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HUMAN CAPITAL DEVELOPMENT AND PRODUCTIVITY GROWTH IN NIGERIA

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ABSTRACT

The focus of this study was to ascertain the impact of selected human capital development indicators such as government capital expenditure on education, government recurrent expenditure on education, literacy rate and school enrolment rate on productivity growth in Nigeria. The study used secondary data from 1980 – 2013 that were sourced from the publications of National Bureau of Statistics (NBS) and Central Bank of Nigeria (CBN) on the identified variables. The error correction modeling (ECM) technique was used to analyze the relationship between human capital development and productivity growth over the specified period through the ordinary least square (OLS) framework. It was found that government recurrent expenditure on education; literacy rate and school enrolment rate positively and significantly affect productivity growth in Nigeria. However, government capital expenditure on education records negative but significant relationship with productivity growth. This may be due to the high level of corruption that characterized the disbursement and utilization of fund meant for public projects. It is recommended that proper implementation mechanisms should be put in place in ensuring that budgeted capital and recurrent funds are expended on the sector so as to achieve the desired level of growth in the economy.

KEYWORDS: Education; literacy rate; human capital development; productivity growth; and school enrolment rate.

INTRODUCTION

Human capital has been recognized globally as one of the major factors that is responsible for the wealth of nations (Oluwatobi & Ogunrinola, 2011). It is believed that the concept of human capital was popularised in the 1950s and 1960s when labour-related experts began to look at issues around workforce quality when businesses spent money on training and education (Price Waterhouse Coopers, 2006). Companies developed an expectation that improvements in workforce quality through training would improve productivity and earning (John, 2007). In the same vein, Nigerian governments over the years recognized the importance of human capital formation in the development process and have embarked on various programmes and projects such as Universal Basic Education (UBE), presidential scholarship programme, residency programme for medical graduates and National Health Insurance Scheme (NHIS), among others which led to the establishment of educational institutions and health centres throughout the country (Oladoyin & Dauda, 2010).

Human capital development refers to a conscious and continuous process of acquiring and increasing the number of people with requisite knowledge, education, skill and experience that are crucial for the economic development of a country (Odusola, 1998). It entails building a nation's human resource endowment to make them knowledgeable, skillful, healthy and productive, which provides for the optimal exploitation and utilization of other resources to stimulate growth and development (Atoyebi, Olaleye, Ishola, Adekunjo & Kadiri, 2013). It can also be seen as the development of education and health to cultivate and develop individual capacities for optimal performance.

Education which is a major platform for developing human capital is expected to build individuals with requisite skills and knowledge that will help increase their efficiency and worth. The treatment of educational investment as investment in human capital rests on the assumption that the additional education acquired by individuals will lead to an increase

in their productivity which will be rewarded with higher earnings (Menon, 2010). The implication of higher earnings of educated workers is thus believed to reflect their superior productivity. Unfortunately, Nigeria's education system is facing major challenges that limit the advancement of the sector. Some of these challenges include low tertiary enrolment level, use of obsolete teaching aids, strikes and administrative hiccups, corruption, irregularity of teachers during teaching periods, lack of ICT infrastructure and other teaching methods, among others (World Bank, 2010). The deterioration in the quality of education services orchestrated by poor funding at all levels, especially at the higher education level further compounds the problem of human capital development in the country. Other issues include poor state of health facilities, uneven distribution of skilled manpower, poor reward system and inability of the country to retain a large proportion of its skilled and professional personnel (Anyanwu, 2007). Thus, Nigeria has been losing a significant proportion of her skilled and professional manpower that could help to grow the nation's economy to other national markets and increasingly depending on expatriate for many crucial functions (Ishola & Alani, 2012).

Most of the studies such as Dauda (2009), Abu and Abdullahi (2010), and Adelakun (2011) carried out in Nigeria in this area focused on human capital development and economic growth as dependent variable proxy by real gross domestic product. To the best of our knowledge, none of these studies has been able to establish the relationship between human capital development and productivity growth measured by the ratio of real gross domestic product (output) to working population (input). A study on human capital development and its impact on productivity growth in Nigeria is important because sustained economic growth can only be achieved through a sustained growth in productivity (Adenikinju, 2005). Therefore, this study empirically examines and analyzes the relationship between human capital development indicators (government expenditure on education,

literacy rate, and school enrolment rate) and productivity growth in Nigeria. The first section of the paper deals with the introduction of the subject matter while the second section focuses on reviews of related literature. The third section entails the methodology employed for the study while the fourth section focuses on the presentation and discussion of results. The paper ends with a section on conclusion and recommendations.

REVIEW OF RELATED LITERATURE

The Concept of Productivity

The concept of productivity has been explained variously by different people. Grayson (1982) defined productivity as what you get out of an activity for what you put in. It is the relationship between output of goods and services and the input of resources- human and non-human resources used in the production process (Sofoluwe, 2000). Output in this context can be in form of goods or services while the inputs vary from capital, energy, materials, time and labour. Productivity can also be defined as the ratio of output to input in a given period of time (Anyanwu, 2007). In other words, it is the amount of output produced by each unit of input. Business managers see productivity not only as a measure of efficiency, but also connote effectiveness and performance of individual organizations. Administrators are more concerned with organizational effectiveness, while the industrial engineers focus more on those factors which are more operational and quantifiable, work measurement and performance standards (Adekoya, 1999). Productivity can be computed for a firm, industrial group, the entire industrial sector or the economy as a whole. It measures the level of efficiency at which scarce resources are being utilized. Higher or increasing productivity will, therefore, mean either getting more output with the same level of input or the same level of output with less input.

Ark (2007) observes that productivity growth has many faces. He explains that in a static sense, it is simply about more output per unit of input and so it is very close to nominal

cost savings. But in dynamic sense, he explains the concept as to raising output growth faster than input growth; which implies "real" cost reductions which provide firms with larger market shares, and consumers and users with lower cost of the products and services they are buying. Central Bank of Nigeria (CBN) (2001) sees productivity as the amount of output produced by each unit of factor input. It refers to the ratio of factor output to input by industry groups or sector. CBN further explains that productivity in essence means quality of output, workmanship, adherence to standard, absence of complaint, customers' satisfaction, absence of disruption, trouble and other evidence of difficulty in an organization. Summarily, increased productivity could result from the reduction in the use of resources, reduction in cost, use of better methods or improvement in factor capabilities, particularly labour.

According to Adenikinju (2005, p.15), several factors have conditioned productivity growth performance in Nigeria. These factors include: accumulation of human capital; creation, transmission and absorption of technology; integration into the world economy and institutions; and government macroeconomic policies. The focus of this study was to examine the relationship between human capital development and productivity growth. Accumulation of human capital is perhaps the most important determinant of productivity in Nigeria. Human capital represents an important bridge in a country's capacity to absorb technology from other parts of the world. Human capital proxy by education and health indicators is quite important in explaining productivity. In an attempt to properly capture the impact of the selected human capital development variables on productivity, this study uses the real GDP divided by the working population as a proxy for productivity growth.

Determinants and Measures of Human Capital Development

Schultz (1971) opines that human capital refers to the stock of skills, knowledge, ideas, talent and health status of individuals which are relevant in the production process. Bontis, Dragonetti, Jacobsen and Roos (1999) view human capital as representing the human

factor in the organization; the combined intelligence, skills and expertise that gives the organization its distinctive character. The human elements of the organization are those that are capable of learning, changing, innovating and providing the creative thrust which if properly motivated can ensure the long-term survival of the organization. Odusola (1998) opines that the concept of human capital development refers to a conscious and continuous process of acquiring and increasing the number of people with requisite knowledge, education, skill and experience that are crucial for the economic development of a country. Simon-Oke (2012) explains that the development process has gone from the resources exploitative model to the knowledge based technology driven which implies that the efficiency with which the physical and natural resources of an economy are being organized in the transformation process is a function of the sophistication of its human resources.

In developing the human capital of a nation, the place of education is paramount. Education at all levels (primary, post-primary and tertiary) as observed by Babatunde and Adefabi (2005) contributes to human development through imparting general attitudes and discipline and specific skills necessary for a variety of workplaces. In recent times, investment in education has become very significant because of new challenges being faced in the Nigerian environment and the discovery of education as an impetus to growth and development (Odeleye, 2012). Education plays critical role, hence the need for more efficient allocation and disbursement of funds as aptly agitated for by various stakeholders such as Academic Staff Union of Universities (ASUU), Academic Staff Union of Polytechnics (ASUP), National Union of Teachers (NUT), among others, to the education sector. Basic education increases the efficiency and the participation of each individual in the society. Many developing countries have made significant progress in ensuring better access to education as evidenced by improved literacy and enrolment rates and higher quality and more equitable distribution of education services (Ishola & Alani, 2012). Education contributes to

growth by improving health, reducing infertility and possibly by contributing to political stability. The major importance of the educational system to any labour market would depend majorly on its ability to produce a literate, disciplined and flexible labour force via high quality education (Babatunde & Adefabi, 2005). Because of the pivotal role played by education in any economy, we considered it imperative to examine government expenditure on education as one of the determining factors of the level of human capital development and its contribution to productivity growth in Nigeria.

Another important measure of human capital development is the literacy rate of a country. Nigeria, prior to independence in 1960, had a history of dominance of quranic schools in the north and missionary schools in the south (Murtala, Babangida, Usman & Auwalu, 2013). All of these promoted mostly religious literacy. With the advent of christian missionaries later came western education, through which they exposed the whole of Southern Nigeria and part of the inland region to literacy (Aderinoye, 2002). Literacy efforts in Nigeria received a significant boost when UNESCO supported the establishment of an Adult Literacy Institute in 1963 in Ibadan to train professional adult educators (Murtala, *et al.* 2013). Then in 1982, the civilian government launched a 10-year National Mass Literacy Campaign. In order to achieve the goals of this 10-year campaign, the Federal Government directed each of the states to establish an Agency for Mass Education. A great wind of change came in 1990; when the Federal Military Government established the National Commission for Mass Literacy and Non-formal Education to coordinate adult and non-formal education programmes in the country.

Finally, this study examines school enrolment rate as one of the measures of human capital development. Schooling is widely acknowledged as a major investment in human capital that enhances later career opportunities and wages (Olanrewaju, 2011). It serves as an avenue for escaping poverty and reducing income inequality in an economy. The importance

of schooling to a child's social and economic status later in life cannot be overemphasized (Binder, 1998). Unfortunately, in many developing countries children either do not have access to education or are enrolled in schools of questionable quality (Khandker, Lavy & Filmer, 1994). The objective of any reasonable government is to improve access to primary and secondary schools by investing in educational infrastructure and optimizing the resources allocated to the educational sector. According to Olanrewaju (2011), enrolment rates improved over the years such that more than 79% of primary school aged children were enrolled in primary schools in 2002; the figure fell to 72% in 2004. The secondary schools present a more depressing picture as only 20.6% of the Nigerian population aged 12-17 years old were enrolled in secondary schools in Nigeria in 1990. Olanrewaju (2011) further explained that the figure increased over the years to 34% in 1996 and further to 40% in 2002, but this is still a very low enrolment rate for a country that needs to develop citizens into highly skilled manpower. Statistics shows that secondary school enrolment rates for 2010, 2011 and 2012 are 44.04%, 46.28% and 50.72% respectively. It can be concluded that a lot still needs to be done to improve the enrolment rate in the country.

Theoretical Framework

There has been emergence of different models from various experts and researchers on the concept of human capital development. However, of prominent of these models are the Solow and Lucas models of human capital development (Hansen & Prescott, 2002). Gbenga and Norhasni (2013) opine that the main components of Solow model and Lucas model of human capital development are education, health and technology. The inputs of human development are education, health and technology and the mixture of these will bring about growth in the long run (Hansen & Prescott, 2002). Solow is more oriented towards the effect of technology and education intervention on the entire population as a unit whole rather than as units. His argument is based on the fact that most people in the history of human life only

attain little above subsistence level of income (Hansen & Prescott, 2002). Solow model answers the question of why some countries are rich while some others are poor in the light of the fact that; firstly, rich countries commit more to investment in people and secondly, rich countries have a lower and manageable population growth rate. Consequently, the rich countries have more opportunity to accumulate more capital per worker and this transform to higher labour productivity (McDonald & Roberts, 2002).

Solow (1956) in his model indicated that economy only maintain growth at the rate of technology. A country can only achieve sustained and constant growth through innovation and technology driven by education (Solow, 1999). Therefore, countries have to pursue mass education and increase education stock of the entire population to bring about innovation and technology that will put the growth of the country on a steady state. Also, educational development towards human capital development at individual level is rewarded with high income earning. Therefore, it is important for both individuals and countries to fit best into the models of modern society; and education is the major tool for this (Becker & Chiswick, 1966; Gbenga & Norhasni, 2013).

Review of Empirical Studies

Adelakun (2011) conducted a study on human capital development by adopting conceptual analytical framework that employs the theoretical and ordinary least square (OLS) to analyze the relationship using the GDP as proxy for economic growth; total government expenditure on education and health, and the enrolment pattern of tertiary, secondary and primary schools as proxy for human capital. The analysis reveals that there is strong positive relationship between human capital development and economic growth. Similarly, Simon-Oke (2012) examines human capital investment and industrial productivity in Nigeria. The variables used for the study include index of industrial production as the dependent variable while the independent variables are total expenditure on education, total expenditure on

health and gross capital formation. The study observes that changes in government expenditure on education will generate increase in industrial productivity which by extension spur economic growth. The study further reveals that there exist a clear-cut and obvious relationship between human capital investment and industrial productivity but the contribution of human capital to industrial performance has been less than satisfactory in Nigeria.

Atoyebi, *et al.* (2013) empirically explored human capital development in Nigeria. The study proxy growth with real gross domestic product while the independent variables selected for the study include total expenditure, external reserve, exchange rate, student enrolment, human development indices (HDI) and regime. The co-integrating regression test conducted in the study suggests that there is a strong evidence of co-integration between real gross domestic product and human development index. Furthermore, the study revealed a long-run causal relationship between real gross domestic product and human development index. Eneji, Dickson and Bisong (2013) examined the relationship between health care expenditure, health status and national productivity in Nigeria from 1999 to 2012. In an attempt to properly capture the impact of health on productivity, the study uses the real GDP divided by the working population as a proxy for productivity. The study observes a strong relationship between health status and productivity.

METHODOLOGY

A longitudinal research design was adopted for this study. The choice of this approach was based on the need to have a long-term view of the subject matter. Nigeria served as the study population by considering some human capital development indices that influence productivity growth in the country. These human capital development indices include: government capital and recurrent expenditures on education, literacy rate and school enrolment rate as determinants of productivity growth in Nigeria using 1980 – 2013 time

series data. The study uses secondary data that were sourced from publications of National Bureau of Statistics (NBS) and Central Bank of Nigeria (CBN). These publications include: the statistical bulletin, annual report, statement of accounts, financial review of various years and other related items for the period under consideration.

Productivity growth is expressed as a function of human capital development indicators such as government capital expenditure on education, government recurrent expenditure on education, literacy rate and school enrolment rate. The model for this study is therefore stated functionally as:

$$PROD = (EDUCAP, EDUREC, RATELIT, SER) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (1)$$

Therefore,

$$PROD_t = \beta_0 + \beta_1 EDUCAP_t + \beta_2 EDUREC_t + \beta_3 RATELIT_t + \beta_4 SER_t + \varepsilon_t \dots\dots\dots (2)$$

Where:

$PROD_t$ = Productivity growth at time t

$EDUCAP_t$ = Government capital expenditure on education at time t

$EDUREC_t$ = Government recurrent expenditure on education at time t

$RATELIT_t$ = Literacy rate at time t

SER_t = School enrolment rate at time t

β_0 = constant

ε_t = Error term at time t

And a priori expectations: $\beta_1 \dots \beta_4 > 0$

Productivity was measured by dividing the real gross domestic product by working population in line with the study conducted by Eneji *et al.,* (2013) and Adekunle (2015). The rationale for this measure is to capture the contributions of the working class on the overall performance of the Nigerian economy. Government capital and recurrent expenditure on education were selected in line with the studies of Abu and Abdullahi (2010), Adelakun

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(2011), and Simon-Oke (2012). School enrolment rate was selected for analysis in the model in line with the studies of Atoyebi *et al.,* (2013). Finally, literacy rate was included in this model because literacy is considered a human capital stock variable, and in some sense it represents the outcome of the education process (Milorad, 2011).

The Augmented Dickey-Fuller (ADF) unit root test was used to identify the stationary of the time series variables. Unit root test is pertinent because a stationary series must be obtained before it can be used to specify and estimate a model (Okafor & Shaibu, 2013). Since the variables are characterized by a unit root test, long-run relational properties of the data series were analyzed using Engle-Granger two-stage procedure co-integration test. Also, diagnostic tests such as Breusch-Godfrey serial correlation LM test, heteroskedasticity test using ARCH LM approach and specification test using Ramsey RESET test were conducted to examine the usefulness and relevance of the estimated model. Finally, the error correction modeling (ECM) technique was used to analyze the relationship between human capital development and productivity growth over the specified period through the ordinary least square (OLS) framework using Econometric View (EViews 8.0). The rationale for selecting this technique is based on its flexibility and its ability to gauge the speed of adjustment of the dependent variable when it deviates from its steady state path due to uneven fluctuation in the independent variables.

PRESENTATION AND DISCUSSION OF RESULTS

This section is concerned with the presentation and analyses of data collected for this study through secondary sources. It contains the report of preliminary data analyses, model estimation and interpretation, post estimation analyses and discussion of findings.

Preliminary Data Analyses

This section entails preliminary analyses such as unit root test and co-integration test to ensure that the variables are properly screened in order to obtain reliable results from the

model specification. The Augmented Dickey-Fuller (ADF) test was used for the test of unit roots. The results are presented in levels and first difference as shown in Table 1 below:

Table 1: Unit Root Test for Variables at Levels and First Difference

Variables	Augmented Dickey-Fuller (ADF) Test				Integration	Remark
	Levels	5% ADF Critical Values	First Difference	5% ADF Critical Values		
LPROD	-10.771*	-2.9571	-45.1705*	-2.9571	I[1]	Stationary
LEDUCAP	-0.2797	-2.9571	-7.007*	-2.9571	I[1]	Stationary
LEDUREC	-0.3443	-2.9571	-5.833*	-2.9571	I[1]	Stationary
RATELIT	0.2494	-2.9571	-7.0499*	-2.9571	I[1]	Stationary
SER	0.3361	-2.9571	-3.2771**	-2.9571	I[1]	Stationary

* & ** connote variables are significant at 0.01 and 0.05 respectively

The results indicate that using the Augmented Dickey-Fuller (ADF) test, only the logarithm of productivity is stationary at level. Other variables are not stationary at level. To avoid running a spurious regression, the test was carried out at first difference. The results revealed that all the variables are stationary at first difference at 1% level of significance except for school enrolment rate that is significant at 5%.

A co-integration test which is based on the argument that given that time series have unit roots; a long-run relationship exists between a linear combination of such series was conducted through the Engle-Granger two-stage procedure. Since the residuals turn out to be stationary which shows that the specified model has a long-run relationship, an Augmented Dickey-Fuller (ADF) test was conducted on the residuals. The co-integration test result is shown in Table 2 below:

Table 2: Result of Engle-Granger Co-Integration Test

Variable	Augmented Dickey-Fuller (ADF) Test		Integration	Remark
	At Level	5% ADF Critical Values		
Residual	-8.8819*	-2.9571	I[0]	Co-Integrated

* Connotes variable is significant at 0.01

The results of the co-integration test as reported in Table 2 above show that ADF test statistic value of -8.8819 is significant at 1%. This clearly indicates that the residuals are stationary. Finally, it can be adduced from the above results that there is co-integration among productivity and human capital development indices such as government capital and recurrent expenditures on education, literacy rate and secondary school enrolment rate.

Model Estimation and Interpretations

This section deals with the presentation and interpretation of the results of the model specified for this study. The results are presented in Table 3 below

Table 3: Parsimonious Regression Estimates
Dependent Variable: D(LPROD)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.0452	0.0127	-3.5591	0.0015
D(LEDUCAP)	-0.0184	0.0085	-2.1647	0.0398
D(LEDUREC(-1))	0.0258	0.0114	2.2632	0.0322
D(RATELIT(-1))	0.0027	0.0005	5.4000	0.0000
D(RATELIT(-2))	0.0012	0.0105	0.1143	0.9099
SER	0.0034	0.0014	2.4286	0.0224
D(SER(-1))	0.0121	0.0027	4.4815	0.0001
D(SER(-2))	0.0028	0.0018	1.5556	0.1319
ECM(-1)	-0.2511	0.0430	-5.8395	0.0000
R-squared	0.7982	F-statistic		12.3606
Adjusted R-squared	0.7410	Prob(F-statistic)		0.0000
Observations	34	Durbin-Watson Stat		2.2065

The estimation results reveal that the explanatory variables jointly account for 0.7982 systematic changes in productivity growth. This implies that approximately about 80% of the systematic and dynamic variation in productivity growth was explained by the explanatory

variables and their lagged values included in the model. This when adjusted for degree of freedom based on the adjusted coefficient of determination (Adjusted R-Square) shows that the model has 74% explanatory power with respect to variations in productivity growth in Nigeria. The Durbin Watson statistic of 2.2065 illustrates the absence of auto correlation. The F-statistic that measures the overall statistical significance of the regression model shows that the model is statistically significant at 1% level (F-value = 12.3606, and p-value = 0.0000). This implies that the model is statistically different from zero. Table 3 also presents the error correction model (ECM) result. The result obviously shows that ECM coefficient is correctly signed (negative as expected) given as -0.2511 implying that in the long run about 25% of the disequilibrium could be corrected in each period (year). The ECM coefficient is also significant as evident by its probability value of approximately 1%.

School enrolment rate (SER) has a positive and significant impact on productivity growth in Nigeria at $p<0.01$. The result shows that a unit increase in school enrolment rate (SER) will lead to 0.0034 increase in productivity growth. In the short run, expected government capital expenditure on education, government previous year (first lag) recurrent expenditure on education, previous year (first lag) literacy rate and school enrolment rate are statistically significant at probability value of 5%. The coefficients of government recurrent expenditure on education in the previous year (first lag), literacy rate in the previous years (first and second lags) and school enrolment rate in previous years (first and second lags) show positive relationship with productivity growth in Nigeria. However, the coefficients of government capital expenditure on education show negative impacts on productivity growth for the sampled period.

Post Estimation Analyses

This section examines the usefulness and reliability of the estimated models by conducting diagnostics tests. Basic diagnostic tests such as serial correlation test,

heteroskedasticity test and test for specification error were conducted. The results are shown in Table 4 below:

Table 4: Diagnostic Tests

S/N	TEST	F-Statistic	P-Value
1	*Serial Correlation Test:* Breusch-Godfrey Serial Correlation LM Test	0.0408	0.9605
2	*Heteroskedasticity Test:* ARCH LM Test	1.2365	0.2759
3	*Specification Test:* Ramsey RESET Test	0.9757	0.3792

The serial correlation test was conducted using Breusch-Godfrey (B-G) Serial Correlation LM Test. From the B-G results, the hypothesis of zero autocorrelation in the residuals was not rejected. This was because the probability value of 0.9605 is greater than 5%. Therefore, the Breusch-Godfrey serial correlation LM test did not reveal serial correlation problems for the model. Also, ARCH LM test was conducted to test for heteroskedasticity. The result shows probability of 0.2759 which is in excess of 0.05. This leads to the rejection of the presence of heteroscedasticity in the residuals. Scholars have argued that various specification errors such as omitted variables, incorrect functional form, high correlation among independent variables and the error term, give rise to non-zero error term vector (Johntson & Dinardo, 1997), hence the need for Ramsey RESET test. The test was performed to determine whether there were specification errors. The result showed high probability value of 0.3792 that is greater than 5%. This implies that there is no significant evidence of miss-specification. Summarily, the diagnostic tests reveal that the residuals are serially uncorrelated and homoskedastic based on Breusch-Godfrey serial correlation LM test and ARCH LM test respectively. It can therefore be deduced that the model is valid and can be used for policy making without re-specification.

Discussion of Findings

First, the study reveals that government capital expenditure on education significantly impact on productivity growth in Nigeria. However, this relationship is negative. It is disheartening to note that the coefficient of government capital expenditure on education is negative as revealed by this study. However, the result may not be surprising as the system is highly bedeviled by corruption. Funds meant for the development of the education sector have not been properly utilized and in most cases embezzled thus precipitating the incessant strike by Academic Staff Union of Universities (ASUU), Academic Staff Union of Polytechnics (ASUP), National Union of Teachers (NUT), among others. This finding is in consonance with the result of the study conducted by Abu and Abdullahi (2010) on government expenditure and economic growth. This finding of negative but significant relationship between government capital expenditure on education and productivity growth disagrees with the outcome of Simon-Oke (2012) study on human capital investment and industrial productivity in Nigeria. The study of Simon-Oke (2012) shows that a positive but not significant relationship exists between government expenditure on education and industrial productivity. This study also reveals that a positive and significant relationship exists between government recurrent expenditure on education and productivity growth. The reason for this may be because of immediate benefits accruable by these expenses in form of payment of salary, staff training and development, among others. Summarily, it is imperative to emphasize that government commitment to education is critical and pivotal to productivity growth as education has been adjudged as the major determinant of human capital development (Ishola & Alani, 2012; Mathew, 2012; Odeleye, 2012).

Literacy rate positively and significantly impact on productivity growth in Nigeria. This is in agreement with the Nigerian government recognition that literacy education will help equip individuals with the knowledge, skills and attitudes needed for economic self-

sufficiency, poverty reduction and sustainable development, and is therefore making efforts to address the illiteracy challenge (UNESCO, 2012). School enrolment rate positively and significantly impact on productivity growth in Nigeria. Recognising the contribution of school enrolment to the growth of an economy and keeping in line with the human capital investment revolution, the government of Nigeria needs to increase its public expenditure spending on education. This finding is consistent with the results of the studies carried out by Bills and Klenow (2000) and Mathew (2012) that schooling is positively correlated with the growth rate of per capita gross domestic product. However, this finding negates the outcome of the study by Olatunji, Odeleye and Olunkwa (2014) on human capital investment and economic development that found that the secondary school enrolment has a negative and insignificant effect on per capital gross domestic product.

CONCLUSION AND RECOMMENDATIONS

This study has attempted to identify the human capital development factors that influence productivity growth in Nigeria. The study insightfully explores human capital development and productivity growth by reviewing some previous studies that have been conducted. It was revealed that government capital and recurrent expenditure on education, literacy rate and school enrolment rate have significant impact on productivity growth. However, government capital expenditures on education negatively related to productivity growth. We conclude that issues discussed in this study are of optimum importance to the growth of the Nigerian economy depending on how well policy makers approach them.

On the basis of the findings of this study, it is therefore recommended that government should increase not just the amount of expenditure made on the education sector but also the percentage of its total expenditure accorded to the sector. Effective reform and due process are required to guide the disbursement and control of funds for capital projects in the education sector. Also, collaborative approach whereby educational institutions and the

players in the industrial sector are jointly responsible for designing educational curricula that will reflect organizational realities should be adopted. Curricula review on a periodic basis to ensure feedback between the market and the educational institutions must be carried out. Joint efforts should be promoted among researchers in the public, academic and private sectors. Finally, government at all levels should ensure that fund are made available for researches and ensure that such funds are properly disbursed and utilized.

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