

AN EMPIRICAL INVESTIGATION OF THE CONTRIBUTION(S) OF AGRICULTURE, PETROLEUM (SECTORS) AND DEVELOPMENT OF HUMAN CAPITAL (DEVELOPMENT) TO THE ECONOMIC GROWTH IN NIGERIA, 1970-2012.

Abstract

An empirical investigation of the contribution(s) of agriculture, petroleum, human capital to the economic growth in Nigeria were carried out in this paper by employing cointegration test, Granger causality test and ordinary least square techniques, using the data of annual time series (annual time-series data) for the period 1970-2012. The findings reveal (revealed) the existence of 3 cointegrating vectors (in the series used,) which show a long-run relationship among the variables in the series used. (showing existence of long-run relationship between the variables.) The Granger causality test shows that there is (were) a bi-directional causality among (between) the variables. The OLS results show that agriculture and petroleum (positively and significantly) contribute to output growth positively and significantly, while human capital (negatively but insignificantly) contributes (contribute) to output growth negatively but insignificantly. Thus, if a policy aims at sustaining (objective is to sustain) a high rate of economic growth in Nigeria, the priority should be given to the development of human capital in the budgetary and development policies. (then human capital development should be given a pride of place in our budgetary and development Policies). (The) An effective coordination of these variables and a good policy mix (on these variables) to avoid lopsidedness will (would) ensure a high and sustainable economic growth since there is a (as there was) bi-directional causality between these variables.

Keywords: Investigation, sustainable growth, cointegration, causality, policy-mix.

INTRODUCTION

1.1 Background of the study

The contribution of the agricultural sector to the economy cannot be over emphasized when (considering) its role in building grounds for development, its employment potentials and financial impacts on the economy are considered. Apart from laying solid foundation for the economy, it also serves as an import substituting sector, providing a ready market for raw materials and intermediate goods (Ademola et al 2013). It has been noted that problems of the Nigerian economy include (problems to the economy of Nigeria includes) , no comma here downturn of the global oil market of the early 1980s, sharp decline in foreign exchange earnings, excessive dependence on imports for consumption and capital goods, dysfunctional social and economic infrastructure, unprecedented fall in the rate of capacity utilization (capacity utilization rate) in industry, neglect of the agricultural sector and the global financial crisis that rocked the world economies by creating “ripple effect”. (on Nigeria economy) These have resulted in fallen incomes and devalued standard of living among (amongst) Nigerians. Agriculture was the leading sector in the pre-oil boom era, contributing 63 and 54 percents to GDP in the 1950s and 1960s respectively (Aigbokhan, 2001). The sector’s share in gross domestic product (through) fell in the post-oil boom period, maintained, yet, persistent increase. - What does this mean? Do you want to say it fell and stayed there?) For instance, (between 1970 and 1980,) the share of agriculture in real gross domestic product (RGDP) in Nigeria averaged 29.2% between 1970 and 1980 ; it was 33.3% between 1980 and 2000, no comma here and 41.2% between 2001 and 2009 (Computed from the CBN Statistical Bulletin 2010). Agriculture also employs a majority of the Nigerian labour force which is 65 %. (– 65 percent) (Emeka, 2007). Agricultural sector contributes to the development of an economy in four major ways that are contribution to

product, factor, market as well as foreign exchange. (: product contribution, factor contribution, market contribution and foreign exchange contribution) (Mackie 1964; Abayomi 1997; Abdullahi 2002). It is estimated to be the largest contributor to non-oil foreign exchange earnings in Nigeria. (In Nigeria, it is estimated to be the largest contributor to non-oil foreign exchange earnings.) This means that agriculture holds abundant potential for enhancing and sustaining the country's foreign exchange (Iganiga & Unemhilin, 2011).

Change in the structure of the Nigerian (Nigeria) export composition was not until 1970 with the new entrant oil. – Something is missing in the meaning of this sentence. The petroleum sector brought about fundamental changes in the Nigerian economy. Increased dependency on the oil sector had brought mixed feedings- What does “feeding” mean here? by the Nigerian government when it became the life line of the economy so that all sectors of the economy suffered the shock waves. (due to increase dependence such that all sectors of the economy suffered the shock waves.) The prevalent opinion of “... governmental economic policies seemed to be dominated by the mentality that money was not our problem” (Marinho, 1984: p. 23) had brought crises to the Nigerian economy over the past 46 years due to continuous dependence on petroleum. For instance, the crisis in 1985 brought economic emergency measures that culminated to the structural adjustment programme in 1986 while a drastic fall in the oil price in 2009 brought more adjustments.

(According to Marinho, a former NNPC managing Director, “... government economic policies seemed to be dominated by the mentality that money is not our problem” (Marinho, 1984: p. 23) had brought crises in the Nigerian economy over the 46 years due to the continuous dependence on the sector- for instance the crisis in 1985 brought economic emergency measures that culminated to the structural adjustment programme (SAP) in 1986, to the most recent adjustments due to a drastic fall in the oil price in the 2009 budget.) The economic slowdown brought (about) by the global financial crisis reduced (dented) the growth of petroleum demand (petroleum demand growth), resulting in (to) a fall in oil price. These trends in the oil sector have plagued all sectors of the Nigerian economy.

The hope for reviewing Nigerian economy seems to lie on good policies aimed at diversifying the economy. The good policies can only be made by well-trained people (human being). Therefore, the development of human capital (human capital development) is central to achieve (achieving) the economic growth and sustainable development in any nation. It has been found that, no comma here there is a strong positive relationship between the development of human capital (human capital development) and economic growth in Nigeria (Adelakun, 2011). However, the illiteracy rate in Nigeria is still high and many workers are still unskilled, no comma here. There is a large number of unemployed graduates and this situation leads to a low productivity in the economy. (despite the large number of graduates' unemployed, leading to low productivity in the economy.) The development of Nigerian human capital (Nigerian human capital development) and capacity utilization are besieged (sector is besieged) with many problems, a comma here such as the content of the training programme, paper qualification criteria, no comma here and federal character principles in employment and attitude to work.

This paper aims at (empirically,) finding out the contribution(s) of agriculture, petroleum (sector) and development of human capital (human capital development) to the economic growth in Nigeria empirically. The finding will be important (of significance) to policy makers both in analysing (policy markers analysts) and (in) determining the best policy mix in these three sectors of the economy.

This paper is organized into five sections: Section one comprises the introductory background of the study. Section two covers the theoretical framework and literature review. Section three gives information about (talks about) the research methodology while section four deals with (on) presentation, interpretation and discussion of results. Section five covers the summary of findings, policy implications and policy recommendations.

2.0 THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.1 Theoretical framework

Agriculture involves the cultivation of land, the raising and rearing of animals for the purpose of food production (production of food) for man, feed for animals and raw materials for industries. In its broadest sense, agriculture comprises the entire range of technologies associated with the production of useful products from plants and animals, including the cultivation of soil, the management of crop and livestock (soil cultivation, crop and livestock management), no comma here and the activities of processing and marketing. The role of agriculture in reforming both the social and economic framework of an economy cannot be over-emphasized. It is a source of food and raw materials for the industrial sector. It is also essential for the expansion of employment opportunity, for reduction of poverty, no comma here and improvement of income contribution, for speeding up industrialization and easing the pressure on balance of payments (Nwankwu, 1981 cited in Aminu and Anono, 2012). According to Reynolds (1975), agricultural development can promote economic development of the underdeveloped countries in four different ways (i) by witnessing the supply of food available for domestic consumption and referring the labour needed for industrial development, (ii) by enlarging the size of domestic market for the manufacturing sector, (iii) by increasing the supply of domestic savings and (iv) by providing the foreign exchange earned by agricultural exports.

A new paragraph starts here: Nigerian economy (during the first decades after independence) can (could) reasonably be described as an agricultural economy because agriculture served as the engine of growth of the overall economy during the first decades after independence (Ogen, 2003: 231-234). (During this period,) Nigeria was the world's second largest producer of cocoa, largest exporter of palm kernel and largest producer and exporter of palm oil during this period. Nigeria was also a leading exporter of other major commodities such as cotton, groundnut, rubber, no comma here and animal hides (hides and skins) (Alkali, 1997: 15-16). The agricultural sector contributes to over 60% of the GDP in the 1960s. Despite the fact that Nigerian peasant farmers relied on traditional farm implements and indigenous farming methods, they produced 70% of Nigeria's exports and 95% of its food needs. (and despite the reliance of Nigerian peasant farmers on traditional farm implements and indigenous farming methods; they produced 70% of Nigeria's exports and 95% of its food needs) (Lawal 1997: 195). However, the agricultural sector now accounts for less than 5% of Nigeria's GDP (Olagbaju and Falola, 1996: 263). The neglect of the agricultural sector and the dependence on a mono-cultural crude oil-based economy has not augured well for the well-being of the Nigerian economy. Development economists have focused on how agriculture can best contribute to overall economic growth and modernization. (For the 93 physiocrats they believe that) A group of physiocrats believes that the fate of the economy is regulated by the productivity in agriculture and its surplus is diffused throughout the system in a network of transactions. According to another study, the underdeveloped economies consist of two sectors which are the traditional, agricultural sector and the modern, industrial sector. (Todaro and Smith-2003) (Todaro and Smith (2003), discussing Lewis theory of development, assume that the underdeveloped economies consist of two sectors. These sectors are the traditional agricultural sector and the modern industrial sector. They argue that,) If development is

to take place and become self-sustaining, **a comma here** it will have to include the rural area in general and the agricultural sector in particular. **It becomes pertinent to examine the contribution of agricultural sector vis-a-vis petroleum sector as well as the development of human capital so that a good policy mix for Nigeria to achieve the vision of becoming one of the 20 industrialized nations of the world in 2020 is ensured. (In the era of global food scarcity and need for self-sustaining economic growth and development it becomes pertinent to examined the contribution of agricultural sector vis-à-vis petroleum sector and human capital development to ensure a good policy mix to make Nigeria achieve her proposals in the vision 2020 to become one of the 20 industrialized nations of the world.)** To realize this vision, priorities have to be placed on these, **a comma here** three vital sectors of the economy.

Petroleum sector became the major contributor to GDP **(since)** after the discovery of oil at Oloibiri in Niger Delta **(and)** in commercial quantity in 1950s. **(In 1961,)** The Federal Government of Nigeria issued ten oil prospecting licenses on the continental shelf to five companies **in 1961**. Each license covered an area of 2, 560 square kilometers and was subject to the payment of #1m. **(With these generous concessions,)** Full-scale on-shore and off-shore oil exploration began **with these generous concessions**. (Aminu and Anono, 2012). Since **then (after that), the** mining sector **and especially petroleum** became the mainstay of the Nigerian economy **(,especially petroleum.)** The petroleum sector contributed **almost (amost)** 40% to GDP on average. **(In 1990,)** It contributed **to** 37.46% **in 1990, (in 2000, it contributed)** **to** 48.19% **in 2000** but its contribution decreased to 29.62% in 2009. The decline can be attributed to many factors, **such as (for instance) the** emphasis given to agriculture with the current global food crisis and the need to diversify Nigeria's export base. A good policy mix is essential to avoid undue emphasis to one sector.

A new paragraph starts here: Human capital refers to the abilities and skills of human resources and **the development of human capital (human capital development)** refers to the process of acquiring and increasing the number of **people (persons)** who have the skills, education and experience which are critical for the economic growth of the country (Harbison, 1962). **As a country,** Nigeria **(as a country)** is immensely endowed both in natural and human resources. The primary focus of Nigeria has been to find a way to accelerate the growth rate of national income and to engage in structural transformation of her subsistence and resource based economy to a production and consumption based economy in order to break the cycle of poverty, **no comma here** and low productivity. This can only be achieved through adequate **development of human capital (human capital development process) headed towards (geared towards) the** right sizing **both in quality and quantity since the agriculture and petroleum sectors, which are the mainstay of the Nigerian economy, need human capital. (both in quality and quantity the human capital needs in agriculture and petroleum sectors as the mainstay of Nigerian economy.)**

2.2 Empirical literature

A study conducted by Muhammad and Atte (2006) on the **agricultural production (production of agriculture)** in Nigeria, **no comma here** revealed that **the coefficient of the value of food imports was negative (-0.17). (there was negative coefficient of the value (-0.17) of the food imports.) This situation is interpreted as the increases in food imports decrease the domestic agricultural production (It was interpreted that as food import increases, domestic agricultural production decreases. They attributed it to the fact that) since** food importation exposes the local farmers to unfair competition by foreign producers who usually take advantage of economies of **scale (scales)** in production due to their access to better production technology. Most studies reveal that agricultural sector contributes to the growth of GDP but the trend of growth has been fluctuating over the years [Awe (2009), Suleiman and Aminu (2010), Oji-Okoro (2011)]. The contribution of agriculture to GDP

which was 63% in 1960, **no comma here** declined to 34% in 1988 as a result of neglect of agricultural sector (Ekpo and Umoh, 2012). Equally, **another study analysing the contribution of both agriculture and petroleum to the growth and development of Nigerian economy reveals that the contribution of the agricultural sector is higher than that of the petroleum sector though both sectors have a positive impact on the economic growth and development. (Aminu and Anono- 2012) (a study by Aminu and Anono (2012) using a time series data covering 1960-2010, on analysis of the contribution of agriculture and petroleum sector to the growth and development of the Nigeria economy reveal that agricultural sector contributes higher than the petroleum sector, though they both possessed a positive impact on economic growth and development of the economy.)** However, agricultural sector suffered neglect during the hey-days of the oil boom in the 1970s (Olajide, Akinlabi and Tijani 2012). The agricultural sector accounted for less than 5% of Nigeria's GDP in 2004 (Ogen, 2007). In **modelling (modeling)** life expectancy against **agricultural (agriculture)** output and agricultural expenditure, **no comma here among (amongst)** other variables, **(Chukwuma and Uju (2013)) it is found in a study that agricultural output has a negative and significant impact on life expectancy in Nigeria. (They conclude that as much as) Even though** agriculture may matter for economic development, reliance on the sector alone without corresponding and simultaneous development of other crucial sectors, **a comma here** such as education, health and industry will not yield positive fruits for economic development in Nigeria. **(Chukwuma and Uju (2013) Moreover, there are similar studies on the same issue. For instance, another study, which uses the GDP as a proxy for economic growth, total government expenditure on education & health and the enrolment pattern of tertiary, secondary and primary schools as a proxy for human capital, puts forward a strong relationship between the development of human capital and economic growth. Due to the fact that equipment and technology are products of human mind and can only be made productive by people, the success of any productivity programme depends on the innovative ideas and creativity of humans. (Adelakun, 2011).**

(Adelakun (2011) adopted 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, found that there is strong positive relationship between human capital development and economic growth. This is evidence on the fact that equipment and technology are products of human minds and can only be made productive by people. The success of any productivity programme depends on human innovative ideas and creativity (Adelakun, 2011).)

3.0 Data and method of analysis

Data

The data used for this study are **the** time series **(data)** covering 1970-2012 **period** and **are obtained (were sourced)** from **the Statistical Bulletin of Central Bank of Nigeria (CBN). (Central Bank of Nigeria (CBN) Statistical Bulletin.)**

3.1 Method of analysis

This paper made use of econometric procedure in estimating the relationship between the variables. The Ordinary Least Square (OLS) technique was employed in obtaining the numerical estimates of the coefficients of the equation. The Augmented Dickey-Fuller (ADF) and Philips-Perron (PP) tests were used to test the stationarity of the variables. **Equally, co-integration of the variables using Johansen procedure to test the existence of long-run equilibrium (stationary) relationship among the economic variables.- This sentence is**

incomplete. What does it mean? (Also, we) We also employed the Granger causality test to establish the causal relationship of the variables.

A new paragraph: The OLS method was chosen because it **has (possesses)** some optimal properties; its computational procedure is fairly simple and it is also an essential **component (components)** of most **of** other estimation techniques. In demonstrating the application of Ordinary Least Square method, the multiple linear regression analysis was used **where (with)** the GDP, **agriculture, petroleum and development of human capital (human capital development) (as) were** the relevant variables. The GDP was used as the dependent variable while the agricultural output, petroleum output and Federal Government expenditure on **the development of human capital (human capital development are) were** the independent variables. The selection of this method was justified because the data were a time series **(data)** and all time series data exhibit a random walk.

3.2 Model specification

This paper employed a multiple linear regression function of the form.

$$GDP = f(AGO, HCD, PET) \text{-----} (1)$$

Where;

GDP = Gross domestic product

AGO = Agricultural output

HCD = **Development of human capital (Human capital development)** as a proxy for Federal Government expenditure on education and health

PET = Petroleum output

The model is expressed in a mathematical equation as

$$GDP = b_0 + b_1AGO_t + b_2HCD_t + b_3PET_t + U_t \text{---} (2)$$

EMPIRICAL RESULTS AND DISCUSSION

4.1 Unit Root Test

We first tested if the relevant variables in equation (2) **were (are)** stationary **as well as (and) determining (to determine)** their orders of integration. We used both the Augmented Dickey-Fuller (ADF) and Philips-perron (PP) tests to find the existence of unit root in each of the time series. The result of both the ADF and PP tests are presented in table 4.1.1.

Time series Variables	ADF (Intercept and Trend)	PP (Intercept and Trend)	1% Level	5% Level	10% Level	Order of integration
GDP	-14.82244 -----	-14.82244 -----	-3.605593 -3.605592	-2.936942 -2.936942	-2.606857 -2.606857	1(2)
AGO	-7.254904 -----	-15.57202 -----	-3.610453 -3.605593	-2.938987 -2.936942	-2.607932 -2.606857	1(2)
HCD	-7.358813 -----	-8.945466 -----	-3.605593 -3.605593	-2.936942 -2.936942	-2.606857 -2.606857	1(2)
PET	-6.922904 -----	-12.37523 -----	-3.615588 -3.605593	-2.941145 -2.936942	-2.609066 -2.606857	1(2)

Note: Mackinnon (1996) one-sided P-values and critical value for rejection of hypothesis of unit root **were** applied.

Source: Authors' estimation using E-views 7.0

The above table (4.1.1) reveals that all the **variables of time series (time series variable) are (were)** stationary at a second difference. **On the basis of this fact, the null hypothesis of non-stationary is rejected and it is safe to conclude that the series are stationary. (,on the basis of this, the null hypothesis of non-stationary is rejected and it is safe to conclude that the series are stationary.)** This **also** implies that the variables are integrated of order two, i.e, 1(2).

4.2 Cointegration test result

Having confirmed the stationarity of the variables at 1(2), we proceeded to examine the presence or non presence of cointegration among the variables. When a cointegration relationship is present, it means that **gross domestic product (GDP)**, **agricultural output (AGO)**, **development of human capital (Human capital development) (HCD)** and **petroleum output (PET)** share a common trend and long-run equilibrium as suggested theoretically. We started the cointegration analysis by employing the Johansen and Juselius multivariate cointegration test.

Table 4.2.1 and 4.2.2 show the results of the cointegration test. **(In the tables) Both the** trace statistic and maximum Eigen value statistic indicate three (3) cointegrating equations at the five percent (5%) level of significance, suggesting that there is **a cointegration or long-run relation (relations) among (between) the variables (so) tested in the tables.**

Table 4.2.1: Unrestricted cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace statistic	0.05 critical value	Prob.**
None*	0.0832384	129.4259	47.85613	0.0000
At most 1*	0.530795	56.19663	29.79707	0.0000
At most 2*	0.426530	25.17133	15.49471	0.0013
At most	0.056241	2.373281	3.841466	0.1234

Trace test indicates 3 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' Estimation using E-views 7.0.

Table 4.2.2: Unrestricted cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen statistic	0.05 critical value	Prob.**
None*	0.832384	73.22924	27.58434	0.0000
At most 1*	0.530795	31.02530	21.13162	0.0015
At most 2*	0.426530	22.79805	14.26460	0.0018
At most 3	0.056241	2.373281	3.841466	0.1234

Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level.

* denotes rejection of the hypothesis at the 0.05 level

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

Sources: Authors' Estimation using E-views 7.0

The results in the tables 4.2.1 and 4.2.2 were achieved after **the** sample **was** adjusted from 1970 to 1972-2012, i.e **by including (included)** 41 observations with linear deterministic trend assumption and lags interval (in first differences) 1 to 1 in the series.

4.3 Granger Causality Test Result.

Table 4.3.1: Pairwise Granger causality tests

Null Hypothesis	Obs	F-statistic	Prob.
AGO does not Granger cause GDP	41	3.02958	0.0608
GDP does not Granger cause AGO		4.65671	0.0159
HCD does not Granger cause GDP	41	3.34674	0.0464
GDP does not Granger cause HCD		1.33898	0.2749
PET does not Granger cause GDP	41	11.7463	0.0001
GDP does not Granger cause PET		2.19005	0.1266
HCD does not Granger cause AGO	41	6.68060	0.0034
AGO does not Granger cause HCD		2.89282	0.0684
PET Does not Granger cause AGO	41	14.1195	3. E- 05
AGO does not Granger cause PET		9.53971	0.0005
PET does not Granger cause HCD	41	2.08540	0.1390
HCD does not Granger cause PET		6.60303	0.0036

Source: Authors' Estimation using E-Views 7.0

According to the result obtained from the Granger causality test as shown in table 4.3.1, **a comma here** there **is (are)** bi- directional causality between **agricultural outputs (AGO)** and **gross domestic product (GDP)** , **no comma here and** between **petroleum output (PET)** and **gross domestic product**. It suggests that the null **hypotheses (hypothesis) of (that)** “AGO does not Granger cause GDP” and “GDP does not Granger cause AGO” are rejected, which indicates that causality runs from either directions.

Equally, the result indicates that there **is (are)** bi-directional causality between **HCD** and **AGO**, between **PET** and **AGO**, **no comma here** and between **PET** and **HCD**. These results **are (were)** statistically significant for the data samples. On the other hand, the result also shows that causality runs from **HCD** to **GDP** but does not significantly run from **GDP** to **HCD**.

Based on these results, we can conclude that the **(government)** budgetary policy **of the government**, which **will (would)** increase **the development of both the** human capital and **petroleum sector (development)**, **in addition to the improvement of agricultural output, (agricultural output improvement and petroleum sector development,)** should be pursued.

4.4 Ordinary least square Result

The multiple linear regression equation based on ordinary least square method shows the model as

$$GDP = 27321.01 + 2.65(AGO) - 64.64(HCD) + 0.11(PET)$$

$$S.E = (113274.8) (0.24) (39.45) (0.02)$$

$$t^* = 0.24 \ 10.85 \ -1.64 \ 4.99$$

$$Prob. = 0.81 \ 0.00 \ 0.11 \ 0.00$$

$$R^2 = 0.9964$$

$$DW = 1.17$$

From the results above, the regression coefficients of **agricultural outputs (AGO)**, **development of human capital (human capital development)** (**HCD**) and **petroleum output (PET)** **are (were)** 2.65, -64.64 and 0.11 respectively. The results shows that **AGO** and **PET** **(positively and significantly)** contribute to **GDP positively and significantly** with t-statistic values of 10.85 and 4.99 respectively. **On the other hand, (While,)** **HCD (negatively and insignificantly)** contributes to **GDP negatively and insignificantly** with -64.64 coefficient and -1.64 t-statistic value. The computed coefficient of determination ($R^2_{234} = 0.9964$) shows that 99.64% of the total variations in the dependent variable (**GDP**) **are accounted (is accounted)** for by the variations in the explanatory variables, **namely AGO, DHC, PET (-agricultural output, human capital development and petroleum output,)** while 0.35% of the total variation in the **GDP** is attributable to the influence of other factors not included in the regression model.

5. Summary of findings, policy implications and policy recommendations

This paper has empirically attempted to investigate the contribution(s) of agriculture, petroleum and **development of human capital (human capital development)** to the economic growth in Nigeria by employing cointegration, Granger-causality test and Ordinary Least Square technique, using **the data of annual time series (annual time series data)** for the period 1970-2012. The Johansen multivariate cointegration test indicates 3 cointegrating equations, showing **(that there is) a** long-run relationship between agriculture, petroleum, human capital and output in Nigeria. The Granger causality test shows that there **is (were)** bi-directional causality **among (between)** the variables. The OLS results show that agriculture and petroleum **(positively and significantly)** contribute to output growth **positively and significantly**, while **the contribution of** human capital **(negatively but insignificantly contribute)** to output **is negative but insignificant**.

The results suggest that output growth can be enhanced through agriculture and petroleum sectors and **the development of human capital needs (that human capital development need)** urgent attention for its impact to be positively felt **on (in)** the economy.

Thus, if **(a policy) the** objective **of a policy** is to sustain **a** high rate of economic growth in Nigeria, **(then) the priority should be given to the development of human capital in the budgetary and development policies. (human capital development should be given a pride of place in our budgetary and development policies.) (The) An** effective coordination **of these variables** and **a** good policy mix **(on these variables)** to avoid lopsidedness **will (would)** ensure high and sustainable economic growth.

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