



## HIGHER EDUCATION EXPENDITURE: A PANACEA FOR HUMAN CAPITAL DEVELOPMENT AND ECONOMIC GROWTH IN NIGERIA (1986-2016)

APEH, Ajene Sunday

Department of Economics and Management,  
Faculty of Management and Social Sciences,  
Nigeria Police Academy, Wudil, Kano - Nigeria

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### Abstract

*Education is a critical component of human development such that a country cannot afford to sacrifice it to the whims and caprices of individual choice. This study examined the impact of human capital development on economic growth in Nigeria. The main objective of the study was to investigate the effect of higher education expenditure as a panacea to human capital development and consequently economic growth in Nigeria. The study adopted OLS and error correction model as the methodology. The result revealed that capital expenditure on education, recurrent expenditure on education; tertiary education enrolment and number of graduate in the tertiary institutions contributed positively to human capital development and economic growth in Nigeria and are statistically significant. The coefficient of the error-correction terms carries the correct sign (negative) and is statistically significant. The study therefore, concluded that capital expenditure on education, Recurrent expenditure on education, tertiary education enrolment and number of graduate in the tertiary institutions have great link with the gross domestic product and should be manage effectively through various fiscal, monetary and educational control policies and if Nigeria is to achieve sustainable economic growth, it is importance for the country to reposition herself as a potent force through the quality of her products from the tertiary school systems as well as making her manpower relevant in the highly competitive and globalised economy through a structured and strategic planning of her educational institutions. The study recommended amongst others that; (i)The government and the private sector must join hands to mobilize resources to furnish tertiary institutions and equip them with adequate facilities such; libraries, laboratory equipments, computers and modern instructional materials in order to improve the quality of education and enhance human capital development.*

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**Keywords:** Higher Education Expenditure, Human Capital Development, Economic Growth

### JEL Classifications:

### Introduction

Education is a critical component of human development such that a country cannot afford to sacrifice it to the whims and caprices of individual choice. However, in most developing countries, improving the access to human development especially basic education is yet a cardinal objective of most government despite the opposition against state involvement in the productive sector of the economy. Education sector is important in human development as a supplier of the trained manpower and it is a prerequisite for the accomplishment of other development goals.

However, high quality and market driven education is capable of offering a genuine solution to most economic problems ranging from poverty,

unemployment, and population pressure. But it is paradoxical to note that in spite of the country's rich endowment in human and material resources; the performance of Nigerian economy with respect to human capital development has been qualitatively pedestrian and unimpressively, fails to contribute to economic growth. Human resource development in Nigeria has been an intractable problem because of the uncontrolled increase in population. This has led to the pushed in the costs of higher education expenditure and human resource development constantly upward thereby creating a huge gap which the government find difficult to fill (Allege & Ogunrinola, 2012).

In view of the above assertion, this study seeks to analyze the impact of higher education

expenditure on human capital development in organized into three sections.

### Literature Review

#### Concept of Government Expenditure on Education

The concept of public expenditure can be traced back to the classical ideology. Although the role of the governments were very narrow, as the states were restricted to function with respects to National security (Internal and External administration of justice and maintenance of state machineries and education). The classical believed that the interference of the government in the economy will jeopardize the free working of the market but absence of perfect competition, inequitable income distribution, existence of public goods, and externalities are justified and made it inevitable and imperative for government intervention in an economy.

The concept of government expenditure may be interpreted in various ways: it may be conceived as reflecting budgetary transactions, public enterprise, public regulations and similar concerns. Public expenditure is used to provide public goods and services to the populace through which economic growth is induced (Oribu, 2013).

Olaniyi, & Adam (2010) explained that public expenditure refers to the expenses which government incurs in the performance of its operations. He argued that, with increasing state of activities, it may be difficult to judge what portion of public expenditure can be ascribed to the maintenance of government itself and what portion to the benefit of the society and the economy as a whole. He concluded that, in spite of the fact that public expenditure has increased rapidly over the years and coupled with the role and importance in the national economy, the area of public expenditure has remained relatively unexplored. Tanzi & Davoodi (2009) define public expenditure as all expenditure by government, including that financed by fees and charges, as well as that financed by revenue fund.

Therefore, Enueme & Chika (2009) posited that government expenditure on education is expenses incurred on education. It is the expenses incurred by the government on education at various levels which include the primary, secondary and tertiary education in Nigeria.

Government expenditure on education as used in this study refers to government expenditure on education in order to increase productivity in education and to enhance the productive capacity. It could also mean the expenditure which the government incurs for its own education to provide facilities, infrastructures for schools and It is the expenditures earmark for training of teachers. Government

Nigeria. Apart from the introduction, this paper is

education expenditure could have positive effects on the growth of human capital and Gross Domestic Products (GDP), which translates to the entire economy's wellbeing.

#### Concept of Human Capital

Perotti, (2011) refers to human capital as the abilities and skills of human resources of a country, while human capital formation refers to the process of acquiring and increasing the number of persons who have the skills, education and experience that are critical for economic growth and development of a country. Human capital is the term economists often use for education, health, and other human capacities that can raise productivity when increased (Todaro and Smith 2007).

Appleton & Teal (2008) defined human capital as a concept which identifies human characteristics which can be acquired and also increase income. It is commonly taken to include peoples' knowledge and skills acquired partly through education, but can also include their strength and vitality, which are dependent on their health and nutrition. This makes education umbrellas under which all other recognized factors can fit. Human capital theory thus focuses on education as inputs in economic production.

Lecuwen (2010), stated that "Human capital is implicitly referred to as formal and informal education, yet it can also contain factors such as the costs of raising children, health coats, and ability. "The health and education, components are recognized, although education comes ahead of health, showing the priority placed on it. In line with this, Igun (2015) defines human capital as 'the total stock of knowledge, skills, competencies, innovative abilities possessed by the population'. These obviously have education as their bedrock.

From the organizational points of view, Picken (2009) have this to say; 'human capital is generally known to consist of the individual's capabilities, knowledge, skills and experience as they are relevant to the task at hand, as well as the capacity to add to this reservoir of knowledge, skills, and experience through individual learning. Human capital refers to the abilities and skills of human resources of a country. This suggests that human capital is a form of resources that can be acquired, built up and developed. In essence, the development of human capital is to ensure that they acquire meaningful and productive skills that enhance their capabilities to engage in productive activities that lead to earning of livelihood.

In human capital development, education is essential. Education is concerned with the cultivation of “the whole person” including intellectual, character and psychomotor development. Education is two closely related human capital components that work together to make the individual more productive.

Aigbokhan, Imahe & Ailemen (2015) defined education as a basic and obvious process by which skills, knowledge and attitude are acquired for the performance of socio-economic responsibilities, social integration, improving personal competence, and seeking better opportunities.

From the above, human capital is seen as the knowledge, skills, attitudes, physical and managerial efforts required to manipulate capital, technology, land and material to produce goods and services for human consumption. Therefore, human capital impacts on productivity, employment, income generation and standard of living.

Economic growth is essential for sustainable development. There is a strong link between economic growth and improvement in living standard. Economic growth can support environment sustainability by increasing the resource available for environmental improvement.

### **Theoretical Framework**

This study is anchored on the neoclassical theory. The neoclassical theory of growth developed by Solow and Swan centered macroeconomists’ attention throughout the 1960’s and 1970’s on tangible (physical) capital formation as the driver of economic growth. However, the theory showed that, because of decreasing marginal returns in substituting physical capital for labour, the accumulation of capital would not indefinitely support a steady rate of growth in labour productivity. According to the Keynesian macroeconomic thought, public spending can contribute positively to economic growth. Hence, an increase in the government consumption is likely to lead to an increase in employment, profitability and investment through multiplier effects on aggregate demand, which provokes an increased output depending on expenditure multipliers. The opponents of this approach stipulate that government consumption crowds out private investment, hampers economic growth in the short run and diminishes capital accumulation in the long run (Diamond, 2006).

Moreover, Barro & Sala-i-Martin (2002) classify expenditures as productive and unproductive and assume that productive expenditures have a direct impact on the rate of economic growth and the unproductive expenditures have an indirect or no effect. However, government spending on basic infrastructure plays a crucial role in economic growth. Having, for instance, an efficient road network could

Jhingan (2003), defined economic growth as a process whereby the real per capita income of a country increases over a long period of time. According to him economic growth is measured by the increase in the amount of goods and services produced in a country. Economic growth occurs when an economy’s productive capacity increases which in turn is used to produce more goods and services.

Todaro and Smith (2007) defined economic growth as a gradual and steady change in the long run which comes about as a result of a gradual increase in the rate of savings and population. Economic growth implies more output and an increase in efficiency in production, that is increase in output per unit.

Oribu (2013) described economic growth as the process by which national income or output is increased. An economy is said to be growing if there is sustained increase in the actual output of goods and services per head. The rate of economic growth therefore measures the percentage increase in the real national output during a given period of time usually a year, over the preceding year’s level

reduce the time and the cost to move goods and services across the country. It also facilitates the connection among the different parts of the country and enhances their interaction. In addition, the rehabilitation of electricity and the establishment of efficient project for energy will reduce costs and have positive impact on economic growth ( Barro, 2003, Barro and Sala-i-Martin 2005). Moreover, the quality of human resources has a significant impact on economic growth. This stems from the fact that the quality and quantity of labour determine the level of production and since it is a factor of production. Hence, improving the quality of the labour force will be reflected by a positively significant impact on investment, innovation among others.

The definition of nation’s wealth has extended to contain not only physical capital but also human capital as an independent factor of production essential to achieve high and sustainable economic growth rates. Hence, developing countries have attempted to stimulate the accumulation of human capital through public education expenditure as well as government spending on health and other social services. Education is one of the important factors that determine the quality of human capital. Moreover, Hartshorne (2005) suggests that formal education plays an important positive role in the economic growth. Consequently, the human capital with physical capital, are key elements of the nation’s wealth. The former is considered to be an independent factor of production that is indispensable

to achieve high and sustainable economic growth rates.

### **Empirical Literature Review**

Yesufu (2014) examined the nexus between human capital investment and economic growth in Nigeria. Specifically, he study investigated the causality between human capital investment and economic growth during the period 1975 – 2005 using cointegrated and Error Correction Mechanism (ECM) technique. The findings of the study revealed that there exists a directional causality between Human Capital Investment and Economic Growth in Nigeria. It is therefore recommended that government should increase its budgetary allocation to the education and health sectors coupled with concerted efforts of all the stakeholders; government at levels, nongovernmental organization and the organized private sector in improving educational and health facilities for sustainable economic growth.

Ram (2006) conducted a research on the link between government spending and economic growth in Nigeria over the last three decades (1977 – 2006) using Augmented Dickey Fuller (ADF) unit root test reveals that all variables incorporated in the model were non-stationary at their levels. In an attempt to establish long-run relationship between public expenditure and economic growth, the result reveals that the variables are co-integrated at 5% and 10% critical level. With the use of error correction model to detect short run behaviour of the variables. The result shows that for any distortion in the short-run, the error term restore the relationship back to its original equilibrium by a unit. A number of suggestions were however made on how government spending should be channel in order to influence economic growth significantly and positively in Nigeria.

Bakare (2013) investigated the growth implications of human capital investment in Nigeria using vector autoregressive error corrections mechanism. The study revealed that there is a significantly functional and institutional relationship between the investments in human capital and economic growth in Nigeria. It was revealed that 1% fall in human capital investment led to a 48.1% fall in the rate of growth in gross domestic output between 1970 and 2000.

### **Methodology**

#### **Methods and sources of Data Used**

The kinds of data required for this study were secondary data. These variables are; real gross domestic product growth rate (RGDP), capital expenditure on education (CEE), recurrent expenditure (REE), tertiary education enrolments (TEE) and the number of tertiary graduates (NGTI) were used to proxy human capital development and time (t) as a markup for the difference. RGDP is chosen as proxy for

Ogujiuba & Adeniyi (2016) examine the impact of public expenditure on education on the economic growth and development in Nigeria. Augmented Dickey Fuller (ADF) unit root test method of analysis was utilized for the data analysis. The regression result indicated that public expenditure on education has a statistical significant impact on Real GDP, Per Capita Income and Real Investment in Nigeria between 1980 and 2004. However, estimated coefficients of the variables included in the model gave the expected positive sign. Coefficient of determination (R-Squared) shows that the model has a good fit, with approximately 70 percent variation in RGDP, PCI and RInv is explained by the public expenditure on education in Nigeria. The value of Durbin-Watson suggests that the problem of serial correlations is less severe. In brief, public expenditure on education is a significant factor influencing the level of economic growth in Nigeria. This implies that an increase in budgetary allocation to education will lead to an increase in the level of economic growth in the long run *ceteris paribus*. This result is however consistent with the works of Olomola (2008) & Alege et al (2010). The result concluded that educational expenditure significantly influences economic growth in Nigeria. It is equally important to note that the size of government expenditure is a variables tool in propelling economic growth in Nigeria.

Babatunde & Adefabi (2014) investigated the long run relationship between education and economic growth in Nigeria between 1970 and 2003 through the application of Johansen cointegration technique and vector error correction methodology. Their findings revealed that there is a long run relationship between education and economic growth. A well educated labour force appears to significantly influence economic growth both as a factor in the production function and through total factor productivity.

Ayara (2013) provided evidence on the relationship between the paradox of education and economic growth in Nigeria using the standard growth-accounting model. The findings suggest that education has not had the expected positive growth impact on economic growth.

economic growth. The data required for this study were sourced from secondary sources which includes; publications of the Education Sector Analysis (ESA); the Central Bank of Nigeria (CBN), Federal Office of Statistics (FOS); National Youth Service Corp (NYSC) annual report, Federal Ministry of Education (FME) and the National Assembly Reference Library (NASRL) Additional information was obtained from the Federal Republic of Nigeria Appropriation Act of various years, and past issues of the annual details of approved capital and recurrent expenditures on

education and Nigeria Social and Economic Research (NISER) Library.

**Model Specification**

In an attempt to analyse the Impact of higher education expenditure on human capital development

$$GDP = f(PPET, NHIN) \dots\dots\dots (1)$$

Where: GDP is proxy for Gross domestic product, PPET = population of the people that enrolled in tertiary institution in Nigeria, NHIN = Number of higher institution in Nigeria. In consonance with the

and economic growth in Nigeria, the model by Ayunku & Etale (2015) who adopted the popular growth model is domesticated for this work and it is stated as follows:

stated objective, the modified form of the above model is stated as;

$$RGDP = \beta_0 + \beta_1 CEE_1 + \beta_2 REE_2 + \beta_3 NGTI_3 + \beta_4 TEE_4 + \mu \dots\dots\dots (2)$$

Where;  
 RGDP<sub>t</sub> = real gross domestic product growth rate,  
 CEE<sub>t</sub> = capital expenditure on education,  
 REE<sub>t</sub> = recurrent expenditure on education  
 NGTI<sub>t</sub> = number of graduates in tertiary institutions  
 TEE<sub>t</sub> = tertiary education enrolment  
 β<sub>0</sub> = Intercept of the equation  
 μ = Stochastic error term

The Log form of the equation is stated as:

$$\ln RGDP = \beta_0 + \beta_1 \ln CEE_1 + \beta_2 \ln REE_2 + \beta_3 \ln NGTI_3 + \beta_4 \ln TEE_4 + \mu$$

**Apriori expectations**

On Appriori- expectation, β<sub>1</sub>- β<sub>4</sub> > 0 which implies that all the explanatory variables are expected to have positive impact on economic growth in Nigeria

Dickey fuller test (ADF) and Johansson Co-integration test.

**Method of Data Analysis**

The data used for this study were analyzed using inferential statistical tools such as OLS and ECM. The OLS method was adopted as the estimation technique through stepwise regression in order to avoid Multicollinearity of explanatory variables. Other diagnostics conducted include: Augmented

**Data Presentation and Analysis**

**Unit Root Tests**

The growth rates of all the variables were used to conduct unit root tests to determine the stationarity of the variables using Augmented Dickey-Fuller (ADF) test. The results of the unit root tests are presented in table 1. The results in Table 1 showed that all the variables are stationary at first differences.

**Table 1: Results of Unit Roots Tests using Augmented Dickey Fuller (ADF)**

Variable	ADF Statistics with Constant but no linear trend	ADF-Test Statistics with Constant	Critical Value at 5%	Order of Integration
RGDPG	-11.6066*	-3.1436	-3.0114	I(1)
CEE	-5.8576*	-4.0991	-3.0114	I(1)
REE	-5.1936*	-4.4764	-3.0114	I(1)
NGTI	-4.6092*	-4.3507	-3.0199	I(1)
TEE	-5.3092*	-4.1008	-3.0199	I(1)

Source: Compiled by the Author(s) using E-view 9.0  
 \*significant at 5 percent level

**Cointegration Test**

Having tested the stationarity of each time series, the next step is to search for cointegration between the variables. For this purpose cointegration tests were conducted by using the reduced rank procedure developed by Johansen (1988) and Johansen and Juselius (1990). This method should produce asymptotically optimal estimates since it incorporates a parametric correction for serial correlation. The nature of the estimator means that the estimates are robust to simultaneity bias, and it is robust to departure from normality (Johansen 1995). Johansen method detects a number of cointegrating vectors in non-stationary time series. It allows for hypothesis testing regarding the elements of co integrating vectors and loading

matrix. Johansen procedure is used to determine the rank rank to identify long run relationship. The cointegration test results are reported in table 2 below. As evident in table 2, the dependent variable RGDP is cointegrated with CEE, REE, TEE and NGTI. The test statistics strongly reject the null hypothesis of no cointegration in favour of the cointegration relationships between the variables. Thus, the results show that the dependent and independent variables are both cointegrated and have long run relationship with one another. Furthermore, the short-run adjustment dynamics is specified by the error correction mechanism (ECM). Best fitting or parsimonious error correction model was selected.

**Table 2: Johansen Cointegration Test**

Eigenvalue	Likelihood Ratio	5	Percent Critical Value 1	Percent Critical Value	Hypothesized No of CE(s)
0.6683	70.2808		47.21	54.46	None**
0.4852	40.4849		29.38	35.65	At most**
0.4048	22.5529		15.41	20.04	At most**
0.271	8.5401		3.76	6.65	At most**

Source: Compiled by the Author(s) using E-view 9.0  
 (\*\*\*) denotes rejection of the hypothesis at 5% (1%) significance level.  
 L.R. test indicates 4 cointegrating equation(s) at 5% significance level.

**Table 3: Results of Parsimonious error correction model**

Variables	Estimated Coefficient	t-Statistic	Prob.
DL(GCEE(-1),1)	1.4155	4.2805	0.0004
DL(GREE(-2),1)	2.4509	2.5680	0.0183
DL(GNGTI(-1),1)	1.3824	0.1986	0.8445
DLGTEE	1.3684	0.2983	0.7012
ECM(-1)	-0.6715	-3.7544	0.0012
C	5.6806	0.2145	0.8323

Notes: R-Squared= 0.8074  
 Adjusted R- Squared=0.7689  
 F. Statistic = 20.96  
 D.W.=2.31

Source: Compiled by the Author(s) using E-view 9.0

**Error Correction Mechanism Result**

Application of the normal OLS regression may yield spurious result. Therefore, this procedure involves determining the time series properties of the data and thereafter specifying an error correction model, which will help in investigating both the short and long run impacts of the identified variables on the gross domestic product. The ECM has shown above is otherwise known as speed of adjustment is significant with the probability value which is less than the 0.005. This can be seen on the ECM that shows ECM value of

0.67. This implies that the present value of gross domestic product adjust rapidly to changes in capital expenditure on education, Recurrent expenditure on education, tertiary education enrolment and number of graduate in the tertiary institutions. The value of ECM given as 0.67% indicates a feedback of or an adjustment of 0.67% from the previous period disequilibrium of the present level of gross domestic product in the determination of causality between the past level of gross domestic product and the present and past level of the explanatory variables which includes

capital expenditure on education, Recurrent expenditure on education, tertiary education enrolment and number of graduate in the tertiary institutions.

The coefficient of the error-correction term, however, is a short-term adjustment coefficient and represents the proportion by which the long-term disequilibrium (or imbalance) in the dependent variable is being corrected in each short period.

**Johansen Co-integration Test**

**4.3. Regression Result and Interpretation**

RGDP= 1.1631 + 0.107LOG(CEE) + 0.367LOG(REE)+ 0.742LOG(NGTI)+ 0.0005(TEE) + 0.0001(ECM)					
S.E = (0.538)	(0.077)	(0.059)	(0.062)	(0.0003)	(0.002)
t-Test = (2.158)	(1.382)	(6.210)	(11.904)	(0.153)	(0.054)
R-Square = 99.3					
Adjusted R-Square = 99.0					
F- Statistics = 368.96					
DW- statistic = 1.93					

Source: Compiled by the Author(s) using E-view 9.0

From the regression result, the model performed relatively well with correlation coefficient (R-squared) which is 0.99. This showed the strength of the model, 99% indicate a strong model. The result of the R-squared showed that the model has a good fit as shown with 0.993% which implies that capital expenditure on education, Recurrent expenditure on education, tertiary education enrolment and number of graduate in the tertiary institutions accounted for about 99.3% systematic variation in real gross domestic product while the remaining 0.7% are other factors which affects the real gross domestic product but were not captured in the model. Even after adjusting with the degree of freedom, the adjusted R-squared showed that the model still has a good fit of 99.0% whereas the remaining 1% are other factors which affects Real gross domestic product but were not captured in the model which was earlier represented with the error term. F-test is used to test joint statistical significance among the variables; the result of f-statistics (368.9) showed that there is joint statistical significance between Gross Domestic Product and external debt, external debt service, government capital expenditure, gross capital formation, inflation rate and interest rate as shown with low probability value at 5% level of significance. The Durbin Watson (1.93)- statistics showed that the serial correlation is minimal ( that is, there is no evidence to show the presence of autocorrelation). The regression coefficients of capital expenditure on education, recurrent expenditure on education, tertiary education enrolment and number of graduate in the tertiary institutions all carry positive signs, which confirmed to a-prior expectation. The t- values of regression coefficients of capital expenditure on education, recurrent expenditure on education,

Johansen co-integration is used to examining the long run relationship among variables; the co-integration analysis in this study will be unrestricted Johansen co –integration test. The standard statistics in the interpretation of the test are maximum Eigen value and trace statistics, at a given level of significance, in order to identify the existence of co-integration equilibrium on the basis of the standard statistics identified above.

tertiary education enrolment and number of graduate in the tertiary institutions are statistically significant at 1% and 5% .In line with these, we reject the null hypothesis of this research that higher education expenditure have no significant impact on human capital development and consequently on Nigeria economy.

**Discussion of the Findings**

The result from this study revealed that there is positive relationship between capital expenditure on education, recurrent expenditure on education, number of graduate in the tertiary institutions and tertiary education enrolment and real gross domestic product. This implies that increase in the capital expenditure on education, recurrent expenditure on education; tertiary education enrolment and number of graduate in the tertiary institutions would increase human capital development and economic growth in Nigeria.

The empirical result showed that there is positive relationship between capital expenditure on education and gross domestic product. This implies that increase in the capital expenditure on education would increase economic growth in Nigeria. Investigation into the rationale behind this direct relationship showed that capital expenditure on education which targets the promotion of adequate infrastructure facilities such as libraries, laboratory equipments and computers in tertiary institutions and to increase investment opportunities will lead to increase in human capital development and real gross domestic product. This could be on the ground that when governments spend money to finance capital projects on education, it helps to increase and improve quality of graduates turn out from tertiary institutions

thereby increase human capital development and increase the output in the economy. The parameter estimate showed that a percent increase in the capital expenditure on education will increase the Gross Domestic Product by 0.10 percent. This direct relationship is statistically insignificant using t-test and standard error. The t-calculated of the capital expenditure on education is 1.382, while t-tabulated is 2.04, the standard error is; 0.077, while half of the parameter estimate is ( $\frac{1}{2} * 0.107 = 0.053$ ). Since the t-calculated is lesser than t-tabulated and the standard error is greater than half of the parameter estimate, there is sufficient reason to conclude that there is statistical insignificance between capital expenditure on education and economic growth. It is therefore imperative for the government and regulatory agencies to improve the capital finances to education in order to focus on capacity building so that the stock of human capital can encourage labour productivity and subsequently result to improved economic growth

It was also revealed that there is positive relationship between recurrent expenditure on education and gross domestic product. This implies that increase in the recurrent expenditure on education would increase economic growth in Nigeria. The recurrent expenditure on education which is used to finance day to day running of the tertiary institutions will enhance human capital development and the economic progress in the country. The parameter estimate showed that a percent increase in the recurrent expenditure on education will increase the Gross Domestic Product by 0.36 percent. This direct relationship is statistically significant using t-test and standard error. The t-calculated is 6.210 while t-tabulated is 2.04, the standard error is 0.059 while half of the parameter estimate is ( $\frac{1}{2} * 0.367 = 0.184$ ). Since the t-calculated is greater than t-tabulated and the standard error is less than half of the parameter estimate, there is sufficient reason to conclude that there is statistical significance between recurrent expenditure on education and economic growth.

More so, the study showed that there is positive relationship between Number of graduate in tertiary institutions and Gross Domestic Product. Increase in number and quality of number of

graduates in tertiary institutions will enhance the level of technical know-how such innovations, creativity and researches in tertiary institutions. The magnitude of the increase is shown with the value of the parameter estimate which implies that a percent increase in Number of graduate in tertiary institutions would result on average to about 0.74% increase in gross domestic product. However, this direct relationship is statistically significant at 5% level of significance using t-test and standard error for decision making, the t-test is 11.904 while the t-tabulated is 2.04, the standard error is 0.062 while half of the parameter estimate is ( $\frac{1}{2} * 0.7422 = 0.3711$ ). Since the t-calculated is greater than the t-tabulated and the standard error of the parameter estimate is less than half of the parameter, there is sufficient evidence to conclude that there is statistical significance between Number of graduate in tertiary institutions and Gross Domestic Product.

Investigation also showed that tertiary education enrolment has positive relationship with gross domestic product. The value of the parameter estimate showed that increase in the tertiary education enrolment would increase economic growth. This implies that if government increase number of tertiary education enrolment it will have multiplier effects on all productive activities in the country which robotically increases the gross domestic product. The empirical analysis showed hundred percent increase in tertiary education enrolment would result on average to about 0.05 percent increase in gross domestic product. However, this relationship is statistically insignificant at 5% level of significance using t-test and standard error for decision making. The t-test is 0.153 while the t-tabulated is 2.04 at 5% level of significance; the standard error is 0.0003 while half of the parameter estimates ( $\frac{1}{2} * 0.0005 = 0.00025$ ). Since the calculated t-test is less than the tabulated t-test and the standard error is greater than half of the parameter estimate, there is sufficient evidence to conclude that there is no statistical significance between tertiary education enrolment and gross domestic product. Therefore, investment in education such as increasing tertiary education enrolment by both private partnership and public investment with mild policies would enhance economic growth.

### Conclusion and Recommendations

This research work examined the impact of higher expenditure on education on human capital and economic growth in Nigeria. From nominal point of view, capital expenditure on education, recurrent expenditure on education, tertiary education enrolment and number of graduate in the tertiary institutions have been increasing while empirical evidence revealed that the economy is

not performing well and this does not augur well for the overall well being of our economy. The study therefore, concluded that capital expenditure on education, Recurrent expenditure on education, tertiary education enrolment and number of graduate in the tertiary institutions have a great link with the gross domestic product and should be manage effectively through various fiscal, monetary and educational control policies and if

Nigeria is to achieve sustainable economic growth rate, it is importance for the country to reposition herself as a potent force through the quality of her products from the tertiary school systems as well as making her manpower relevant in the highly competitive and globalised economy through a structured and strategic planning of her educational institutions. The following recommendations were offered:

1. The government and the private sector must join hands by mobilizing resources to furnish tertiary institutions and equip them with adequate facilities, libraries, laboratory equipments, computers and modern instructional materials in order to improve the quality of education and enhance human capital development, labour productivity and ensure sustainable growth and development.
2. Graduates drop-out rate from tertiary education need to be addressed, through effective synergy between post-primary and technical institutions to be able to address the technical manpower needs of the economy. Government should continue to provide enabling environment by ensuring macroeconomic stability that will encourage increased investment in human capital by individuals and the private sector.
3. Regular closure of tertiary institutions due to strikes, cult activities, and excesses of student unions, etc. should be addressed by the relevant authorities. Moreover lectures salaries and improved working conditions in tertiary institutions should be accorded high priority by the Government. Finally, the on-going reform by the Federal Government relating to the education sector as enunciated in the NEEDS document should be sustained with great commitment and will.

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