INTERNATIONAL JOURNAL OF SUSTAINABLE DEVELOPMENT

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ISSN: 2384-5341 | Volume 12, Issue 2 | August, 2019 | pages 59 – 76

Double Blind Peer Reviewed International Research Journal

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Special Issue Theme: "**Sustainable Development in Nigeria**"

International Journal of Sustainable Development
ISSN: 2384-5341 | Volume 12, Issue 2 | August, 2019 | pages 59 – 76
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Abstract: *This study analyzed the effects of effective developmental strategies on the real sector productivity for sustainable development of the Nigerian economy. The study employed the use of time series data spanning the years 1981 to 2017 covering a period of 37 years. Developmental Strategies for the real sector were proxied in the study with the ease of doing business rating for Nigeria; banks' credit to the private sector, Nigeria electric power consumption; government capital expenditure and green growth economy, whereas the real sector yearly output was used for the real sector. The study adopted the OLS Multiple Regression Analysis to analyze the data. Secondary data on the variables under study were gotten from the CBN Statistical Bulletin and the World Bank Database. The result of the study indicated that there is a significant relationship between developmental strategy variables collectively and the real sector within the periods under review. Whereas one of the variables, GRGEC exerted positive insignificant effect on the real sector, EDB, CPS, NEPC, and GCEXP were found to exert positive significant effects on the real sector productivity. The unit root test revealed that all the variables of the study are integrated at first difference. The cointegration test indicated that there is a long-run relationship between the variables of the study. The granger causality test indicated that there is a causal link between two lag periods of real sector output and developmental strategy instruments in varying cases. The test further established a bi-directional causal link from developmental strategies to real sector development and vice versa. The study concluded that the real sector is a strategic component of an economy because it produces and distributes tangible goods and services required to satisfy aggregate demand in the economy. The study recommended that there should be a redirect of fiscal policy measures towards the development of the real sector.*

Key words: *Real Sector Productivity, Sustainable Development, Nigeria Economy.*

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1.1 INTRODUCTION

Science policy interfaces refers to the many ways in which scientists, policy-makers, economists and other stakeholders in an economy link up to communicate, exchange ideas and jointly

develop knowledge to enrich policy and decision making processes and research, to enhance the growth and development of an economy (Young *et al*., 2013). Policymakers are exposed to abroad range of analyses, rankings, and advice concerning emerging issues, prepared from a multitude of perspectives (GSDR, 2016).

The broad scope of sustainable development suggests that virtually any social, economic or environmental process or challenges amenable to scientific understanding may potentially be relevant. Emergency meanwhile could signify the novelty or intensification of some of those issues, fresh understanding of their causes or consequences, the development of new management options, or the identification of issues that have gone previously unrecognized.

In a bid to attain and sustain the Millennium Developmental Goals (MDGs) of 2005, the Nigerian government introduced the NEEDS which was complemented by the seven point Agenda (SPA) introduced in 2007; and in furtherance, Nigeria Vision 20 2020 on which emerging issues for sustainable development of the Nigerian economy were elucidated (FGN, 2007).

Pertinent among these emerging perspectives for sustainable development of the Nigerian economy, is the development of the Real Sector. Besides, strategies to actualizing real sector development were also clearly captured, which include encouraging massive investment in infrastructure and human capital and creating enabling environment for domestic and private investment; deepening the financial sector and sustaining its stability to enable it to finance the real sector; raising the relative competitiveness of the real sector, to increase the demand for Nigeria's non-oil products and services; among others (NPC, 2009).

According to Sanusi (2011) in Adensi and Aluko (2015), the real sector is where production of goods and services take place through the combined use of raw materials and factors of production and it is the driving force of the economy. The output of the real sector indicates the level of productivity in the economy. When the production capacity of the real sector increases, the economy experiences growth. In order to ensure that the real sector operates efficiently and effectively, there must be an efficient financial sector to support it, and favourable government policies that will engender the sectors' growth (Sanusi, 2011) concluded.

Oyewo and Badejo (2014) defined sustainable development as the utilization of resources to meet the economic, social and environmental needs of human, such that the interest of the present and future generation is served. By the ongoing reckoning, this study is examining whether attention to developing the Nigerian real sector through the provisions of basic infrastructure, access to financial credit, provision of conducive/investment friendly environment, among others, as effective developmental strategies will bring about sustainable development in Nigeria.

1.2 Statement of the Problem

Despite the size and fast pace of economic growth in the Nigerian economy over the last decade, the real sector remains weak as it has not attained its optimal productivity irrespective of the sectors developmental roles in an economy. Past policy efforts aimed at improving the performance of the sector failed, resulting into focus shift towards more targeted policies aimed at developing specific sectors of the economy. Currently, attention is redirected towards the development of the real sector as a precursor to sustainability of the Nigerian economy as contained in the NV 20: 2020 (NPC, 2009). The extent to which the outlined strategies have gone in achieving this target of enhancing productivity of the real sector, for sustainable national

development, calls for investigation. Oil and gas are still dominant as Nigeria's source of foreign exchange and revenue, as the real sector annual productivity remains relatively low. Between 2011 and 2012, the oil and gas sector dominated GDP, accounting for over 95 per cent of export earnings and about 85 per cent of government revenue. The Industrial sector accounted for 6 per cent of economic activity, while in 2011, the manufacturing sector contributed only 4 per cent to GDP (Chete, 2016).

In spite of these, the findings of many studies in this subject area are narrow, with some having inconclusive results. Michael (2016) emphasized only on the role of finance in enhancing growth for sustainable development. He failed to take cognizance of the place of environment, infrastructure, etc., as this present study intends. David and Giles (1998) in Akintoye and Opeyemi (2014) failed to address basic components that contributed to industrial development, as evidenced in our present study. Ama, Charles and Patrick (2017) in their study on the subject area emphasized only on electric power consumption without an inclusion of other basic factors that can affect sustainable development. The study of Teodorica (2015) and Adepoju (2017) focused only on the effect of the ease of doing business. Ono, Akinlo and Oladepo (2014), and also the work of Aliyu and Yusuf (2013) emphasized only on the impact of credit to the private sector on the real sector in Nigeria; whereas Falade and Olagbaje (2015) investigated the relationship between government expenditure and the manufacturing sector output in Nigeria. These studies failed to carry out a collective impact analysis of these variables (using Fishers Distribution). Besides, the results of the causality tests of some available studies were inclusive, without clear causal distinction, whereas most adopted the use of paper reviews without empirically substantiating their findings. Also, the need to carry out cointegration test to establish the existence of a long-run relationship among these variables is very necessary since sustainability suggests long-term.

In view of these unfolding realities, this study therefore seeks to investigate the extent of these developmental strategies in achieving real sector development, for sustainable development of the Nigerian Economy within the period 1981 to 2017; acknowledging the ease of doing business rating for Nigeria, banks' credit to the private sector, Nigeria electric power consumption as the effective strategies for real sector development. Also employed in the study are two control variables namely government capital expenditure and green growth economy. This present study will be filling some literature gap as the study will be establishing a causal direction and also a test for long run relationship between the variables.

1.3 Objectives of the Study

The broad objective of the study is to determine if Nigerian Government Policy Reforms on the real sectors is an effective strategy to achieving sustainable development of the Real sector.

Other Specific Objectives include:-

1. To determine the relationship that exists between the ease of doing business rating for Nigeria and Real Sector development.
2. To ascertain the impact Banks' Credit to the private sector, as an effective strategy, has on Real Sector development in Nigeria.
3. To find out the effect the provision of infrastructure (Electricity supply) as an effective strategy, has on Real sector Development in Nigeria.
4. To determine the relationship that exists between Government capital expenditure as an effective strategy, and Real Sector Development in Nigeria.

5. To determine the effect of green growth economy (alternative and renewable energy) as an effective strategy, on real sector development in Nigeria.

1.4 Research Questions

The following research questions have been raised and they serve as a guide to this study.

1. What relationship exists between the ease of doing business rating for Nigeria, and Real Sector Development?
2. How does Banks Credit to the private sector, as an effective strategy affect Real Sector Development in Nigeria?
3. To what extent does the provision of infrastructure (Electricity Supply), as an effective strategy affect Real Sector Development in Nigeria?
4. What impact has Government capital expenditure, as an effective strategy, on Real sector development in Nigeria?
5. What relationship exists between Green Growth Economy (alternative and renewable energy) as an effective strategy, and Real sector Development in Nigeria?

1.5 Research Hypotheses

The study has formulated the following hypotheses in their null form to guide the study.

Ho_1: There is no significant relationship between the ease of doing business rating for Nigeria, and the Real Sector Development in Nigeria.

Ho_2: Banks Credit to the private sector, as an effective strategy, has no significant impact on Real Sector Development in Nigeria.

Ho_3: The provision of infrastructure (Electricity Supply) by the Nigerian Government, as an effective strategy, has no significant effect on Real Sector Development in Nigeria.

Ho_4: There is no significant relationship between Government Capital Expenditure as an effective strategy, and Real Sector Development in Nigeria.

Ho_5: Green Growth Economy as an effective strategy has no significant impact on Real Sector Development in Nigeria.

2.0 REVIEW OF RELATED LITERATURE

2.1 CONCEPTUAL REVIEW

2.1.1 The Concept of Sustainable Development

Jonathan Harris (2000) contained that advocates of sustainable development recognize social development as an essential part of the paradigm. The major area of emphasis included, Human Development index per capita GNP/GDP, Gender Equity, Poverty, etc. He concluded by saying that "EME sustainability means a major shift from existing techniques and organization of production (in areas as Agriculture, Energy, Industry, renewable resource system) to newer techniques that will practically address the real issues without jeopardizing the future, but instead, preserve it.

To Steiner (2008), sustainability is not just environmentalism; embedded in the definition of sustainability is the thought of sustainability to mean, the ability to sustain for social equity and economic development.

The concept of sustainable economy and development includes narrowing the gaps between rich and developing countries because of these deficiencies or weaknesses if not reduced or closed will cause more problems in the society instead of leading to economic development in a country.

According to the direct Government website UK, in Akintoye and Opeyemi (2014), sustainable development means a better quality of life now and for generations to come. It means not using up resources faster than the planet can replenish, or re-stock influences decision making, with organizations, and therefore can go towards forming principles and business "values".

David Pearce and Giles Arkinson in a working paper (CSERGE PA 98-02), "the Concept of sustain development: An Evaluation of its usefulness ten years after Brudtland" referred to sustainable development as being equated with a development path that ensures non-declining per capita well-being over some time horizon.

2.1.2.1 The Real Sector

The Real Sector is a constituent of the economy which consists of individuals and corporate entities that engage in activities aimed at producing goods and services to satisfy public demand. According to Sanusi (2011), the real sector is where production of goods and services take place through the combined use of raw materials and factors of production and it is the driving force of the economy. The output of the real sector indicates the level of productivity in the economy. When the production capacity of the real sector increases, the economy experiences growth. Sanusi (2011) in furtherance contends that to ensure the real sector optional operation to its full potential, there must be an efficient financial sector to support it. The performance of the real sector is a gauge to compare progress between nations.

The real sector is a major segment of the economy because activities in the sector influence economic productivity. It is constituted by economic agents that contribute to a nation's Gross Domestic Product (GDP). The sector is crucial for economic sustainability due to its productive capacity to meet aggregate demand in the economy. Anyanwu (2010) is of the opinion that the real sector plays an important role in capacity building and employment generation.

2.1.2.2 Components of the Real Sector

CBN (2011) contends that the real sector comprises of households, non-financial organizations and non-profit institutions serving households (NPISH) involved in the production and distribution of goods and services (from a combination of factor resources), necessary to meet the consumption demand of an economy. The signals on what to produce and its distribution emanates from two key markets in the sector, namely: (a) The production factor market (i.e. raw material market, labour market, land and capital market) and (b) The output market (i.e. production of agricultural and manufactured goods and general services by business units from factors of production).

CBN (2013), the key output sectors that make up the real sector are the primary sector (Agriculture and Mining), the Secondary Sector (Manufacturing and (Building and Construction), and the Tertiary sector (Services and Commerce).

2.1.2.3 Macroeconomic Policies

In the 2000s the main policies for economic development in Nigeria were encompassed in the NEEDs (NPC, 2004).

The Key objectives were:

- ❖ sustain a rapid, broad-based GDP growth rate;
- ❖ diversify the production structure away from oil and mineral resources;
- ❖ make the productive sector internationally competitive;

- ❖ reduce the role of government in the direct production of goods and strengthen its regulatory functions;
- ❖ adopt policies that are consistent with raising domestic savings and increasing private investments;
- ❖ promote exports and diversify exports away from oil; etc.

2.1.2.4 Nigeria Vision 20:2020

NV 20:2020

The current and future vision for economic development in Nigeria is set out in NV 20:2020. The macroeconomic policy thrusts of the NV 20:2020 are as follows (NPC 2009:22-3)

- ❖ achieving double digit growth rates and maintaining strong economic fundamentals; including inflation, exchange rate, interest rates, and other monetary aggregates;
- ❖ achieving significant progress in economic diversification, such as to achieve an economic structure that is robust and consistent with the goals of the NV 20:2020;
- ❖ stimulating the manufacturing sector and strengthening its link to the agricultural and oil and gas sectors, in order to realize its growth potential and serve effectively as a strong driver of growth;
- ❖ raising the relative competitiveness of the real sector, to increase the demand for Nigeria's non-oil products and services;
- ❖ deepening the financial sector and sustaining its stability to enable it to finance the real sector;
- ❖ encouraging massive investment in infrastructure and human capital and creating an enabling environment for domestic and private investment;
- ❖ adopting pragmatic fiscal management and implementing appropriate monetary, trade, and debt management policies to support domestic economic activities.

2.1.2.5 Challenges of the Real Sector Growth

As elucidated by OECD (2011), Radwan, (2010) and Usman 2013, in CBN (2013); the challenges to the sustained growth of the real sector include:

(i) Mono-Product Export Economy and Susceptibility to oil price shocks.
(ii) Weak Institutional Capacity.
(iii) Inadequate Supporting Infrastructural Facilities.
(iv) Funding Constraints: The root causes of the shortage of credit to the real sector include amongst others.
    (a) Inadequate stock of social infrastructure to support real sector activities and guarantee profitable returns on credit financial economic activities (Radwan 2010).
    (b) Unfavourable investment climate as a result of past policy inconsistency and weak institutions.

2.2 Theoretical Framework

2.2.1 Theory of Sustainable Development

This theory was propounded by the former Prime Minister of Norway, Gro Harlem Brundland in the 1980s. In her consideration of environmental factors to national development, she posited that sustainable development entails meeting the needs of the present without compromising the ability of future generation to respond to their needs (Global Learning Programme). The import of this statement is that sustainable development in Nigeria ensures that future generations are at

liberty to a better standard of living, prevent the crises in resources management and utilization; show the need for national quality and cohesion; and create the awareness of environmental, economic, and social needs of the people (Abbas, 2011).

2.2.2 The Cobb – Douglas Production Function

The theory shows how two or more production inputs; particularly capital and labour interact to produce certain amount of output. It originated from the research of Cobb and Douglas (1928) on the U.S. manufacturing sector between 1899 and 1922. According to Felipe and Adams (2005), the production function is the most pervasive form in theoretical and empirical analyses of growth and productivity. It is expressed as:

$$Y = AK_aL_{1-a} \quad \text{..... (2.1)}$$

Where:

Y = Real value of output (i.e. total production);
A = Total factor productivity;
K = Capital;
L = Labour;
a = Output elasticity of capital;
1-a = Output elasticity of labour.

The output elasticity of capital and labour measure the degree of responsiveness of total production to variations in the either labour or capital used respectively; the sum is always equal to 1.

3.0 RESEARCH METHODOLOGY

3.1 Sample, Source of Data and Sample Period

This section investigates the interaction between the variables of considered effective real sector developmental strategies in adoption, and Real sector productivity (Output); as it is believed that these variables will engender real sector development as effective developmental strategies, thereby enhancing the sector's contribution to national growth and development of Nigeria.

For the purpose of this study, data were obtained from secondary source, precisely, annual time-series data were retrieved from the Central Bank of Nigeria (CBN) Statistical Bulletin 2017 edition, and also from the World Bank data base. The period under review is between 1981 and 2017.

3.2 Model Specification, Theoretical Expectation and Estimate Model

This study employs three key strategic compacts of real sector development as contained in NEEDs and also in NV 20:2020 and they include EDB, Ease of Doing Biz (Environment), CPS – Credit to private Sector (Finance) and NEPC – Nigeria Electric Power Consumption (Infrastructure). More also, two control variables were added to the study to ascertain their effects on real sector development and how they relate with the sector's contribution to Nigeria economic growth and development. They are namely GCEXP – Government Capital Expenditure, and GRGEC (ANE) – Green Growth Economy, represented by Alternative and Nuclear Energy.

The Real Sector annual output, as a contribution to the GDP was used as proxy for the Real Sector productivity.

The functional expression of the model is:

RSO = F(EDB, CPS, NEPC, GCEXP, GRGEC) …….. (3.1)

The econometric form of the model expressed in equation (3.1) above is:

$RSO = ß_o + ß_1EDB + ß_2CPS + ß_3NEPC + ß_4GCEXP + ß_5GRGEC + u$ …… (3.2)

$ß_o$ is the model intercept; $ß_1 – ß_5$ are estimates/coefficients of effective strategies to real sector developments; and u is the error term.

In order to bring RSO and the effective strategic sector developmental variables to a similar base (i.e. comparative level), the logarithm of each variable is derived.

The logarithm form of equation (3.2) becomes:

$LogRSO = ß_o + ß_1 LogEDB + ß_2LogCPS + ß_3LogNEPC + ß_4 LogGCEXP + ß_5 LogGRGEC + u$ ……. (3.3)

In economic principal, each measure/variable of effective strategy to the real sector development is expected to be positively related to RSO. This means that the Coefficients of the effective strategies to real sector development for sustainable development of Nigerian Economy, as applied in the study should be greater than Zero.

On the basis of period under review, the choice of estimation method is made. The estimation method to be adopted is the Ordinary Least Squares (OLS) method. This method is a regression analytical method which is capable of showing the individual effect of each of these effective developmental strategies of the Real Sector adopted in the study as well as their joint effect on RSO.

More also, time series analysis will be carried out on the study, comprising of test for stationarity using Augmented Dickey Fuller unit root test, test for long-run relationship i.e. comtegration test using Johansen Comtegration test; and test for causality using Pairwise Granger Causality test.

Each of these tests wiere carried out with the aid of an interactive completer software. The Econometric views (E-views) Version 7.

3.3 Data Description

i. **Real Sector Output (RSO):** This is the value of contribution of the real sector activity annual output to total economic productivity.

ii. **Ease of Doing Business (EDB):** The ease of doing business index ranks countries against each other based on how the regulatory environment is conductive to business operation stronger protections of property rights. Economies with a High rank (1 to 20) have simpler and more friendly regulations for businesses. Nigeria is ranked 146 among 190 economies in the ease of doing business, according to the latest World Bank Annual Ratings. The rank of Nigeria deteriorated to 146 in 2018 from 145 in 2017. Ease of doing business in Nigeria averaged 145.09 from 2008 until 2018, reaching an all-time high of 170 in 2014 and a record low of 120 in 2008 (Source: Trading Economics: World Bank).

iii. **Credit to Private Sector (CPS):** This is the yearly value of banks' credit to the private sector. The essence of this variable in the study is to ascertain the effect of finance in enhancing real sector productivity/development as an effective strategic developmental tool and how it relates to the sustainability of Nigeria economy.

iv. **Nigeria Electric Power Consumption (NEPC):** Electric Power Consumption (Kwh per Capita) measures the production of power plants and combined heat and power plants

less transmission, distribution, and transformation losses and own use by heat and power plants. The essence of this variable in the study is to ascertain the effect of infrastructure in enhancing real sector productivity and how it relates to sustainable development of Nigeria. Development Relevance: An economy's production and consumption of electricity are basic indicators of its size and level of development. Although a few countries export electric power, most production is for domestic consumption. Expanding the supply of electricity to meet the growing demand of increasingly urbanized and industrialized economies without incurring unacceptable social, economic, and environmental cost is one of the great challenges facing developing countries.

v. **Government Capital Expenditure (GCEXP):** This is the yearly level of government capital expenditure in the country; which is otherwise referred to as Government Investment Expenditure.

vi. **Green Growth Economy (GRGEC):** This is represented in this study by alternative and renewable energy (ANE). Alternative and renewable/nuclear energy (% of total energy use) otherwise referred to as clean energy is non carbohydrate energy that does not produce carbon dioxide when generated. It includes hydropower and nuclear geothermal and solar power, among others. Modern societies are becoming increasingly dependent on reliable and secure electricity supplies to underpin economic growth and community prosperity. This reliance is set to grow as more efficient and less carbon intensive form of power are developed and deployed to help de-carbonized economies. Maintain reliable and secured electricity services while seeking to rapidly de-carbonize the power system is a key challenge for countries throughout the world.

4.0 DATA PRESENTATION AND ANALYSIS

4.1 Preamble

This section presents the computer analysis of the data for the study obtained from the Central Bank of Nigeria Statistical Bulletin and the World Bank database. The Econometric Views Software version 7 was used for the time series and multiple regression analysis.

4.2 Data Analysis and Interpretation

4.2.1 Test for Stationarity Using Augmented Dickey Fuller's Unit Root Test.

VARIABLE	AT LEVEL	AT 1ST DIFF.	LEVEL OF INTEGRATION
RSO	2.832955	-7.700574	(1)
EDB	-2.334766	-4.724516	(1)
CPS	3.198356	-6.669043	(1)
NEPC	-1.568491	-7.960519	(1)
GCEXP	-0.257107	-7620687	(1)
GRGEC	-0.437172	-5120842	(1)
Critical Value	5% = -3.632900		

Decision Rule:
The result shows that all the variables incorporated in the study are all order one integrating [1(1)], i.e., they are stationary at first difference because the Augmented Dickey Fuller Test Statistics are greater than the Mackinnon critical value at 5% level of significance.

4.2.2 Test for Long – Run Relationship using Johansen Co-integration Test

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value
None *	0.723524	133.1766	95.75366
At most 1 *	0.612169	88.17950	69.81889
At most 2 *	0.563085	55.02802	47.85613
At most 3	0.370834	26.04745	29.79707
At most 4	0.219663	9.829870	15.49471
At most 5	0.032291	1.148832	3.841466

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

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value
None *	0.723524	44.99712	40.07757
At most 1	0.612169	33.15148	33.87687
At most 2 *	0.563085	28.98057	27.58434
At most 3	0.370834	16.21758	21.13162
At most 4	0.219663	8.681038	14.26460
At most 5	0.032291	1.148832	3.841466

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Decision Rule: The result of the Trace test indicates 3 co-integrating equation(s) at 0.05 level 0f significance. Also, the maximum eigenvalue test indicates 1 co-integrating equations at 0.05 level of significance. We therefore reject the null hypothesis and accept the alternative hypothesis that there is a long-run relationship among the variables of the model.

4.2.3 Granger Causality Test – Pairwise

Pairwise Granger Causality Tests
Date: 05/04/19 Time: 17:21
Sample: 1981 2017
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
EDB does not Granger Cause RSO	35	4.97338	0.0136
RSO does not Granger Cause EDB		3.97434	0.0294
CPS does not Granger Cause RSO	35	3.10878	0.0593
RSO does not Granger Cause CPS		10.4978	0.0003
NEPC does not Granger Cause RSO	35	1.01675	0.3739
RSO does not Granger Cause NEPC		3.12495	0.0585
GCEXP does not Granger Cause RSO	35	5.23776	0.0112
RSO does not Granger Cause GCEXP		1.77018	0.1876
GRGEC does not Granger Cause RSO	35	2.26355	0.1215
RSO does not Granger Cause GRGEC		7.44412	0.0024

Decision Rule:

The reported Granger Causality test results in the table above revealed that there is a Causal link between two lag periods of Real Sector Output (RSO) and Effective Developmental Strategy Variables in varying cases. Two lag periods of RSO was found to granger cause current changes in some of the effective developmental strategy variables, EDB, CPS, and GRGEC. More also, among the incorporated effective developmental strategy variables, EDB and GCEXP were found to granger cause current changes in RSO.

We therefore establish a bi-directional causal relationship from effective developmental strategy to Real Sector Development for sustainable economic development of the Nigerian economy, and vice versa.

4.3 Diagnostic Tests

4.3.1 Test for Autocorrelation

Autocorrelation will be checked using Durbin Watson D-Test.

D = Durbin-Watson D-test = 2(1-ק), where ק = sample 1st order coefficient of autocorrelation.

Durbin-Watson statistics (d) lies within the range 0 and 4 inclusive. From the Durbin-Watson Statistics as contained in the regression result, Durbin-Watson (d) = 1.269623, which tends to 2(two), showing no first order autocorrelation among successive residuals.

4.4 Multiple Regression Analysis

MULTIPLE REGRESSION ANALYSIS RESULT

Dependent Variable: RSO
Method: Least Squares
Date: 05/04/19 Time: 16:42
Sample: 1981 2017
Included observations: 37

Variable	Coefficient	Std. Error	t-Statistic	Prob.

C	-32375.12	9953.465	-3.252648	0.0028
EDB	157.2263	90.68123	1.733835	0.0929
CPS	3.466935	0.264529	13.10608	0.0000
NEPC	106.9342	45.13751	2.369077	0.0242
GCEXP	9.643336	3.188034	3.024853	0.0050
GRGEC	838.7513	497.6385	1.685463	0.1019

R-squared	0.989411	Mean dependent var	24861.44
Adjusted R-squared	0.987704	S.D. dependent var	34308.70
S.E. of regression	3804.451	Akaike info criterion	19.47312
Sum squared resid	4.49E+08	Schwarz criterion	19.73435
Log likelihood	-354.2528	Hannan-Quinn criter.	19.56522
F-statistic	579.3406	Durbin-Watson stat	1.269623
Prob(F-statistic)	0.000000		

Source: E-Views Output 2019.

Estimation Command:
==========
LS RSO C EDB CPS NEPC GCEXP GRGEC

Estimation Equation:
==========
RSO = C(1) + C(2)*EDB + C(3)*CPS + C(4)*NEPC + C(5)*GCEXP + C(6)*GRGEC

Substituted Coefficients:
==========
RSO = -32375.1200646 + 157.226319698*EDB + 3.46693546787*CPS +
106.934226122*NEPC + 9.64333566736*GCEXP + 838.7512784*GRGEC

Barring all factors, Real Sector Output autonomously averages -32375.1200646 per annum absolutely.

The result also shows that there is a positive relationship between the Effective Developmental Strategy variables (Ease of Doing Business, Credit to the Private Sector, Nigeria Electric Power Consumption, Government Capital Expenditure and Green Growth Economy) and Real Sector Output of the Nigerian economy within the period under review.

The positive signs of the Effective Developmental Strategy Variables agree with the aprior expectations.

4.5.1 Test for Goodness of fit using the Adjusted Coefficient of Determination (R-Squared Adjusted)

The result shows that all the independent variables included in the model accounted for 99%

variations in the dependent variable. This gives a good fit and shows that our model is adequate and plausible. The remaining unexplained variations are taken care of by the error term (e_t).

4.5.2 Test for the Individual Significance Using T-test

Hypothesis One:

Ease of Doing Business

Ho1: There is no significant relationship between the ease of doing business rating, as an effective developmental strategy and real sector development in Nigeria.

$t_{cal} = 1.733835$
$t_{tab} = 1.960$

Decision Rule:

Since $t_{calculated}$ is greater than $t_{tabulated}$, we reject the null hypothesis and accept the alternative hypothesis, and infer that keeping other regressors constant, the ease of doing business rating, as an effective developmental strategy has a significant effect on Nigeria's Real Sector development.

Hypothesis Two:

Banks' Credit to the Private Sector

Ho2: There is no significant relationship between banks' credit to the private sector, as an effective developmental strategy and real sector development in Nigeria.

$t_{cal} = 13.10608$
$t_{tab} = 1.960$

Decision Rule:

Since $t_{calculated}$ is greater than $t_{tabulated}$, we reject the null hypothesis and accept the alternative hypothesis, and infer that keeping other regressors constant, banks' credit to the private sector, as an effective developmental strategy, has a significant effect on Nigeria's Real Sector development.

Hypothesis Three:

Nigeria Electric Power Consumption

Ho3: There is no significant relationship between Nigeria Electric Power Consumption, as an effective developmental strategy and real sector development in Nigeria.

$t_{cal} = 2.369077$
$t_{tab} = 1.960$

Decision Rule:

Since $t_{calculated}$ is greater than $t_{tabulated}$, we reject the null hypothesis and accept the alternative hypothesis, and infer that keeping other regressors constant, Nigeria Electric Power Consumption, as an effective developmental strategy, has a significant effect on Nigeria's Real Sector development.

Hypothesis Four:
Government Capital Expenditure
Ho4: There is no significant relationship between government capital expenditure, as an effective developmental strategy and real sector development in Nigeria.

t_{cal} = 3.024853
t_{tab} = 1.960
Decision Rule:
Since $t_{calculated}$ is greater than $t_{tabulated}$, we reject the null hypothesis and accept the alternative hypothesis, and infer that keeping other regressors constant, government capital expenditure, as an effective developmental strategy, has a significant effect on Nigeria's Real Sector development.

Hypothesis Five:
Green Growth Economy
Ho5: There is no significant relationship between green growth economy, as an effective developmental strategy and real sector development in Nigeria.

t_{cal} = 1.685463
t_{tab} = 1.960
Decision Rule:
Since $t_{calculated}$ is less than $t_{tabulated}$, we accept the null hypothesis and reject the alternative hypothesis, and infer that keeping other regressors constant, green growth economy, as an effective developmental strategy, has a no significant effect on Nigeria's Real Sector development.

4.5.3 Test for Joint Significance using the Fisher's Distribution

Ho: There is no significant relationship between EDB, CPS, NEPC, GCEXP, GRGEC and RSO.
F_{cal} = 579.3406
F_{tab} = 2.53 @ 5%, 3.70 @ 1%.

Decision Rule:
Since $F_{calculated}$ is greater than $F_{tabulated}$, at both 1% and 5% critical values respectively, we reject the null hypothesis and accept the alternative hypothesis and infer that EDB, CPS, NEPC, GCEXP and GRGEC jointly affect RSO.

4.6 Discussion of Findings

From the tests and analysis conducted towards the actualization of the objectives of this study, we found that there is a significant relationship between Effective Developmental Strategy instruments that make for sustainable development of the Nigerian Economy collectively, and real sector output in Nigeria within the period under review.

The study, in answering the research questions, on individual effective developmental strategy instruments' relationship and effects basis, shows that there is a positive relationship between all the variables – explanatory and control (EDB, CPS, NEPC, GCEXP, and GRGEC) and the real sector output (RSO).

On individual hypothesis tests, three of the explanatory variables were found to exert significant effect (positive and negative) on the dependent variable.

From the stationarity test using the Augmented Dickey-Fuller unit root test, the result shows that all the variables of the study (EDB, CPS, NEPC, GCEXP and GRGEC) are all order one differencing, i.e., stationary at first difference.

On the test for long run relationship using Johansen cointegration test, the result indicated that there exists a long run relationship among the variables of the model.

On the goodness of fit of the model used for the analysis, the independent variables included in the model accounted for 99% variations in the dependent variable, making the model adequate and plausible.

5.0 Conclusion

The real sector is a strategic component of an economy because it produces and distributes tangible goods and services required to satisfy aggregate demand in the economy; and these developmental strategies, among others are indispensable tools to enhancing its productivity for the actualization of sustainable development of the Nigerian Economy. The result of the study revealed that the developmental strategy instruments employed in the study namely, the ease of doing business rating for Nigeria, which takes into account the place of environmental friendliness for investment; banks' credit to the private sector, which takes into account the place of productive activities financing; Nigeria electric power consumption which takes into account the place of improved energy supply in enhancing productive activities; government capital expenditure, which takes into account the place of government provision of infrastructure to meet real sector societal and economic needs; and green growth economy, which takes into account the place of environment sustainability and preservation; enhanced real sector productivity in achieving the sustainable development of the Nigerian Economy. For the real sector to remain vibrant and efficient, attention should be given to social, economic and environmental factors necessary for the optimal functionality of the sector, as this will lead to optimal productivity of the sector, resulting to sustainable development of the Nigerian Economy.

6.0 Recommendations

Based on the findings and conclusion of this study, we recommend that:

- There is need to redirect the fiscal policy measures towards the development of the Real Sector, which is known as the productive sector of goods and services of the economy, as this will address to a great extent major societal needs of the country (mostly the rising trend in unemployment rate, hunger and poverty), and also enhance Nigeria economic growth and development.
- Since financing and investment makes for the real sector development; the expansionary fiscal policy measures should be encouraged since the adoption of same stimulates productive sector investment by investors and real sector growth through fund channeling.
- The place of monitoring of sectoral allocations by the government, mostly developmental allocations is eminent, to checkmate diversion and misappropriation of fund by relevant agencies of the government.

- Environmental policies that will aim at environmental sustainability, and investment friendly environment should be formulated and implemented by the relevant agency, to enhance participatory investment – local and foreign.
- Attention should be given to energy supply to address power outages, and the provision of necessary infrastructural facilities, as they remained determinant factors for real sector productivity.

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