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Public Expenditure on Social Capital: Implications for Economic Growth in Nigeria.

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Abstract
This Study examined the implications of Public expenditure on social capital for the economic growth of Nigeria (1970-2008). On the application of error correction mechanism and Johansen Co-integration test, the following results were obtained: social capital had insignificant positive impact on Economic growth in Nigeria within the period under review. The result of the Johansen Co-integration test under the assumption of linear determinative trend, its likelihood ratio test indicates (2) Co-integrating equation, at 1% levels of significance and three (3) co-integrating equations at 5% level of significance. This indicates that there is co-integration among the variables in the model and hence the result can be relied upon in making long-run policy decisions. The study showed that budgetary allocation to the Education Sector which ranged from 0.57 percent to 10.8 percent from 1970-2008 fell below UNESCO recommended 26% provision. The Study also shows that government expenditure on health (both capital and recurrent) has incremental impact on economic growth in Nigeria. This means that any policy shift which allows increase in budgetary allocation to the health sector increases economic growth performance in Nigeria. Consequently the study recommends among other things increased budgetary allocation to the social sector to bring about skilled and healthy human capital that will contribute significantly to the economy and place Nigeria on the right path towards vision 20:20:20.
Keywords: Capital expenditure, Recurrent expenditure, Economic Growth, Social capital, Co integration, Causality

1. Introduction

The recent revival of interest in growth theory has also revived interest among researchers in verifying and understanding the linkages between government expenditure and economic growth. Over the past decade and a half, a substantial volume of empirical research has been directed towards identifying the elements of public expenditure (at its aggregate and disaggregate levels) that bear significant association with economic growth. These empirical literatures vary in terms of data sets, econometric techniques, and often produce conflicting results (Bose, Hague and Osborn 2003). Studies at the aggregate level include Fajingbesi and Odusola (1999), Ogiogio (1995), Studies at disaggregate level include Oyilola (1993), Akpan (2005), Babatunde and Adefadi (2005), Anyanwu and Erhijakpor (2007) and Nurudeen and Usman (2010).

Economic growth is fundamental for sustainable development. It is not possible, for a developing country, to enhance the quality of life of its growing population without economic growth. This latter is mainly achieved by the expansion and repair of infrastructures, the improvement of education and health services, and the encouragement of foreign and local investments among others (Saad and Kalakech, 2009). Hence, sustained and equitable economic growth is clearly a predominant objective of public expenditure policy. Many public programs are specifically aimed at promoting sustained and equitable economic growth. Public expenditures can and have played an important role in physical and human capital formation over time. Appropriate public expenditures can also be effective in boosting economic growth, even in the short run, when limits to infrastructure or skilled manpower become an effective constraint to an increase in production.

Indeed, the role of social capital especially education and health in fostering economic development is well recognized in the literature. Thus, the justification for higher government expenditure on social capital is often based on its impact on (a) individuals' lifetime incomes (i.e., the social rate of return) (see, for example, World Bank, 1995); (b) economic growth (Levine and Renelt, 1992; Barro and Sala-i-Martin, 1995); and (c) fostering economic development and poverty reduction in general (Romer, 1986; Lucas, 1988).

In the (Grossman, 2000) model, Health capital differs from other forms of human capital in its effects on these activities. Health capital determines the total amount of time to the individual, whereas knowledge capital (education) affects the productivity of time spent by the individual. Specifically, education is concerned with the cultivation of "the whole person" including intellectual, character and psychomotor development (Adebiyi, 2006). Education matters for personal development, health status, social inclusion and labour market prospects of individual learners. Education helps the individual at understanding, controlling, altering and redesigning his environment (CBN Statistical Bulletin 2002). Education also improves health, productivity and access to paid employment of an individual (Anyanwu 1999).

Again, health is seen as the most important assets a human being has. It permits the individual to fully utilize and develop his capacities. Healthier workers are physically and mentally more energetic and robust.

They are more productive and earn higher wages. They are also less likely to be absent from work because of illness (or illness in their family). Illness and disability reduce hourly wages substantially, and total income of the worker with the effect especially strong in developing countries, where a higher proportion of the work force is engaged in manual labor than in industrial countries (Bloom, Canning and Sevilla, 2001). At the macro level, social capital in education has been found to play a crucial role in the adoption of new agricultural technologies (Foster and Rosenzweig, 1996). In addition, education is seen as a means to improve health and reduce fertility (Schultz, 1999 and 2002; Strauss and Thomas, 1995), being an intrinsic good in itself (Sen, 1999). Behrman (1999) and Glewwe (2002) provide recent reviews of the microeconomic literature on the impact of education on income and other outcomes in developing countries. This support for education/Health among economists is matched by equal or greater enthusiasm among development policy makers (UNDP) 1990, World Bank (2001). One example demonstrating the focus policy makers have placed on education and health is that five out of the eight millennium development goals (MDG) adopted by united Nations Millennium Summit in September 2000 focus on education/Health. First, for all children of school age to complete primary school by 2015, and second, to achieve gender equality at all levels of education by 2015, others include, reduction of children mortality rate, improve maternal health and combat HIV/AIDS, malaria and other diseases.

In Nigeria, government expenditure has continued to rise due to the huge receipts from production and sales of crude oil, and the increased demand for public (utilities) goods like roads, communication, power, education and health. Available statistics show that total government expenditure (capital and recurrent) and its components have continued to rise in the last three decades. For instance, government total recurrent expenditure increased from ₦3, 819.20 million in 1977 to ₦4, 805.20 million in 1980 and further to ₦36, 219.60 million in 1990. Recurrent expenditure was ₦461, 600.00 million and ₦1, 589,270.00 million in 2000 and 2007, respectively (Nurudeen and Usman, 2010). They added that the composition of government recurrent expenditure shows that expenditure on defense, internal security, education, health, agriculture, construction, and transport and communication increased during the period under review. Furthermore, the various components of capital expenditure (that is, defense, agriculture, transport and communication, education and health) also show a rising trend between 1977 and 2007.

Specifically, government expenditure on education and health has been on the increase in absolute and relative terms. For instance, from 1970 to 1975 the sum of ₦1.104 billion was budgeted for the education sector in Nigeria. But from 1976 to 1980, education budget rose from ₦1.104 billion to ₦4.227 billion (about four hundred percent in five years) (CBN, Statistical Bulletin 2000). It rose slightly to ₦4562.9 from 1981 to 1986. From 1986- 1990 education budgetary provisions rose to N9.329 billion and recorded a phenomenal rise to ₦31.907 billion from between 1991-1995. It jumped to ₦102.285 billion between 1996- 2000. From 2001 to 2008, it rose to ₦805.899 billion, about eight hundred percent increase in seven years. Within the period under review, the budgetary allocation to the education sector stood at ₦1.9 trillion (CBN, Statistical Bulletin 2009).

In the health sector the budget stood at ₦190.4 million from 1970-1975 increased to ₦797.2 million between 1976 and 1980. It increased to ₦1.099 billion from 1981-1985. It increased again to ₦2.635 billion from 1986-1990 before jumping to ₦12.056 billion between 1991 and 1995. Health budget increased again to ₦62.247 billion from 1996 -2000. It rose significantly to ₦567.923 billion between 2001- 2008. Available statistics show that total budgetary allocation to health from 1970 to 2008 stood at ₦646.9 billion. In all, the overall budgetary provision to social capital sector within the period under review amounted to ₦2.5 trillion. This is far bigger than the total National Budget of Nigeria in 2008, which was slightly above ₦2.3 trillion (CBN, Statistical Bulletin 2009).

Despite the huge budgetary provisions to and investments in education and health over the years, the level of social capital development in Nigeria is very worrisome. Nigeria still records high level of illiteracy rate, high level of infant and maternal mortality rates and, of course, staggered economic growth. Rising government expenditure has not translated to meaningful growth and development, as Nigeria ranks among the poorest countries in the world. In addition, many Nigerians have continued to wallow in abject poverty, while more than 50 percent live on less than US$2 per day. Coupled with this, is dilapidated infrastructure in education and health that has led to the collapse of many industries, including high level of unemployment. Moreover, macroeconomic indicators like balance of payments, import obligations, inflation rate, exchange rate, and national savings reveal that Nigeria has not fared well in the last couple of years (CBN, Statistical Bulletin 2009).

In view of the above, this study will investigate the implications of public expenditure on social capital on the economic growth of Nigeria from 1970 t0 2008. This paper is organized into five sections, section one comprises the introductory background of the study, Section two covers the theoretical framework and literature review, Section three gives information about the research methodology. Section four deals with empirical results and discussion while Section five covers the summary of findings, policy implications and policy recommendations.

2.1 Theoretical Review

The economic prosperity and functioning of a nation depend on its physical and social capital stock (Olaniyan and Okemakinde, 2008). The role of human or social capital has received considerable attention in the theoretical and empirical investigations. The theoretical framework of this study is hinged on the Human Capital theory as postulated by Grossman (2000). The main contribution of this model is that it offers insights into modeling two key aspects of human capital; education and health, and their relationship to labour supply, earnings and productivity.

Human capital theory is premised on the notion that an increase in the person's stock of knowledge and health raises his or her productivity in both market and non-market activities. The theory emphasizes how education increases the productivity and efficiency of workers by increasing the level of cognitive stock of economically productive human capability with the product of innate abilities and investment in human beings. The provision of education is seen as a productive investment in human capital. According to Babalola (2003), the rationality behind investment in human capital is based on three arguments:

- that the new generation must be given the appropriate parts of knowledge which has already been accumulated by previous generations;
- that the new generation should be taught how existing knowledge should be used to develop new products, to introduce new processes and production methods and social services; and
- That people must be encouraged to develop entirely new ideas, products, processes and methods through creative approaches.

Education enables the individual with knowledge and the ability to apply that knowledge. It is commonly regarded as the most direct avenue to rescue a substantial number of people out of poverty since there is likely to be employment opportunities and higher wages for skilled workers. The model also sees health as an important asset a human being has. Health capital differs from other capitals in its effect on economic activities. It determines the total amount of healthy time available to a worker, whereas knowledge capital affects the productivity of the time spent. This suggests that capital provides the flow of healthy time that is uniform in quality, an 'all or nothing' state. If this assets erodes or it is not developed completely it can cause physical and emotional weakening, causing obstacles in the lives of people. Like all capital, health depreciates with time and hence investment is needed to restore or maintain it.

Finally the theory places emphasis on the interaction effect of education and health in promoting economic growth. Hence higher levels of education improve the gross efficiency of health investment and vice versa. For instance education spending is likely to be ineffective if students are in poor health. On the other hand if the people are healthy and lack the needed skills and knowledge in the market place then productivity will be low. Thus, the interaction between education and health needs to be captured for a better understanding of economic growth in developing countries (Adebiyi, 2006).

Human Capital Theory

What exactly is the role of human capital and other social variables in economic growth and development of an economy? In the traditional neoclassical growth models developed by Robert Solow and Trevor Swan in the 1950s, the output of an economy grows in response to larger inputs of capital and labour (all physical inputs). Non-economic variables such as human capital or human health variables have no function in these models. Furthermore, the economy under such a model conforms to the law of diminishing returns to scale. With these assumptions, the neoclassical growth models afford some implications to the economy; particularly that as the capital stock increases, growth of the economy slows down, and in order to keep the economy growing it must capitalize from incessant infusions of technological progress. It is well known that this type of mechanism in the neoclassical growth model is neither inherent nor does it strive to explain much; in economic lexicon, this simply means that the technological progress is "exogenous" to the system. Yet the reality is quite contrary to that, particularly for some developing economies, where the economies kept growing for well over three decades. This implies that it is not only technology which is the main driving force accountable for other factors which are outside the realm of neoclassical growth model.

Addressing the above issues, in the mid 1980s, a new paradigm was developed in the literature, mostly due to the Paul Romer (1986), which is now commonly known as "endogenous growth models". By broadening the concept of capital to include social capital, the new endogenous growth model argues that the law of diminishing-returns to scale phenomenon may not be true as is the case for those economies. In simple terms, what this means is that if the firm which invests in capital also employs educated and skilled workers who are also healthy, then not only will the labour be productive but it will also be able to use the capital and technology more efficiently. This will lead to a so called "Hicks neutral" shift in the production function and thus there can be increasing rather than decreasing returns to investments. In other words, technology and human capital are both "endogenous" to the system.

Indeed, the advent of "endogenous growth models" with human capital (providing externalities) have certainly enhanced the understanding of the mysteries of rapid and long sustainable high growth performances of some economies. However, in order to establish the point whether healthy social capital was one of the most important factors in explaining the economic development for the Asian countries in the region, it will be useful to analyze the actual data on these variables across the countries. Although there are many variables that can represent social capital and health conditions of the people of a nation, to keep the analysis simple while, at the same time, capturing the basic broad thrust of these two variables, this work will focus on some aspect of the Nigerian economy.

2.2 Empirical Review

Saad and Kalakech (2009) studied the growth effects of government expenditure in Lebanon over a period of 1962-2007 with particular focus on four sectoral expenditures defense, education, health and agriculture. Employing a co-integration methodology the study revealed that education expenditure had positive effect on growth in the long-run and negative effect in the short run. Also health expenditure was found to be positively correlated with and insignificantly related to growth in the short run. The study recommended increase in budgetary allocation to education sector in order to enhance growth.

Dauda (2010) 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. He employed 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 including, labour force, gross fixed capital formation and educational capital appear with the expected positive signs and are statistically significant (except labour force) in the Nigerian economy. The study suggested that a concerted effort should be made by policy makers to enhance educational investment in order to accelerate growth, which would engender economic development in Nigeria.

Babatunde and Adefadi (2005) investigated the long run relationship between education and economic growth in Nigeria between 1970 and 2003 through the application of Johansen Co integration technique and Vector Error Correction Methodology. The result revealed that a well educated labour force possessed a positive and significant impact on economic growth through factor accumulation and the evolution of total factor productivity.

Simoes and Duarte (2007) carried out empirical investigation in a panel data framework of the effects of education and its sub-categories on economic growth emphasizing its complementarities with the other major determinants of technological change and growth. The study focused on a sample of 23 OECD countries from 1960- 2000 and used an extended and augmented version of the Benhabib and Spiegel (1994) growth specification that considers the role of education in final goods production and in innovation and imitation activities and that interacts education with the other major determinants of technological change. Using GMM estimator the results showed the importance of education, and especially tertiary schooling, for growth through technology diffusion and domestic innovation activities. These results are robust to the introduction of the additional technological change determinants. The study recommends that in order to fully exploit the benefits from R&D expenses in terms of growth the average OECD country needs a sufficient level of overall education and to benefit from the technology incorporated in imports of machinery, countries need a sufficient level of secondary education.

Nurdeen and Usman (2010) investigated the effect of government expenditure on economic growth in Nigeria between 1979 and 2007. Using cointegration and error correction methodologies the study found among other things that government total capital expenditure, total recurrent expenditure and government expenditure on education have negative effect on economic growth. On the other hand the study found that rising government expenditure on transportation and communication and health had incremental effect to economic growth within the period under review. The study recommends among others, increased investment in the development of transportation and communication, and the health sector.

3 Data and Method of Analysis

3.1 Data

All variables are sourced from Central Bank of Nigeria Statistical Bulletin and Annual Report and Statement of Accounts (Various issues) 1970 to 2008.

3.2 Method of Analysis

We first of all performed a unit root test on the variable in this model. This is because most macroeconomic time-series have unit root and the regression of a non-stationary time series on another non-stationary time series is bound to produce a spurious regression. In order to produce a meaningful estimate, we conducted a unit root test. Thus, this study first tested the nature of the time series to determine whether they are stationary or not and

if stationary what is their order of integration. The order of integration assisted us in determining the long-run relationship among the variables. To do this, the Augmented Dickey Fuller test is employed.

After performing the unit root test, we tested for co-integration among the variables. Co-integration indicates the presence of a linear combination of non-stationary variables that are stationary. In a case where co-integration does not exist, it means the linear combination is not stationary and the variable does not have a mean to which it returns. The presence of co-integration however, implies that a stationary long run relationship among the series is present. The Mackinnon (1991) critical value or residual procedure is adopted in this study.

A non-stationary series which can be transformed to a stationary series by difference d time is said to be integrated of the order d. A series X_t integrated of order d is conventionally denoted as:

$$X_{t-1}(d) \quad - - - \qquad (i)$$

If X_t is stationary, then no difference is necessary; that is integration order of zero denoted as:

$$X_{t-1}(0) \quad - - - \qquad (ii)$$

These series with time variant mean and co-variance function is said to be integrated of order zero. While series that need to be differenced once to achieve stationarity, is said to be integrated of order one, that is

$$X_{t-1}(1) \quad - - - \qquad (iii)$$

The Augmented Dickey-fuller (ADF) and the Saragn-Bahrgv Dub-Watson (SBDW) test which is used is in this general format

$$X_t = a + \beta x_{t-1} + \beta T + \sum t \quad - - - \qquad (iv)$$

and $$X_t = a + \beta x_{t-1} + \sum Ci\ p\ X_{t-1} + \beta T \quad - - - \qquad (v)$$

Where the n's are large enough to ensure white noise residuals and T is trend.

The relevant test statistics for DF and ADF test is the ratio of β over its OLS standard error. The Null hypothesis is

$$H_0 : X_{t-1}(1)$$

The test statistic does not have a t-distribution under the null hypothesis because of the theoretical variance of X_t. However, Fuller (1976) reports tables and critical values for those t- ratios.

The next step would be to evaluate the order of integration of the residual generated from the static model. If the series of the model is co-integrated, that is the residuals is stationary, we are guided towards error correction specification regression are non-stationary. Otherwise, we can apply the Unit root to check their stationarity.

The unit root test of the DF and ADF are respectively as follows:

$$pU_t = \Phi U_{t-1} + dT\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \qquad (vi)$$

$$pU_t = \Phi U_{t-1} + \sum \delta i\ pU_t + dT\ \ldots\ldots\ldots\ldots\ldots\ldots\ldots \qquad (Vii)$$

In a case where co integration does not exist, it means the linear combination is not stationary and the variable does not have a mean to which it returns. The presence of co integration however implies that a stationary long-run relationship among the series is present. This study employed the error correction mechanism based on Engle-Granger (1987) two-step error correction model (ECM) approach. This procedure involves the estimation of static or long-run relationship using the Johansen multivariate co integration test. A statistically significant ECM indicates the speed of adjustment in the short-run GDP growth when disequilibrium occurs. The over-parametized Error Correction model is specified thus:

$$GDP = \Psi_0 + \Psi_1 GDP(-1) + \Psi_2 Keduexp + \Psi_3 Keduexp(-1) + \Psi_4 Reduexp + \Psi_5 Reduexp(-1) + \Psi_6 Khexp + \Psi_7 Khexp(-1) + \Psi_8 Rhexp + \Psi_9 Rhexp(-1) + \Psi_{10} DF + \Psi_{11} DF(-1) + \Psi_{12} PR + \Psi_{13} PR(-1) + \Psi_{14} ecm_{t-1} + \varepsilon_t \quad - - - \qquad (viii)$$

Where: $\Psi_0, \Psi_1, \Psi_2 \ \Psi_n$ are parameters and ecm_{t-1} is the error correction.

The coefficient Ψ_{14} represents the measure of the speed of adjustment through which the system moves towards its equilibrium on the average.

3.3 Model Specification

Saad and Kalakech (2009) stated a growth model which clearly defined two major components of the social capital (education and health) in the growth equation. The model is adopted and modified as follows:

$$GDP = f(DF, EDU, HEALTH, PR) \quad - - - \qquad (ix)$$

Where GDP is Gross Domestic Product, DF means Government Expenditure on Defense,

EDU denotes Government Expenditure on Education, HEALTH implies Government Expenditure on Health, PR is Primary Education enrolment. This is further disaggregated as:

$$GDP = f(Keduexp, Reduexp, Khexp, Rhexp, Df, Pr) \quad - - - \qquad (x)$$

where Keduexp is Government Capital Expenditure on Education, Reduexp means Government Recurrent Expenditure on Education, Khexp denotes Government Capital Expenditure on Health, Rhexp is Government Recurrent Expenditure on Health, while other variables remain as defined above.

Expressing in structural form equation 2 becomes:

$$GDP = \alpha_0 + KEDUEXP + \alpha_1 REDUEXP + \alpha_2 KHEXP + \alpha_3 RHEXP + \alpha_4 DF + \alpha_5 PR + U_t \quad - - - \qquad (xi)$$

where; $U_t =$ the white noise random element and $\alpha_{0+} + \alpha_n$ are parameters.

4 Empirical Results and Discussion

Table 1: Augmented Dickey–Fuller Results

	ADF statistics			Mackinnon critical at 1% significance level			
Variable	Level	1st diff.	2nd diff.	Level	1st diff.	2nd diff.	Remark
GDP	-1.9852	-4.7453	-	-2.9511	-2.9511	-	I(1)
Reduexp	-2.0721	-4.8086	-	-2.9434	-2.9482	-	I(1)
Keduexp	-2.6615	-	-	-2.6115	-	-	I(0)
Rhexp	-0.5215	-8.4074	-	-2.9458	-2.9458	-	I(1)
Khexp	-3.4976	-	-	-2.9719	-	-	I(0)
PR	-1.9357	-5.3506	-	-2.9484	-2.9484	-	I(1)
DF	-3.1592	-1.1488	-10.0159	-2.9484	-2.9540	-2.9540	I(2)

Source: own calculations using e-views

The results reveal that the variables are stationary at different levels. In specific terms, growth of gross domestic product (GDP), government recurrent education expenditure (Reduexp), government recurrent health expenditure (Rhexp) and primary education enrolment (PR) were found to be stationary at first difference. Government capital education expenditure (Keduexp) and capital health expenditure (Khexp) were found to be stationary at level. Finally government expenditure in defence was found to be stationary at second difference.

Co integration

Table 2: Test of Cointegration Result Using the Residual Approach

Null Hypothesis: RESID has a unit root				
Exogenous: Constant				
Lag Length: 3 (Automatic based on SIC, MAXLAG=9)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-4.248595	0.0021
Test critical values:	1% level		-3.639407	
	5% level		-2.951125	
	10% level		-2.614300	
*MacKinnon (1996) one-sided p-values.				

Source: own calculations using e-views

The result rejects the null hypothesis of no co integration, thereby making room for the acceptance of the alternate hypothesis of co integration in the model. From the result the mackinnon critical values and the probability value suggest that co integration is accepted at 1%, 5% and 10% levels of significance.

Ordinary Least Square

Table 3 Ordinary Least Square result of the Economic Growth Model (static equation result)

Dependent Variable: GDP				
Method: Least Squares				
Date: 04/13/11 Time: 09:30				
Sample: 1970 2008				
Included observations: 39				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	178.2134	63.86227	2.790590	0.0089
RHEXP**	8.660974	3.223038	2.687208	0.0115
KHEXP	2.38E-05	7.46E-05	0.319196	0.7517
REDUEXP	1.942931	1.921864	1.010962	0.3199
KEDUEXP**	-6.103576	2.532778	-2.409835	0.0221
DF	-5.06E-05	6.65E-05	-0.760989	0.4524
PR**	-26.18517	9.922919	-2.638857	0.0129
R-squared	0.429540	Mean dependent var		4.099211
Adjusted R-squared	0.319129	S.D. dependent var		6.416119
S.E. of regression	5.294256	Akaike info criterion		6.335944
Sum squared resid	868.9036	Schwarz criterion		6.637605
Log likelihood	-113.3829	F-statistic*		3.890354
Durbin-Watson stat	2.358439	Prob(F-statistic)		0.005204

Source: own calculations using e-views

Note: *** means significant at 1% level ** means significant at 5% level**

The results however shows that government recurrent health expenditure (Rhexp), government capital health expenditure (Khexp) and government recurrent education expenditure (Reduexp) are correctly signed (i.e. positive)

Table 4: Parsimonious Error Correction Model (ECM)

Dependent Variable: GDP				
Method: Least Squares				
Date: 04/23/11 Time: 14:35				
Sample(adjusted): 1971 2008				
Included observations: 38 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-25.41928	15.02165	-1.692177	0.1013
GDP(-1)	0.961242	0.307230	3.128739	0.0040
REDUEXP(-1) *	4.112314	3.239266	1.269520	0.2143
KEDUEXP	-2.102312	2.331880	-0.901552	0.3747
RHEXP(-1) ***	-8.294727	4.248229	-1.952514	0.0606
DF(-1) ***	8.48E-05	4.63E-05	1.830845	0.0774
PR(-1)	60.02455	36.10165	1.662654	0.1072
ECM(-1) *	-0.458281	0.339977	-3.406937	0.0019
R-squared	0.466141	Mean dependent var		3.534324
Adjusted R-squared	0.337278	S.D. dependent var		5.463296
S.E. of regression	4.447545	Akaike info criterion		6.011392
Sum squared resid	573.6389	Schwarz criterion		6.359698
Log likelihood	-103.2107	F-statistic*		3.617351
Durbin-Watson stat	2.152094	Prob(F-statistic)		0.006375

Source: own calculations using e-views

Note: *** means significant at 1% level ** means significant at 5% level ***means significant at 5% level**

In the result it can be found that lag of GDP (GDP(-1)), lag of recurrent education expenditure (Reduexp(-1)), lag of recurrent health expenditure (Rhexp(-1)), lag of primary enrolment (PR(-1)) and lag of government defence (DF(-1) expenditure are positively related to growth. Capital education expenditure (Keduexp) is negatively related to GDP as suggested by the negative coefficient (-2.102). In addition, the lag of GDP, lag of capital education expenditure, lag of defence expenditure and lag of primary enrolment are found to be statistically significant influencing growth in the short run. Also capital education expenditure is negative (-2.102) and insignificant. The overall significance of the ECM is robust with a probability of 0.0064 and F-statistic as 3.6 respectively. The model also explains 47% of changes in GDP in the short run and 34% going by the values of R-squared and Adjusted R-squared, respectively. The coefficient of the error correction model is negative (-0.46) and significant at 1% level. This means that short run deviations correct by 46 percent per annum. This agrees with appriori expectation that ecm(-1) coefficient should be negative and statistically significant.

5 Summary of Findings, Policy Implications and Recommendations

This study shows that government expenditure in health (both capital and recurrent) has incremental impact on economic growth in Nigeria. This means that any policy shift which allows increase in budgetary allocation to the health sector increases economic growth performance in Nigeria. Again the result shows that government recurrent expenditure in education enhances economic growth in Nigeria. The implication of this is that when government increases her expenditure in salaries, allowances, and re-training of workers in the education sector, it will enhance the productivity of workers in the sector, thereby having overall positive effect on economic growth. Another major finding of this study is that government capital expenditure retards economic growth both in the short run and long run.

A major policy implication of this result is that government at all levels should show strong political will in the development of social capital in Nigeria through improved yearly budgetary provisions and timely release of fund to the sector. Government should ensure transparency in the sector to be sure that funds released are actually utilized especially for capital projects.

Suggestion for Further Study

We suggest that future research on this subject should look at the interaction effect of strike in the social capital sector.

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