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Original Paper

Government Expenditure and Poverty Reduction in Nigeria

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Abstract

This research investigates the relevance of government expenditure on poverty reduction in Nigeria. The main objective is thus to investigate whether the poverty reduction efforts through government spending has actually translated into a reduction in the poverty level. The study covered the period between 1980 and 2016. The ECM model and cointegration models of the OLS as well as the granger causality techniques were used to analyze the data. The result of the ADF unit root test indicates that all the variables are I(1). The result of the Johansen cointegration indicates the existence of a long run equilibrium relationship among the variables. The result of the parsimonious ECM indicates that though the one period lag government expenditure on health has a significant and positive impact on the per capita income, it has a low elasticity. The result indicates further that government expenditure on education has a significant and positive impact on the per capita income. The result indicates further that government expenditure on building and construction has a significant and positive impact on the per capita income, the elasticity is however very low. The granger causality test result indicates no causality between government expenditure on health and education. A bicausal relationship however exists between government expenditure on education and per capita income. The result shows no causality between government expenditure on building and construction and the per capita income. The result recommends amongst others an increment and proper monitoring of government spending which could be enhanced through public private partnership.

Keywords

Government expenditure on education, government expenditure on health, per capita income, poverty, cointegration

1. Introduction

Poverty has a global outlook and it affects different people in different regions, continents and countries in different ways. Although no country or region is immune from poverty, the magnitude varies from country to country or from region to region (Binuyo, 2014). Global poverty has been on the decline except in some countries in Sub-Saharan Africa, Nigeria inclusive. The rate of poverty in Africa rose from 44.6 percent to 46.4 percent in the last two decade (Adigan, Awoyemi, & Omonona, 2011; Ravallion & Chen, 2004). Poverty has two dimensions. The first is moneylessness which indicates insufficient cash and inadequate resources to satisfy basic human needs secondly, it implies powerlessness. That is those without opportunities and choices (Encyclopedia Americana, 1989). Poverty has also been defined as deficient and degraded human conditions that hinders the optimal realization of basic human needs like health, food, education, shelter and clothing. The decline in the standard of living in the developing countries including Nigeria has led to an increment in the incidence of poverty. This decline has been linked to the decline in economic growth in developing countries. The ADB (2008) noted that African countries witnessed a fall in economic growth by an average of 10.5 percent in 1985and 3.2 percent in 2007. This led to a reduction in the level of poverty from US$1600 ins 1980 in US$1160 in 2008 (ADB, 2010; Mukah, Raji, & Micheal, 2011). Nigeria has recorded a reasonable growth in its GDP in most of the years since independence. The paradox is however that the growth in GDP over the years has not led to a reduction in the level of poverty in Nigeria. The level of poverty in Nigeria continue to increase even as successive governments in Nigeria, both military and civilian introduced and left behind one form of poverty alleviation programme or the other (Binuyo, 2014). This is despite the numerous programmes initiated by the Nigerian government to address the issue of poverty. Such programmes include: The Nigerian Agricultural and Cooperative Bank of 1972, Operation Feed The Nation of 1976, Directorate of Food, Roads and Rural Infrastructure (DFFR) of 1986, Structural Adjustment Programme (SAP) of 1986. National Economic Empowerment and Development Strategies (NEEDS) in 2004, N- Power programme of 2016, School Feeding Programme of 2016, etc. Despites these programmes, over 63 percent of Nigerians still leaves below the poverty line. The region with the highest incidence of poverty are the North West and North East with poverty rate of 77.7 percent and 76.3 percent in 2010. Sokoto state has the highest poverty rate of 86.4 percent in 2010. Niger state has the lowest poverty rate of 43.6 percent in 2010 (Osundina, Ebere, & Osundina, 2014). In dollar term, the number of Nigerians that lives below US$1 per day increased from 51.6 percent to 61.2 percent in 2010. Earth Trend (2003) noted that 70.2 percent of Nigerians live on less than US$1 a day and 90.8 percent live on less than US$2 per day. The high incidence of poverty in Nigerian is surprising giving the huge money spent by the government in reducing the menace of poverty. For example, government recurrent expenditure increased from N3819.2m in 1977 to N461,600.00m and N1,589,270.00m in 2000 and 2007 (Okulegu, 2013). The government capital expenditure also rose from a low of N5004.60m in 1977 to N10, 163.40m in 1980. As at 2000 and 2007, capital expenditure has reached N239,450.90 and N759,323.00m. This increment in expenditure

included those on education, health, housing, electricity generation and agriculture which are supposed to directly alleviate poverty but did not translate into decline in the level of poverty in Nigeria. The economic recession was thus not unexpected. This is visible at the paucity of basic infrastructure such as good school, good medical facilities, shelter, food, etc. Aluko (2003) noted that Nigeria has greater income inequality than other African countries. It was also noted that the highest 40 percent of Nigerians earn more than 10 percent of Gross National Income with the remaining 60 percent going to 90 percent of the population. This casts doubts on the poverty reduction efforts by the government.

The objective of the study is thus to investigate whether the poverty reduction efforts through government spending has actually translated into a reduction in the poverty level in Nigeria. The sub-objectives include:

- To examine the relationship between government expenditure on health and poverty level;
- to ascertain the impact of government spending on education on the poverty level and
- to establish the link between government expenditure on building and construction and poverty level.

Other than this introductory section, the rest of the paper is made of four sections. The second section is on the literature review while the third section is on the materials and methods. The fourth section is on the results and findings and the last section borders on the conclusion and recommendations.

2. Literature Review

The study adopts the endogenous growth model which states that investment in human capital, innovation and technology are important contributors to economic growth. It added that the long run growth rate of a country depends on policy initiatives such as education subsidy, increasing government spending on education and health, etc. The theory thus sees economic growth as been mostly influenced by endogenous or internal factors and not external factors

Empirically, Okorafor and Nwaeze (2013) studied poverty and economic growth in Nigeria between 1990 and 2011 period. The study used the Ordinary Least Squares (OLS) techniques. The result showed that Human Development Index and discomfort index are statistically significant in explaining changes in economic growth in Nigeria. Bimuyo (2013) examined the effect of poverty alleviation measures on economic growth in Nigeria. The study covered the period between 1980 and 2010. Using the OLS, the result revealed that poverty reduction has a significant impact on economic growth. Stephanie (2017) investigated the relationship between economic growth and poverty reduction in Nigeria. The study used the descriptive statistic and found that over 70 percent of Nigerians lack money and material possessions to access basic facilities like health, education, etc. that provides happiness. Adigun, Awoyemi and Omonona (2011) evaluated economic growth and inequality elasticity in rural Nigeria. The study covered the period between 1996 and 2004. The study used the descriptive statistic and the OLS. The growth elasticity of poverty indicates that a 1 percent increase in income will lead to 0.62 percent decline in poverty. The result also indicates that a reduction in inequality by 1 percent would

reduce poverty by only 0.34 percent. Gafar, Mukah, Raji and Miceal (2011) investigated economic growth and poverty reduction in Nigeria. The study used the OLS. The result showed that the initial level of economic growth is not prone to poverty reduction but a positive change in economic growth is prone to poverty reduction. Okulegu (2013) assessed government expenditure and poverty reduction in Nigeria's economic growth. The research employed multiple regression based on OLS technique. The result revealed that an increase in Agricultural Credit Guarantee Scheme Fund by 1 percent on the average reduced poverty level by 0.06 percent. Osundina, Ebere and Osundina (2014) investigated the impact of disaggregated expenditure on infrastructure on poverty reduction. The Vector Autoregressive Model was adopted. The result showed a long run relationship between government expenditure on infrastructure and poverty reduction in Nigeria. The result indicated further that government expenditure on building and construction has a positive and significant impact on poverty reduction. Government expenditure on health has an insignificant and negative impact on poverty reduction. Abimbola et al. (2015) assessed sustainable economic growth and poverty reduction through entrepreneurship. The descriptive statistics was used and the result revealed that entrepreneurship programme reduced poverty in the society. Aluko (2003) assessed strategies for poverty reduction in Nigeria. Using the descriptive statistics, the result revealed that poverty remained widespread in Nigeria despite the numerous poverty reduction strategies. John and Bright (2012) assessed poverty and youth unemployment in Nigeria. The study covered the 1987 to 2011 period. The study applied the OLS technique and found that population has positive influence on poverty level.

3. Materials and Methods

The model used for the study is stated below:

$$\Delta LPCI = b_o + b_1\Delta LGBC + b_2\Delta L\ GED + b_3\Delta LGEH + ECM_{t-1} + e_t$$

$$b1, b2, b3 > 0$$

Where:

GBC = Government expenditure on building and construction

GED = Government expenditure on education

GEH = Government expenditure on health

PCI = Per capita income which is a proxy for welfare. An increase in welfare is an indication of a reduction in poverty

The cointegration and Error Correction components of the Ordinary Least Squares were used in analyzing the data. The Augmented Dickey Fuller (ADF) unit root test was used to assess whether or not the variables are stationary and their order of integration. The Johansen cointegration test was used to assess the long run equilibrium relationship among the variables. This is followed by the ECM which was used to analyze the relevant elasticities.

4. Results and Findings

The analysis of the result commenced with the unit root test. The result of the ADF unit root test is shown in the table below:

Table 1. Summary of ADF Unit Root Test

GED		
Level	0.21	I (1)
First Difference	-4.01*	
PCI		
Level	-1.50	I(1)
First Difference	-5.40*	
GED		
Level	-1.47	I(1)
First Difference	-5.20*	
GEH		
Level	-0.26	I(1)
First Difference	-7.11*	

NB: * indicates significant at the 1 percent level, 1% critical value = -3.64.

The result shows that per capita income, government expenditure on health, government expenditure on education and government expenditure on building and construction were all I (1).

The result of the Johansen cointegration test is shown in the table below:

Table 2. Summary of Johansen Cointegration Test

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.592633	57.76218	47.85613	0.0045
At most 1	0.435346	26.33074	29.79707	0.1191
At most 2	0.162282	6.326778	15.49471	0.6569
At most 3	0.003685	0.129200	3.841466	0.7193
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.592633	31.43144	27.58434	0.0152
At most 1	0.435346	20.00396	21.13162	0.0713
At most 2	0.162282	6.197578	14.26460	0.5880
At most 3	0.003685	0.129200	3.841466	0.7193

The result of the Johansen cointegration test indicates an invalidation of the null hypothesis of no cointegration and a validation of the alternative hypothesis of cointegration. An indication that a long run equilibrium relationship exists among the variables on which basis an Error Correction Mechanism (ECM) was estimated. The result of the parsimonious ECM is shown in the table below:

Table 3. Summary of Parsimonious ECM Result. Modeling: LPCI

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LGEH(-1)	0.013803	0.003015	4.578926	0.0001
LGED	0.234456	0.023245	10.08642	0.0000
LGBC(-1)	0.000506	0.000147	3.442992	0.0017
ECM(-1)	-0.866610	0.079563	-10.89215	0.0000
C	4.762480	0.257579	18.48942	0.0000

R^2 = 0.83, DW = 2.11, AIC = -0.76, SC = -1.23.

The result indicates that 83 percent of the total variation in per capita income has been explained by GEH, GED and GBC taken together. This is a good fit since the variation explained outside the model is just 17 percent. The result indicates that the one period lag value of government expenditure on health has significant and positive impact on the per capita income. An increase in per capita income is an indication that improvement in government spending on the health sector could reduce the level of poverty in Nigeria. The low elasticity however indicates that government expenditure on health did not have the desired impact as regards poverty reduction. The result indicates that government expenditure on education has a significant and positive impact on the per capita income. The significance of government expenditure on education is supposed to be symptomatic of a reduction in the level of poverty except for the low elasticity. The result shows that the government expenditure on building and construction in the immediate past period has a positive and significant impact on the level of per capita income. The low elasticity however indicative that government expenditure on building and construction has not gotten the desired impact as regards poverty reduction. The statistical significance of the ECM indicates a satisfactory speed of adjustment.

The result of the pairwise granger causality at lag 2 is shown in the table below:

Table 4. Result of Pairwise Granger Causality Test at Lag 2

Null Hypothesis:	Obs	F-Statistic	Prob.
LGEH does not Granger Cause LPCI	35	0.51532	0.6025
LPCI does not Granger Cause LGEH		2.88926	0.0712
LGED does not Granger Cause LPCI	35	4.29546	0.0229
LPCI does not Granger Cause LGED		4.19883	0.0247
LGBC does not Granger Cause LPCI	35	0.04757	0.9536
LPCI does not Granger Cause LGBC		0.44077	0.6476
LGED does not Granger Cause LGEH	35	0.90094	0.4169
LGEH does not Granger Cause LGED		0.79929	0.4590
LGBC does not Granger Cause LGEH	35	0.82714	0.4470
LGEH does not Granger Cause LGBC		0.46649	0.6317
LGBC does not Granger Cause LGED	35	0.08607	0.9178
LGED does not Granger Cause LGBC		0.76579	0.4738

The result indicates no causality between government expenditure on health and per capita income. The result indicates a bi-causal relationship between government expenditure on education and per capita income. An indication of a rejection of the null hypotheses of no causality in both cases. The result could not reject the null hypotheses of no causality from GBC to PCI and from PCI to GBC. Causality did not also exist between GED and GEH and between GBC and GED.

5. Conclusion and Recommendations

Drawing from the endogenous growth model, the study investigates the impact of government expenditure on the level of poverty in Nigeria. The cointegration and ECM component of the OLS were used. The result concludes that although government expenditure on health has a significant impact on per capita income, the low elasticity indicates that government spending on the health sector has been unable to significantly reduce the level of poverty in Nigeria. The result indicates that if well managed, government spending on the education sector has the potentials of reducing the level of poverty in Nigeria. The result concludes that government spending programme on building and construction did not have the expected impact on poverty reduction. The result concludes that government expenditure on health matters for poverty reduction in Nigeria. The result recommends that government should increase her spending on the health sector as this will reduce the level of poverty through an increase in per capita income which is a product of healthy labour force. The government should increase and properly monitor her spending on the education sector. This is important since the education sector has a direct impact on the reduction of poverty by reducing the proportion of per capita income spent on education. The government should partner with the private sector to complement her building and

construction spending. This will also reduce the level of poverty and could prevent future economic recessions.

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