

EDUCATIONAL INVESTMENT AS A PANACEA FOR SUSTAINABLE ECONOMIC DEVELOPMENT: THE NIGERIAN EXPERIENCE

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Abstract

This paper investigates Educational investment as a panacea for sustainable economic development: The Nigerian experience. The method of analyses is the application of Ordinary least squares technique, Augmented Dickey-Fuller technique in testing the unit root property of the series, She co- integration test, error correction mechanism and variance decomposition. The results of the unit root suggest that in model one all the variables except current expenditures on education are stationary at levels and first difference. The OLS result revealed that government expenditures on education and current expenditures are not statistically significant and have negative relationship with GDP, The results also revealed that the speed of adjustment is satisfactory. A major policy implication of this result is that Government should encourage education and health sectors through increased funding, as well as ensuring that the resources are properly managed and used for the development of education and health services.

Key words: Government Expenditure, Economic Growth, Post primary school enrolment, Investment

Education is a basic object of development and of immense importance towards sustaining any economy. As an input and output to development, education is fundamental to the broader notion of expanding human capabilities that is the fulcrum of development. In the same manner, education plays a key role in the ability of a developing country to absorb modern technology and to develop the capacity for self-sustaining growth and development (Todaro and Smith, 2009).

In other words, education holds the master key that unlocks a country's potentials towards national transformation, and sustainable human national development. Development is an eclectic paradigm of social change aimed at improving the condition and quality of life of the people, especially that of the majority of the poor and vulnerable people in the society. For development to be meaningful it has to be sustainable, that is. it should continue for a very long time without causing damage to the environment and to the benefit of present and future generations. As Jhingan (2007) posits, sustainable development means that development should "keep going". It emphasizes the creation of sustainable improvement in the quality of life of all people through increases in real income per capital, improvements in education, health and general quality of life and improvements in quality of natural environmental resources.

At the 1992 United Nations Conference on Environment and Developments (UNCED), of the Earth Summit held in Rio de Janeiro, Brazil, the role of education in promoting sustainable development was made explicit by Agenda 21, the global action plan for the 21st Century (UNCED, 1992):

"Education... should be recognized as a process by which human being societies can reach their fullest potential. Education is critical for promoting sustainable development and improving the capacity of the people to address the environment and development issues.

Developed countries have made huge investments in accordance with quality education as stipulated by United Nations Educational Scientific and Cultural Organization's (UNESCO) that a minimum standard of 26 percent annual budget should be given to education. It is for this reason coupled with responsible leadership and good governance that the developed countries occupy high rankings in United Nations Development Programme (UNDP), Human Development Index (HDI) and UNESCO's Global Monitoring Report (GMR).

Sometimes economic growth and economic development are used interchangeably as if they mean the same thing. Describing economic growth is relatively easier to accomplish than trying to put development in precise definition. Economic growth is ordinarily defined as persistent rise in the real per capital income of a country over fairly long period of time and the measuring rod is income growth. Development is simply defined as growth plus change and for development to be sustainable via education there are certain questions that a country needs to answer:

- *What has been happening to poverty?*
- *What has been happening to unemployment?*
- *What has been happening to inequality?*

If all these three questions have been less severe, then beyond doubt this has been a period of development for the country concerned and we can say that such development via education is sustainable. If one or two of these central problems have been growing worse, especially if all three have, it would be strange to call the result development, even if per capital income is growing. For economic development to be sustainable, it must be centered on human resources which is the base of this research.

The objectives of this research include:

- 1.) Assessing the impact of primary, post primary and tertiary school enrolment on sustainable growth in Nigeria.
- 2.) Determining the effect of total educational expenditures, recurrent and capital expenditures on sustainable growth in Nigeria
- 3.) Assessing the effect of government health expenditures on sustainable economic growth.

Nigeria is richly blessed with abundant natural and human resources. Despite these abundant resources, the economy over the years has been growing at a very slow rate and this can be attributed to neglect and failures to invest in human capital of the nation. Capitals are used to demonstrate the differences people make in the performance of a manager and consequently the enterprise. Emphasizing on the importance of Human Resources to an organization, Thomas J. Watson, (1965) founder of IBM remarked, "you can get capital and erect buildings, but it takes people to build a business¹". The renewed emphasis on employees as human capital is to re-emphasize that success in organizations depends mainly on the ability to manage human capital.

Review of Related Literature

Sustainable Development

The concept of sustainable development is generally viewed as the holistic result of three components, namely: environmental, social and economic. Sustainability paradigm rejects the assessment according to which the negative impacts on the environment and the social problems are the inevitable and acceptable consequences of economic development. Theories and research strongly suggest that sustainable development is meeting the needs of the present generation without compromising the ability of the future generations to meet their own needs. By implication, sustainability is considered as a paradigm of a vision for the future in which economic, social and environmental considerations work in a balanced way to develop and improve the quality of life (Balan & Dragolea, 2013, Omotayo, 2008, Mckeown et al, 2002).

Concept of Human Capital

Various authorities have attempted to define human capital. Quite clearly, human capital is a multidimensional concept that cannot be fully appreciated through mere definition. A glossary of recent attempts at defining human capital would suggest the concept as embodied in:

- (a) human resources; including knowledge, skills, attitudes and motivation belonging to an enterprise or society and engaged in the development of that enterprise or society to fulfill its objectives and to enhance the quality of life of its members
- (b) human capability and productivity engendered through knowledge and skills acquired from education, training and experience; and facilitated by an enabling environment; and
- (c) that intangible factor of the production process that contributes human intellect, skills and competencies in the production and provision of goods and services.

Human capital connotes man in relationship to the world of work; that is work involving production of goods and provision of services of all kinds in the political, social, cultural and economic development of nations. In more specific sense, human capital consists of inherited and acquired abilities of labour with education being the primary source of acquiring these abilities. Human capital investment includes investment by society in education, investment by employment in training, and investment by individuals of time and money in their own development. These investments have both qualitative and quantitative dimensions. That is to say that investment in human capital includes not only expenditure for education and training but also the development of the right attitude towards productive ability. In Nigeria, the process of human capital investment is carried out in so many ways. The most obvious of them all is by formal education beginning with primary or first level education which is continued with various forms of secondary education and then higher education; including teachers training and technical colleges, higher agricultural institutions and the universities.

In Nigeria, investment in human capital is very crucial for the development and sustainability of her economy in order to achieve the millennium development goals and objectives. Nigeria administrators are increasingly emphasizing that the development of human capital via human capital investment should not be left to random market forces but should be coordinated, so as to cooperate with other factors of production. It is a point to note therefore that, Government's role in the development of Nigeria's human capital has evolved historically.

The less developed countries of the world specifically are short of human capital i.e investment in its educational funding is low as compared to the manpower resources of the developed countries

(USA, UK, France etc.). Nigeria is characterized by economic backwardness which manifests itself in low investment in human capital, low labour efficiency, factor immobility, limited specialization in occupation and in trade, a deficient supply of entrepreneurship as well as traditional and social institutions that minimize (the incentives for economic change, The slow growth in investment in human capital has severe restraints on progress; the economic growth of Nigeria remains low where there is little investment in human capital. Since independence, the country has increased her effort at increasing investment in human capital. The effort of the Nigerian government to achieve economic growth has been barricaded by inadequacy of human capital (quality education) and improved quality of workers.

The Challenges of Funding Education in Nigeria

The challenges of Nigeria educational sector in general and its funding in particular could be traced to policy and strategy instability and inconsistency, inefficient management, wastages and leakages there by overriding macroeconomic conditions that have determined the fate of the sector. Where the economy is not growing at a reasonable high and sustainable rate, it will not have the resources to fund a largely social service sector such as education in Nigeria. A high population growth rate alongside a lackluster growth rate of the GDP would imply severe resource constraints which could lead to the poor resourcing of a social sector such as education. The problem with this revenue structure is that oil revenue on which the Government depends heavily is highly exposed to the volatiles of the price of oil in the international market. Such derived fluctuations in the major revenue item of government means that without careful planning and rationalization of expenditure of the revenue, the implementation of government projects and programmes would be subject to frequent disruptions and distortions. (Debie 2012).

An examination of the records shows that the Nigerian Government has tended to embark on ambitious education programmes in spontaneous response to oil booms. In 1973-1979 Nigeria experienced the first oil boom as a result of the Arab oil embargo against the U.S.A. In 1990, there was a second oil boom because of the Gulf war and the United Nations trade embargo on Iraq and Kuwait. A third oil boom started from 2003 fuelled mainly by galloping economic growth and attendant high energy demand in several emerging economies. It was in response to the windfall revenues resulting from the 1973-1979 oil booms that the Nigerian Government in 1976 introduced the Universal Primary Education. This laudable programme caused a dramatic expansion in the demand for educational services at the primary level. But the financial resources became inadequate, particularly following the collapse of oil prices.

Oroka (2008) reports that the four best Nigerian Universities Obafemi Awolowo University, Ile-Ife, University of Ibadan, University of Benin, Benin City and University of Lagos, Lagos were ranked 5834th, 6809th, 7,318th and 7,601th respectively in the world Universities ranking order. It is further regrettable that no Nigerian University was rated among the World Top 500 Universities in the third World Countries; and none could be rated among the first 40 best Universities in Africa. Oroka (2008) report further revealed that Nigeria has only 15 scientists and engineers engaged in research and development per million persons as against 165 in Brazil, 459 in China, 158 in India and 4.102 in USA. This explains why our mineral deposits are under the control of other multi-national companies and powers.

Government Spending and Economic Growth

In a developed country, through economic stabilization, stimulation of investment activity and so on, public expenditure maintains a rate of growth which is a smooth one. In an underdeveloped country, public expenditure has an active role to play in reducing regional disparities, developing social overheads, creation of infrastructure of economic growth in the form of transport and communication facilities, education and training, growth of capital goods industries, basic and key industries, research and development and so on (Bhatia, 2002). Public expenditure on infrastructural facilities has a great role to play in the form of stimulating the economy. The mechanism in which government spending on public infrastructure is expected to affect the pace of economic growth depend largely upon the precise form and size of total public expenditure allocated to economic and social development projects in the economy.

Landau (1983) found that the share of government consumption to GDP reduced economic growth which became consistent with the pro-market view that the growth in government constrains overall economic growth.

Ram's (1986) study marked a rigorous attempt to incorporate a theoretical basis for tracing the impacts of government expenditure to growth through the use of production functions specified for both public and private sectors. The data spanned 115 countries to derive broad generalizations for the market economics investigated. He found government expenditure to have significant positive externality effects on growth particularly in the developing countries (LDC) sample, but that total government spending had a negative effect on growth. Deverajan et al (1991), using a sample of 14 OECD countries, found that spending on health, transport and communication have positive impacts whereas spending on education and defense did not have a positive impact.

Expenditure on infrastructure investment and productive activities (in State-Owned Enterprises) ought to contribute positively to growth, whereas government consumption spending is anticipated to be growth-retarding (Josaphat and Oliver, 2000). Nitoy et al. (2003) have found that there exists positive correlation between economic growth and public spending on infrastructural facilities.

Education is essential for achieving sustainability. Public awareness which is a mark of quality education and training is a key to moving society toward sustainability. Toolkit (2008) distinguished between sustainable development and education for sustainable development. Education about sustainable development is an awareness lesson, while education for sustainable development is a tool to achieve sustainability. The awareness concept is important but the tool to achieving sustainability is most appropriate. Education, worth its name is supposed to equip man with the necessary tools for sustainability. The report on education for all in the year 2000 showed that the United Arab Emirate have made great progress in basic education and are getting close to the set target, because they are convinced that education is the main thrust for sustainable human development. No doubt that UNESCO (2008) clearly states that "No development can be possible without humans and no humans can reach development without quality education".

Funding /Constraints

The gross under funding of the educational sector in the country in general and the neglect of the maintenance of the physical facilities have impacted on. Instructional and living conditions which have deteriorated in many of the schools, classrooms, libraries and laboratories. These have in turn led

to decline in academic standards. Attention must therefore be focused on these areas if the educational institutions are to get out of the woods. Achieving this feat is therefore hinged on funding.

Since 1986 when the federal military government introduced the structural adjustment programme (SAP), allocation of financial resource started to fall coupled with the consistent decline in the value of local currency till date. This has also consistently affected the procurement of imported technical and scientific equipment, books, journals and other instructional needs in the educational system. Education system in Nigeria today, needs a total overhauling and restructuring. This reform is required to improve the performance of higher education in the country. The nation entered the 21st century insufficiently prepared to cope or compete in the global economy, where growth will be based even more heavily on technical and scientific knowledge (World Bank 1994). It is also a well known fact that the inadequacies always observed among many undergraduates and graduates alike is as a result of the inadequacies associated with the primary and the secondary education system in Nigeria.

It would be imperative for the government of the day to design a suitable guideline for funding education. For instance. United Nations Educational Scientific and Cultural Organization (UNESCO) have recommended that 26% of the total budget of a nation should be allocated to education. However, Longe Commission of 1991 observed that the percentage of recurrent budgetary allocation to education in Nigeria has never exceeded 10%. though, the system is expensive to keep afloat, quality however in any form is partly a function of the total fund made available to the system and judiciously utilized for the purpose to which it is meant. Funds are required and necessary to maintain both the human and material resources of the system in order to achieve desired goals. It has also exigent that there is the need for an effective monitoring of the management of the funds presently being allocated to the sector while efforts should be intensified to improve on what is currently being allocated to the system

Education for Sustainable Development

As posited in the work of Leonard (2014), In December 2002, the United Nations Generally Assembly adopted resolution 57/254 to put in place a United Nations Decade of Education for Sustainable Development (DESD), spanning the years 2005 to 2014, with the United Nations Educational Scientific and Cultural Organization (UNESCO) as the lead agency for the Decade. The overall goal of the Decade of Education for Sustainable Development is the integration of the principles, values and practice of sustainable development into all aspects of education and learning. The four key objectives are;

1. Facilitating networking and collaborating among stakeholders in Education for Sustainable Development (ESD).
2. Fostering greater quality of teaching and learning in Education for Sustainable Development (ESD)
3. Supporting countries in achieving their Millennium Development Goals (MDGS) through Education for Sustainable Development (ESD) efforts.
4. Providing countries with new opportunities and tools to incorporate ESD in education reform efforts.

Econometric Procedure

The aim is that of establishing the dynamic properties of the relationship between educational investments as a panacea for sustainable economic development in Nigeria over the

1970-2014 periods. In particular, this study is interested in the following questions. Are government recurrent expenditures on education sufficient for sustainable development? Are government capital expenditures on education sufficient for sustainable development? Are government expenditures on Health sufficient for sustainable development? Are government total expenditures on education sufficient for sustainable development? Has primary, post primary and tertiary school enrolment sufficient for sustainable economic development? Is the long-term elasticity between government expenditures and potential gross domestic product greater than one, as predicted by the Wagner law? These questions are the basic contemporary issues affecting; education in Nigeria.

Rather than exploring the relation between economic activity and various definitions of subcategories of government expenditure as in other papers, this study focus on overall primary, post primary and tertiary school enrolment. Although the dynamics of different categories of government expenditure are undoubtedly explained by different determinants, attention is on a broad expenditure aggregate because of two main reasons. First, what matters for the determination of government deficit and debt, and ultimately for the overall sustainability of public finances is overall government expenditure. Second, existing work analysing separately different government expenditure categories via the estimation of dynamic equations does not find evidence of a strongly different relation with economic activity across types of expenditure (e.g., Kolluri et al. (2004).

To overcome the issue of spurious regression that characterized earlier studies on the relation between government expenditure and economic growth due to the neglect of the time series properties, we follow the standard three-Step approach consisting of (i) assessing the stationarity of the time series, (ii) in case the variables are not stationary, checking whether they are characterized by a cointegration relationship, (iii) in case cointegration holds, estimating error correction mechanism (ECM), which permits to analyse the long-run relationship between the variables jointly with the short-term adjustment towards the long-run equilibrium is adopted.

Therefore, error correction models avoid the spurious regression relationships. To guard against the possibility of estimating spurious relationships in the presence of some non stationary variables, estimation is performed using a general-to-specific Hendry-type error correction modelling (ECM) procedure. This procedure begins with an over-parameterised autoregressive distributed lag (ADL) specification of an appropriate lag. The consideration of the available degrees of freedom and type of data determine the decision on lag length. With annual data, one, two or three lags would be long enough, while with quarterly data a maximum lag of four can be taken. Under this ECM procedure, the long run relationship is embedded within the dynamic specification (Oriavwote and Eshenake 2012). For efficient sustainability the work builds two models, one looking at government expenditures on key areas like education and health and the others looking at primary, post primary and tertiary enrolments.

The framework for the study has its basis on the Keynesian and endogenous growth models. The Keynesian model states that expansion of government expenditure accelerates economic growth. Although, endogenous growth models do not assign any important role to government in the growth process, authors like Barro (1990), Barro and Rebelo (1993), and Easterly and Rebelo (1993) emphasized the importance of government (activity) policy in economic growth. Moreover, some authors focused on the components of government expenditure that are productive or unproductive (Kneller et al (1999), while others submitted that composition of government expenditure might exert more influence compared to the level of government expenditure (Nijkamp Root, 2004). From the foregoing discussion, the level of government expenditure and composition of government

expenditure are important determinants of growth. Thus, the model expresses economic growth (RGDP) as a function of various levels and components of government expenditure that include Recurrent expenditures on Education (REE), Current expenditures on Education (CEE), Total government health expenditures (HEX), Total education expenditures (EXP), Primary school enrolment (PRI), Post primary school enrolment (PPRI) Tertiary school enrolment (TER). The model to be estimated is thus stated as:

Model 1

$$RGDP = b_0 + b_1REE + b_2CEE + b_3HEX + b_4EXP + U_t \quad b_1 > 0, b_2 > 0, b_3 > 0, b_4 > 0$$

Model 2

$$RGDP = b_0 + b_1PRI + b_2PPRI + b_3TER + U_t \quad b_1 > 0, b_2 > 0, b_3 > 0$$

Where:

RGDP = Proxy for Sustainable economic development

REE = Recurrent expenditures on Education

CEE = Current expenditures on Education

HEX = Total government health expenditures

EXP = Total education expenditures

PRI = Primary school enrolment

PPRI = Post primary school enrolment

TER = Tertiary school enrolment

U_t = Random variable

Table 1: Summary of ADF Unit Root Test Result (Model 1)

Variab les	Levels data	1 st difference	1% CV	5% CV	10% CV	Order of integration
CEE	9.919824		-3.632900	-2.948404	-2.612874	1(0)
EXP	1.141739	-5.923910	-3.632900	-2.948404	-2.612874	1(1)
HEX	2.005735	-5.211037	-3.632900	-2.948404	-2.612874	1(1)
REE	0.396222	-11.35832	-3.632900	-2.948404	-2.612874	1(1)

Author's calculation using e-view

The Augmented Dickey Fuller (ADF) results in Table 1 show that all the variables except current expenditures on education are non-stationary in their levels. However, with their first differences, total educational expenditures, government expenditures on health and Recurrent expenditures on Education became stationary, that is 1(1). Current expenditures on education attained stationarity at levels i.e 1(0)

Table 2; Summary of ADF Unit Root Test Result (Model 2)

Variables	Levels data	1 st difference	1% CV	5% CV	10% CV	Order of integration
GDP	0,355892	-6.201211	-3.592462	-2.931404	-2.603944	1(1)
PRI	0.648338	-7.111322	-3.592462	-2.931404	-2.603944	1(1)
PPRI	-0.681132	-9.022758	-3.592462	-2.931404	-2.603944	1(1)
TER	-5.899104		-3.592462	-2.931404	-2.603944	1(1)

Author's calculation using e-view

Table 2 reveals that all the variables were stationary at first difference that is GDP, PRI and PPRI except TER which attained stationarity at levels that is 1(0), on the basis of this, the null hypothesis of non-stationarity is rejected and it is safe to conclude that the variables are stationary. This implies that the variables are integrated of order one, i.e. 1(1).

Cointegration Rank Test

To have confirmed the stationarity of the variables at 1(1) and 1(0), we proceed to examine the presence or no presence of cointegration among the variables is examined. When a cointegration relationship is present, it means that recurrent expenditures on education, capital expenditures on education, health expenditures and total education expenditures share a common trend and long-run equilibrium as suggested theoretically. The cointegration analysis was started by employing the Johansen cointegration test. Tables 3 below show that trace statistic indicate four (4) cointegration and maximum Eigenvalue statistic equally indicates four (4) cointegration at the 5 percent level of significance, suggesting that there is cointegrating (long-run) relations between the variables so tested.

Cointegration Test for Model 1

Table 3: Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace statistic	0.05 percent critical value	Prob. **
None*	0.826097	L137.5707	69.81889	0.0000
At most 1	0.717709	81.59443	47-856JJ	0.0000
At most 2	0.543283	41.12031	29.79707	0.0017
At most 3	0.393194	16.04222	15.49471	0.0413
At most 4	0.001771	0.056732	3.841466	0.8117

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level ** Mackinnon- Haug-Michelis (1999) p- values Source: Authors calculation using e- views

Table 4: Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	5 percent Critical value	Prob. **
None*	0.826097	55.97625	33.87687	0.0000
At most 1	0.717709	27.58434	27.58434	0.0007
At most 2	0.543283	21.13162	21.13162	0.0132
At most 3	0.393194	14.26460	14.26460	0.0265
At most 4	0.001771	3.841466	3.841466	0.8117

Source: Authors calculation using e- views

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level

* denotes rejection of/he hypothesis at the 0.05 level

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

Cointegration Test for Model 2

Table 5: Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace statistic	0.05 percent critical value	Prob. **
None*	0.708086	64.30041	47.85613	0.0007
At most 1	0.439861	24.89898	29.79707	0.1651
At most 2	0.149015	6.352719	15.49471	0.6538
At most 3	0.036479	1.189164	3.841466	0.2755

Trace test indicates I cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level ** Mackinnon- Haug-Michelis (1999) p- values

Source: Authors calculation using e- views

Table 6: Unrestricted Cointegration Rank Test (Maximum Eigen value)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	5 percent Critical value	Prob*
None*	0.708086	39.40143	27.58434	0.0010
At most 1	0.439861	18.54626	21.13162	0.1107
At most 2	0.149015	5.163556	14.26460	0.7210
At most 3	0.036479	1.189164	3.841466	0.2755

Source: Authors calculation using e- views

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level

* denotes rejection, of the hypothesis at the 0.05 level

** Mackimwn- Haug-MicheHs (1999) p- values

Ordinary Least Squares Result

Table 7: Summary of Ordinary Least Squares Result (Model 1)

Dependent variable: GDP Method: Least Squares Sample (Adjusted): 1981 2014

Variable	Coefficient	Std. Error	t. Statistics	prob.
REE	1.559281	0.608950	2.560607	0.0159
CEE	-0.125142	0.076415	-1.637666	0.1123
HEX	4.525075	1.261652	3.586626	0.0012
EXP	-0.688418	0.760195	-0.688418	0.4967
C	234073.9	9603.157	24.37469	0.0000

R- squared 0.962676

Adjusted R-squared 0.957527

statistics 186.9930

Durbin-Watson stat 2.053532

This implies that a unit increase in REE will increase the GDP by approximately 1.55 per cent which implies that if the government should increase recurrent expenditures on education, then economic growth that will be sustainable will be achieved, meaning that government should invest more in recurrent expenditures on education in order to enhance economic growth. It also shows positive relationship between GDP and HEX. This implies that a unit increase in health expenditures will increase GDP by 4.52 per cent. However, a negative relationship exists between GDP and CEE, implying a reduction in the GDP by 0.12 per cent. The EXP also has a negative impact on the economy's growth as shown in this analysis by the 0.52 reduction in the GDP due to a unit rise in EXP. This however contradicts the A priori expectation, notwithstanding, the R² which is referred to as the coefficient of determination is estimated as 0.962676, implying that approximately 96 per cent variation in GDP is explained by the explanatory variables, i.e. REE, CEE, HEX and EXP. The Adjusted coefficient of determination (R~) is 0.95 and this shows that 95 percent of variation in economic growth and sustainable development is caused by variation in REE, CEE, HEX and EXP in the Nigerian economy. The adjusted R² (0.957527) shows how robust the R² is.

The Durbin Watson test of serial correlation indicates absence of serial correlation as indicated by a D-W statistic of 2.05. REE and HEX variables, except CEE and EXP, have the correct signs. The F-statistic of 186.99 is significant and this shows that all the variables used in this paper are significant when explaining educational investment and economic growth in Nigeria. Thus, the hypothesis of a significant linear relationship between sustainable development, measured by the gross domestic product, and the four independent variables is validated.

The T- Test suggests that total educational expenditures with a value of 0.688418 and is not statistically significant in explaining growth. This result is in agreement with the work of Ndiyo (2002) on the "Paradox of education and Economic Growth in Nigeria" modeled for contribution of education growth. He observed that contrary to a priori expectations, the estimate for the impact of education on growth was consistently insignificant and negative. However, Ndiyo is not alone in this position. Kyriakon (1980), Lan et al. (1991) and Dasgupta and Weale (1992), seem to agree to this argument. In essence, the contribution of education to economic growth certainly depends on the quality of education.

Table 8: Summary of Ordinary Least Squares Result (Model 2)

Dependent variable: GDP **Method:** Least Squares **Sample (Adjusted):** 19702014

Variable	Coefficient	Std. Error	t. Statistics	prob.
PRI	-0.003983	Error	-1.254781	0.2167
PPRI	0.060858	0.010048	6.056972	0.0000
TER	0.094549	0.012017	7.868030	0.0000
C	21631.90	22880.76	0.945419	0.3500
R-squared	0.956427			
Adjusted R-squared	0.953239			
F-statistics	299.9845			
Durbin-Watson stat	2.076383			

The Ordinary Least Squares Result in table 8 shows the all the variables except primary school enrolment are statistically significant in explaining growth and development in the Nigerian economy.

Table 9: Summary of Over parameterize Error Correction Model. Modeling: GDP

Variable	Coefficient	Std. Error	t- Statistics	Prob.
GDP(-1)	1.254059	0.311201	4.029744	0.0024
GDP(-2)	-0.261714	0.324322	-0.06956	0.4385
GDP(-3)	-0.048055	0.324322	-0.193905	0.8501
REE	1.130322	0.247826	2.493108	0.0318
REE(-1)	-0.497523	0.453379	-0.7^3586	0.4918
REE(-2)	-0.058248	0.697214	-0.081333	0.9368
REE(-3)	0.191032	0.716175	0.168476	0.8696
CEE	0.012384	1.133884	0.070446	0.9452
CEE(-1)	-0.036614	0.175795	-0.265562	0.7960
CEE(-2)	-0.224254	0.137873	-3.178158	0.0099
CEE(-3)	0.224254	0.077727	2.885141	0.0162
HEX	-0.151500	1.537202	-0.098556	0.9234
HEX(-1)	-0.224254	1.656453	-0.135461	0.8949
HEX(-2)	-0.246922	0.968097	-0.254415	0.8043
HEX(3)	0.970452	1.836068	0.525549	0.6086
EXP	-0.598425	0.535962	-1.116544	0.2903
EXP(-1)	0.497686	0.912095	0.545652	0.5973
EXP(-2)	-0.051432	1.164438	-0.044169	0.9656
EXP(-3)	0.038289	0.747043	0.051255	0.9601
ECM(-1)	-0.107845	0.235000	-0.458916	0.6561
C	16982.25	34846.82	0.487340	0.6365

$R^2 = 0.92$ $R^2 = 0.91$ AIC = 21.3 SC = 22.35 DW = 2.41, LL = -310.51

The result of the over parameterized ECM shows that the co-efficient of the error correction term is significant with the negative sign that means that the speed of adjustment is satisfactory and will be able to correct any deviation from the long run equilibrium.

The parsimonious ECM model is established by deleting the insignificant variables from the over parameterized ECM model. The summary of the parsimonious ECM result is shown in table 9 below:

Table 10: Summary of Parsimonious ECM Result. Modeling: GDP

Variable	Coefficient	Std. Error	t- Statistics	Prob.
GDP(-1)	3.765075	0.271987	13.84283	0.0000
GDP (-2)	0.220709	0.058305	3.785386	0.0008
GDP (-3)	-1.885356	0.365333	5.160657	0.0000
REE	224272.6	12943.28	17.32734	0.0000

$R=0.92$ $R^2 = 0.92$ AIC = 21.3 SC = 22.35 DW = 2.41, LL = -376.51

The relevant portion of the variance decomposition is shown in table 10 below:

Table 11: Survey of Variance Decomposition of GDP

Periods	S.E	GDP	REE	CEE	HEX	EXP
1	15714.21	100.0000	0.000000	0.000000	0.000000	0.000000
2	24362.31	84.20822	10.13966	0.878040	3.513810	1.260276
3	39239.02	58.78771	31.53301	5.792515	1.440085	2.446681
4	53484.73	49.88828	41.17220	5.725607	0.775135	2.438771
5	66885.02	44.36036	47.11112	4.959411	1.135905	2.433201
6	80121.45	41.01048	50.88064	3.853210	1.590977	2.604685
7	93121.32	37.93162	54.23728	3.170970	1.943053	2.717079
8	105844.0	35.29523	57.04826	2.736551	2.385587	2.534374
9	117797.9	33.23749	59.23131	2.409672	2.786081	2.335453
10	129399.2	31.50325	61.02998	2.198572	3.049469	2.218731

The variance decomposition result shows that other than shock to itself, which was about 100 percent in the first period, shocks to recurrent expenditures on education is explain about 10 per cent of the changes in the second period which might be as a result of increase in recurrent expenditures, this increased to 57 percent in the 8th period and 61 percent in the 10th period. Shocks to capital expenditures and total expenditures on education did not explain significant portion of the changes in sustainable economic growth in the Nigerian economy as a result of appropriate allocation to the educational sector.

Summary and Conclusions

The result of this study showed that funding of post primary and tertiary institutions contributes to growth while in most cases primary school forms dampen growth because its contribution is not statistically significant. Above all, it was noticed that in the long run, the lag 3 of primary school is significant and it plays a very important role in encouraging growth that might be sustainable. The implications of this is that primary school products, even while at school contribute to helping their parents mostly in agriculture given our traditional method of admission process to higher institutions, most students prefer to seek admissions into Education, Arts and Social Sciences compared to core sciences, engineering and technical courses. In the face of saturated labour market in Nigeria, most graduates therefore find it difficult to be self employed.

In spite of the meager resources allocated to both sectors, the result of the empirical analysis showed that government recurrent expenditures and health expenditures had positive relationship with economic growth. The non significance of educational funding might be the result of lip service the government and those in charge put to the sector. The implication of this non significance as stated in the work of Robison, Eravwoke and Ukavwe (2014) is that the money the government spends on the educational sector in Nigeria is not largely enough to transform it into growth and development of the Nigerian economy, the result is in line with the fact that the allocation in the Nigerian budget to the educational sector is below the recommended 26 percent. This is one of the major reasons why the various unions (ASUU, COEASUU etc) are always going on indefinite strike.

Conclusion

Funding of the educational sectors which brings high level of human capital development holds the key to the nation's socioeconomic development as proved by this research study. Also, education funding and its development is one of the greatest catalysts for the improvement of the standard of living of the population. The study shows that investment in education and health which is the basis for human capital development is beneficial and remains an essential tool of economic growth and in solving contemporary issues in Nigeria. The post primary and tertiary school enrolments, total government expenditure on health and education as well as recurrent expenditures on education were significantly related to economic growth in Nigeria.

Recommendations

Following the results reported in the preceding section, the author makes the following recommendations:

A country that seeks to experience rapid economic growth must give high preference to cramming that a high percentage of its population is entitled to quality education. The educational sector is one that ensures an increase in output per worker and this can transcend into economic growth. The Nigerian government should get involved actively with regard to financing educational pursuits in the country.

The priority being placed on education is low regardless of the United Nations specifying that 26% of the country's budgetary allocation should be accorded to the education sector. This needs to be addressed as expenditure on education secures the future of the nation and the world at large.

Government needs to channel more resources to the capital segment of education like building of classrooms and laboratories, purchase of teaching aids etc. as these will help in enhancing knowledge, increased productivity and by implication promoting economic growth. It is a

well-known fact that the funding of the educational sector is a burden that is becoming too large for the government to bear alone.

Government should ensure that capital expenditure and recurrent expenditure are properly managed in a manner that it will raise the nation's production capacity and accelerate economic growth.

Government should encourage the education and health sectors through increased funding, as well as ensuring that the resources are properly managed and used for the development of education and health services.

Lastly, government should increase its funding of anti-graft or anti-corruption agencies like the Economic and Financial Crime Commission (EFCC), and the Independent Corrupt Practices Commission (ICPC) in order to arrest and penalize those who divert and embezzle public funds.

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