	0.036919	1.278987	3.841466	0.2581

Trace test indicates 2 cointegrating eqn (s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

For model 1, the poverty model, the cointegration result presented in table 4.2 above showed that there are at least two (2) cointegrating equations. Thus, there is a long run relationship among the variables the model.

Error Correction Model

Table 4.3: Parsimonious ECM for POVT Model

Dependent Variable: D(POVT)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(POVT(-3))	0.658716	0.213534	3.084823	0.0061
D(GREE)	0.000340	7.57E-05	4.485952	0.0003
D(GREE(-1))	0.000138	3.41E-05	4.050432	0.0007
D(GREE(-2))	-7.00E-05	5.33E-05	-1.311869	0.2052
D(GREE(-3))	7.69E-05	4.49E-05	1.715429	0.1025
D(GCEE)	0.000121	8.82E-05	1.371058	0.1863
D(GCEE(-1))	0.000237	7.90E-05	3.005988	0.0073
D(GCEE(-2))	0.000469	0.000104	4.527180	0.0002
D(UNESCO)	-3.26E-05	1.80E-05	-1.814747	0.0854
D(UNESCO(-1))	-9.69E-05	2.65E-05	-3.662564	0.0017
D(UNESCO(-3))	-5.78E-05	4.74E-05	-1.218268	0.2380
ECM(-1)	-0.169676	0.088021	-1.927676	0.0690
C	0.179254	1.223926	0.146458	0.8851
R-squared	0.842334			
F-statistic	8.458981			
Prob(F-statistic)	0.000027			

Table 4.4: Diagnostic Analysis of POVT Model

Test/Hypothesis	Test type	Test statistics	Prob	Decision
No serial correlation	Breusch-Godfrey	3.3782	0.3369	Accepted
No Heterosedasticity	Breusch-Pagan	4.2978	0.9994	Accepted
Residual Normally	Jacque- Bera	1.0821	0.8426	Accepted

Source: E-view computer printout

Stability Test Result of Poverty Model 2

Figure 4. 2: Cusum Stability Test for POVT Model

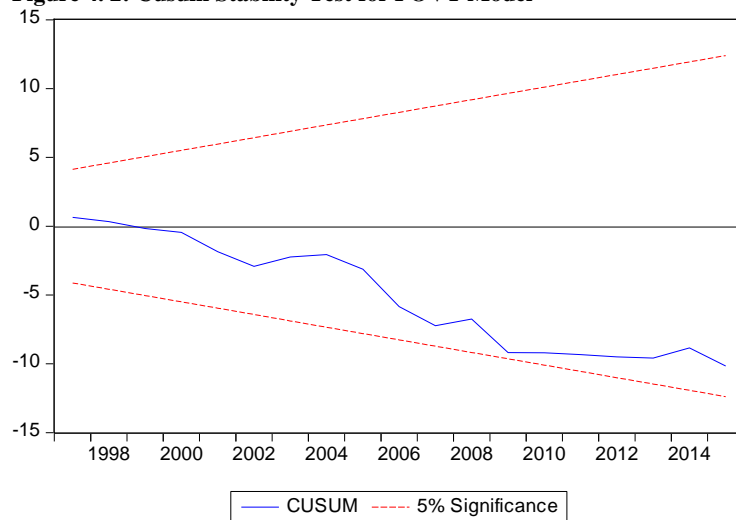


Table 4.5: Test of Hypothesis

S/No	Hypothesis	Empirical t-statistics GCEE	Empirical statistics UNESCO	5% critical value	Prob	Decision
1.	There is no significant relationship between government actual budgetary allocation and UNESCO 26% recommended budgetary allocation to education and poverty level in Nigeria.	1.3711	0.0017*	2.0420		Accept

Based on these criteria, it is evident that government budgetary has no significant impact on poverty level in Nigeria during the period under review Olajide and Abiola (2000) also observed no significant impact of government investment in education on poverty in Nigeria. In a nutshell, the analysis of our empirical data has revealed that if Nigeria had used the UNESCO's recommended budgetary allocation to education we would have been impacting more on the evils of underdevelopment than Nigeria is currently doing. However, the impact on poverty is not significant in the short run. But will have a significant impact in the long run.

Table 4.6: Comparative impact of GREE, GCEE and UNESCO criteria on Poverty

Development indicator Variable	Povt
GREE	-7.000
GCEE	0.0005
UNESCO	-9.699

The table above shows the impact of GREE, GCEE and UNESCO on POVT. The result shows that the UNESCO criteria would have reduced poverty, and improved the lots of citizens in the country than the current budgetary allocation is doing.

Discussion of Findings (Empirical Result)

The impact of government actual budgetary allocation and UNESCO 26% recommended budgetary allocation to education on the Poverty level in the Nigerian economy (1980-2015).

The dependent variable here is the level of poverty or the poverty index. The model (**equation 2**) examined the impact of federal government expenditure on education in terms of recurrent and capital expenditure and the UNESCO 26% budgetary recommendation on the poverty index. The results of the empirical data analysis revealed a negative impact of government recurrent expenditure on education on poverty index after two years lag. Increase in GREE reduced the poverty index by 7% after two period lag during the period under review. In the case of government capital expenditure on education, the impact was positive. This means that increase in government capital expenditure, increased the poverty index.

Specifically, increase in GCEE increased the poverty index by 0.0012% in the same fiscal year, 0.00024 in one-year lag, and 0.00047 after 2year lag. This is contrary to the apriori expectation and also contrary to the findings of Verner (2004) in his findings in Latin America and the Carribean Region. The explanation could be due to the fact that, though the government capital expenditure on education during the period was increasing, important elements of the poverty index was also increasing, and even increasing faster than the increase in government capital expenditure on education. Examples of such elements include inflation, unemployment, income per capita (GDP divided by population).

Since the population was increasing faster than economic growth, the per capita income fell. Also, unemployment increased during this period, because the expansion in educational facilities increased the number of people who were able and willing to work at the prevailing wage rate, but could not find any jobs. Taking together, the increase in population, unemployment, and inflation led to increase in poverty index as the expenditure on education increased. Hence, the positive relationship.

The impact of the UNESCO variable on poverty index was negative. Increase in the UNESCO variable by 1% would have reduced poverty by 9.70% after one-year lag. The model R^2 value of 0.8423 explains that the independent variables (GREE, GCEE, and UNESCO) accounted for about 84% variation in the level of poverty during the period under review; while other variables outside the model accounted for the remaining 16% variation. The model overall significance evaluated by the value of the F statistics was 8.4589 with probability values of 0.0000 is highly significant at -0.05 level. Therefore, the model has significant for the relationship explained in the analysis.

The model diagnostic analysis shows that the data employed for the analysis fulfilled the basic assumptions of the analytical techniques. Specially, the results presented in **table 4.3** shows that the residuals are normally distributed; there was no evidence of serial correlation; and, there was, also, no incidence of heteroscedasticity. Thus, the parameter estimates are unbiased and therefore dependable for forecasting and policy formulation. The stability of the model analysis is presented as the cumulative sum of residuals (CUMSUM) plot **fig 4.1** The plot remained within the 5% critical value. Therefore, the stability of the model during the period of analysis is guaranteed.

Furthermore, the results of the data analysis revealed that all the variables, apart from life expectancy were not stationary at levels. However, POVT, GREE, GCEE and UNESCO became stationary after 1st differencing. The results of the Johansen (1998) cointegration test revealed that there were at least two cointegrating equation among variables. Thus, there was a stable long run relationship among the variables of the models in each equation.

The estimate of the parsimonious error correction model (ECM) of the four equations revealed that the model was statistically significant. The model diagnostic analysis showed that all the model fulfilled the assumptions of the ordinary least square (OLS) regression techniques, and that there was no incidence of serial correlation, Heteroscedasticity, and the residual were normally distributed. Following the Gauss Markov theorem, the estimates are Best Liner Unbiased Efficient (BLUE) estimators and therefore dependable for forecasting and as policy variables.

The result of the poverty model showed that the impact of recurrent expenditure was appropriately signed. That of UNESCO's 26% recommend budgetary allocation was also appropriately signed. However, the impact of GCEE was wrongly signed. Change in GCEE and UNESCO recommended criteria by 1% reduced poverty 7% and 97% respectively after two and one period lags respectively. The model R^2 value was 0.8423 and f-statistics was 8.4589, the relationship between poverty and the independent variables were found to be stable during the period of the analysis.

Conclusions

The study compared the relative impact of federal government budgetary allocation to education and UNESCO recommended 26% budgetary allocation to the education sector. In order to achieve the research objectives, the researcher employed econometrics method to analyze the data. The results of the data analysis showed that government expenditure on education and the UNESCO recommended criteria have negative impact on poverty lack.

Based on the foregone, the study therefore concludes that increase in budgetary allocation to education can reduce the incidence of poverty in Nigeria economy. Increase in budgetary allocation to education, especially, the use of the UNESCO recommended budgetary allocation to education will accelerate the pace of economic development in Nigeria economy. The impact coefficient of the UNESCO 26% recommended budgetary allocation was always higher than the impact coefficient of the government recurrent and capital expenditure on education. if Nigerian government will take the issue of education seriously and acknowledge the fact that development and economic growth issues have gone beyond mere acquisition of capital to the issues of human development and technology, and put appropriate infrastructure in place, especially, education infrastructure, Nigerian economy will experience quantum leap in poverty reduction.

There is no doubt that the slow growth of Nigerian economy and the high level of unemployment are consequences of inadequate investment in human capital development institutions. The current situation of Nigerian economy is the case of poverty trap: a case where high unemployment lead to low income, low income to poverty and low life expectancy. The only sustainable escape route from the poverty trap is human capital development through investment in education.

Recommendations

- i. Budgetary allocation to the educational sector in Nigeria should be implemented based on the UNESCO 26% recommended principle.
- ii. Greater percentage of the budgetary allocation to education should be spent on capital project in the education sector. This is because such an expenditure will impact positively on the educational sector and in turn have a multiplier effect on the general performance of the economy both on the long run and short run

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