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DISAGGREGATED ANALYSIS OF PUBLIC EXPENDITURE AND ECONOMIC DEVELOPMENT ON THE NIGERIAN ECONOMY

ASIAGWU, Harriet¹, UGHERUGHE, Joseph Ediri², EZEABASIL, N. Vincent³

^{1*&3}Department of Banking and Finance,
Faculty of Management Sciences,
Chukwuemeka Odumegwu Ojukwu University, Anambra State, Nigeria.

²Department of Banking and Finance,
Faculty of Management and Social Sciences,
Dennis Osadebay University,
Asaba, Nigeria.

Corresponding Author: ASIAGWU, Harriet

Corresponding Author Email: ucheharriet@gmail.com

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ABSTRACT

This study empirically investigated public expenditure and economic development of Nigeria. To achieve this objective, relevant data used spanning from 1981-2021 were sourced from Central Bank of Nigeria (CBN) Statistical Bulletin for the period under review. Descriptive statistics, Augmented Dickey Fuller (ADF) Unit root test, Granger causality and Ordinary Least Square (OLS) regression were the analytical tools for this study. Real Gross Domestic Product (RGDP) was used as the dependent variable while capital expenditure on administration, capital expenditure on economic services, capital expenditure on Social and Community Services, capital expenditure on Transfers, recurrent expenditure on administration, recurrent expenditure on economic services, recurrent expenditure on Social and Community Services, and recurrent

expenditure on Transfers as the independent variables. Based on the analysis, the F-statistic of the regression output stood at 56.23992, this implies that the regression plane is statistically significant. Also, the Prob.(F-Statistic) 0.000000 is less than the 0.05 level of significance implies that there is a statistical significant relationship between the variables. $R^2 = 0.933599$ implies that about 93.36% of the total variation in the model specified was accounted for by the independent variables. RGDP and RES are platykurtic, CSCS, RA, and RSCS are mesokurtic, and CA, CES, CSCS, CT, and RT are leptokurtic, according to the descriptive analysis, which also showed that all the variables were normally distributed; All of the variables were stationary and significant at their respective values. RGDP granger caused CA, CES, CSCS, CT, RES, RSCS, and RT, so it is unidirectional causality, however RGDP granger cause RA while RA granger cause RGDP, therefore there is bi-directional causality between the two. There is the existence of a long-run relationship between the variables as the result the Johansen co-integration test indicates six co-integration equation. Therefore, public expenditure has significant impact on economic development of Nigeria. In conclusion, public expenditure (capital and recurrent) is an important determinants of economic growth and development in Nigeria. The study recommended that Government spending if properly managed will raise the nation's production capacity and employment, which in turn increase economic growth in Nigeria, also government should increase its expenditure on rural development, roads, water and electrification in order to accelerate the level of productivity, increase income and raise the standard of living of poor citizens in Nigeria

Keywords: Real Gross Domestic Product, Administration, Economic Services, Total Social and Community Services and Total Transfers expenditures.

INTRODUCTION

Public spending refers to money spent by a nation's government on things that the population as a whole needs or wants, such as pensions, provisioning (which includes housing, healthcare, and education), security, infrastructure, and so forth. By changing public spending, aggregate demand can be controlled to limit inflation in the economy and thus be used as a lever to increase overall demand and pull the economy out of a slump. Spending by the government aims to increase income equality, direct resource allocation in the right directions, and affect the make-up of the GDP. In emerging nations, changes in public spending are made in order to create and accelerate economic growth as well as to increase employment possibilities. Public spending policies in emerging nations are also helpful in reducing income distribution disparities and the widespread poverty that exists there. According to Wagner's (1883) argument, a nation's increased industrial and economic growth leads to a rise in government spending. According to this view, the public sector is expanding both absolutely and comparatively at the expense of the expansion of the private sector. That is, there is a causal link between the expansion of an industrialising economy and the proportional expansion of its public sector. According to the hypothesis, public spending always increases as income growth accelerates. According to the law, the growth of an industrial economy will be followed by a rise in the proportion of public spending to GDP.

According to Metehan, Cemil, and Merve's (2012) analysis of the relationship between public spending and economic growth using Turkey as an example, current spending, transfer

spending, and overall spending all affect economic growth in Turkey. A stable long-term relationship between public spending and the rate of economic growth in the Central African Economic and Monetary Community (CEMAC) sub-region was found by Nembot, Melachio, and Kos in their study *Effects of Public Expenditure on Economic Growth in the CEMAC Sub-region: A Comparative Analysis between the Fragile and Non-fragile States*; Effects of public expenditure on economic growth in Nigeria: a disaggregated time series analysis between 1970 and 2009 was studied by Nworji, Okwu, Obiwuru, and Nworji (2012), who found that government spending has a relationship with and significantly affects economic growth. They also came to the conclusion that the components of government expenditure under study are significant variables in explaining economic growth in Nigeria. *Government Expenditure and Regional Economic Growth* was researched by Naftaly (2020): Non-devolved expenditure was shown to be significant in shaping regional growth, and short-run uni-directional causality was detected between capital, recurrent expenditures, and growth, according to Kenya's *Direction of Causality between 2013 and 2017*. *Public Education Expenditure and Economic Growth in Nigeria* was researched by Urhie (2014). Recurrent and capital expenditure on education have different effects on economic growth; while recurrent expenditure had a negative impact on education, capital expenditure was found to have a positive impact. On the other hand, recurrent education expenditure had a positive and significant impact on economic growth. This was discovered using a disaggregated approach between 1970 and 2010. Public outcries over deteriorating infrastructure facilities persist in Nigeria despite an increase in government spending over time.

The increased government spending in Nigeria is anticipated to result in significant growth and development, but remains one of the poorest countries in the world, with more than 50% of the population subsisting on less than \$2 per day and less than 2% being unusually wealthy. The failure of numerous industries, which was accompanied by a high rate of unemployment and project abandonment, was caused by poor roads and an erratic power supply. Indicators of Nigeria's macroeconomic health, including the balance of payments, import obligations, inflation rate, currency rate, national savings, foreign reserves, debt profile, and mortality rate, show that the country has not been doing well or economically soundly in recent years. More so, despite its significance for policy decisions, few empirical studies have examined the impact of government spending on economic growth and development holistically. The present study employ a more recent data, more adequate method of analysis, covering Nigeria thereby making it a country specific study, as a result, this study determines that it is vital to reevaluate public spending on economic development and growth in Nigeria.

LITERATURE REVIEW

Conceptual Review

A real tool for managing and keeping track of government spending plans is the budget, which included a package of public spending plans and tax revenues for the year. Recurrent and capital expenses were typically the two primary categories used to describe government spending.

Recurrent Expenditures: These are expenditures required to keep up the current level of government services (Osiegbu, 2010). Recurrent expenses are those that are incurred repeatedly or even on a scheduled basis. Recurring expenses don't include payments for capital items like shares, bonds, and real estate.

Capital expenditures: These are regarded as long-term capital assets (Osiegbu, 2010). It encompasses any expenditure that could aid in development, not just those for infrastructure (such as roads, schools, hospitals, etc) (Lacey, 1989). Investment expenses that raise the states' assets are referred to as capital expenditures.

These classifications, however, were related rather than mutually incompatible. In most cases, the operational and maintenance expenses of finishing capital projects led to recurrent expenditure; the amount available for investment was a function of both the magnitude of revenue and the amount that is spent annually on running the government.

Expenditures for general administration, defence, and internal security are referred to as administrative expenses.

Social and community services: These include things like health, education, and other things. Agriculture, manufacturing and craft, mining and quarrying, transport and communication, as well as other economic services, are included in the category of economic services.

Transfer: These covers external financial obligations, capital repayment, loans on lent to states, loans on lent to parastals and government owned company.

Theoretical Framework

The Keynesian theory holds that public expenditures influence a nation's economic growth, while the second theory affirms that all public expenditures have an effect on economic growth. Wagner's law and Keynesian theory serve as the theoretical foundation for this study. Keynesian philosophy The 1930s saw the development of this theory by British economist John Maynard Keynes.

A macroeconomic economic theory called Keynesian economics examines the total amount of expenditure in the economy and how it affects output, employment, and inflation. Keynes' theory led him to propose higher government spending and lower taxes as a way to boost demand and rescue the world economy from the Great Depression. According to Keynesian economics, the government should raise demand to spur economic growth. Consumer demand, according to Keynesians, is what primarily drives an economy. Therefore, the hypothesis is in favour of an expansionary monetary policy. Government spending on infrastructure, unemployment benefits, and education are its key tools. Overusing Keynesian programmes has the disadvantage of raising inflation. In "The General Theory of Employment, Interest, and Money," Keynes outlined his thesis. It was innovative when it was released in February 1936. First, it made the case that government expenditure was a significant contributor to overall demand. Thus, higher expenditure would result in higher demand (Government spending on infrastructure, unemployment benefits, and education will increase consumer demand). Second, Keynes contended that to keep full employment, government investment was essential. Keynes promoted deficit spending during the business cycle's contractionary stage. Politicians have, however, started to employ it even during the expansionary phase in recent years. The debt grew as a result of President Bush's deficit spending in 2006 and 2007. (Wagner's law of state) Wagner's Hypothesis Adolf Wagner, a renowned German political economist (1835–1917), proposed what is known as the law of increasing state spending. He did this to study and explain the pattern in the growth of public expenditure.

According to Wagner, there is a causal, causal relationship between the relative expansion of an industrialising economy's public sector and the growth of its economy as a whole. According to the hypothesis, public spending always increases as income growth accelerates. The advent

of the modern industrial society will lead to increased political pressure for social progress and increased allowance for social consideration by industry, according to the law, which also predicts that the development of an industrial economy will be accompanied by an increased share of public expenditure in the gross national product. According to Wagner's rule, a welfare state develops from free-market capitalism as a result of the populace voting for increasingly generous social benefits when overall income levels rise across a wide range of economic sectors. Despite some ambiguity, Richard Musgrave has interpreted Wagner's formal statement as follows: The proportion of the public sector in the national economy increases consistently as progressive nations industrialise. Three key factors make the increase in state spending necessary. These were designated by Wagner as (i) state social activities, (ii) administrative and protective measures, and (iii) welfare duties. Socio-political, i.e., state social programmes such as retirement insurance, assistance for natural disasters (internal or external), environmental protection initiatives, etc., grow through time. Economic: As research and technology improve, more governmental funding is directed into these fields as well as other investment initiatives, etc. Historical: The state uses government loans to pay for unforeseen expenses, which causes the total amount of government debt and interest to rise, or the cost of debt payment to rise.

Vaughan's Rule Adolf Wagner, a German economist, first proposed the law in 1893. He carried out an empirical study on the 19th-century rise in German and other European countries' expenditures. His conclusions lead him to propose "An Act to Increase Public Participatory Government Activity" as legislation. According to Wagner, as the economy grows as a result of rising industrialization and urbanisation, more government functions result in higher public spending. According to Wagner, rising economic growth causes an increase in government spending.

According to Wagner, there are three things that can lead to a rise in government spending:

- (i) The necessity for the government to provide both administrative and protective services would result in an increase in government spending as population growth, industrialization, and urbanisation levels grew.
- (ii) As the economy becomes more urbanised and industrialised, there is an increasing demand for social and welfare services from the government.
- (iii) As the nation becomes more industrialised, science and technology will progress, increasing government spending on various projects. There are "innate tendencies for the operations of the several tiers of government (such as central and state government) to develop both extensively and intensively," according to Wagner (Bhatia, 2012).

Empirical Review

Using the gross domestic growth rate as the dependent variable, Adegboyo and Olaniyan (2021) investigated the effectiveness of public spending in promoting economic growth in Nigeria between 1981 and 2019 using administrative capital expenditure, administrative recurrent expenditure, economic services capital expenditure, economic services recurrent expenditure, social and community services capital expenditure, and transfers recurrent expenditure. The ARDL and Granger causality tests were used in the study, and it was discovered that social and community recurrent expenditure, social and community services capital expenditure, and administration recurrent expenditure simulate Nigerian economic growth, while economic service recurrent expenditure, economic service capital expenditure, transfer capital

expenditure, and transfer recurrent expenditure inhibit Nigerian economic growth. The results also show that administrative capital spending and administrative recurrent expenditure are both unidirectional causally related to economic developments.

In their study of government spending and standard of living in Nigeria, an emerging market in Africa, from 1981 to 2018, Jeff-Anyeneh, Ananwude, Ezu, & Nnoje (2020) used per capita income to measure standard of living while recurrent expenditure and capital expenditure served as independent variables. The methodology used was ARDL, Granger Causality, OLS, Sensitivity analysis (serial correlation LM test, heteroscedasticity, and Ramsey Reset Specification test), and it was discovered that while government recurrent and capital expenditure have a significant impact on the standard of living in Nigeria, this is not an accurate representation of the level of living in the nation. The need for the government to spend more money on the health sector is quite great. Investment in healthcare has a favourable correlation with economic growth and has the ability to lower poverty, leading to an improvement in living conditions.

Recurrent expenditure (REC) and capital expenditure (CAP) were regressed on product (GDP) using OLS technique, Durbin Watson, and unit root test method in Murita & Taiwo's (2011) study of government spending and economic development in Nigeria from 1970 to 2008. They came to the conclusion that there is a positive relationship between real GDP as opposed to recurrent and capital expenditure.

Olayiwola, Bakare-Aremu, & Abiodun (2021) investigated the relationship between Public Health Expenditure and Economic Growth in Nigeria: Testing of Wagner's Hypothesis between 2000 and 2016 using Real Gross Domestic Product per Capita, the share of Health Expenditure in Total Government Expenditure, and Population were regressed on Gross Public Health Expenditure using ADF Unit Root Test, Johansen, Joselieus Cointegration test, Autoregressive Distributed Lag Model, Granger Causality Test.

The impact of government spending on economic growth in Nigeria from 1998 to 2017 was examined by Bingilar & Oyadonghan (2020). Inflation and interest rates were regressed on Gross Domestic Product (GDP) using the OLS method, and it was discovered that neither had a substantial impact on GDP or Nigeria's economic growth.

In their study, Effects of Public Expenditure on Economic Growth in the CEMAC Subregion: A Comparative Analysis between the Fragile and Non-fragile States, Nembot, Melachio & Kos (2021) used real GDP growth rate as the dependent variable and total government expenditure, government investment expenditure, government consumption expenditure, trade openness, primary school enrolment rate, and political risk index as the independent variable to understand how human capital affects growth, found a stable long-run relationship between public expenditure and the economic growth rate in the CEMAC subregion.

In 2020, Onifade, evik, Erdogan, Asongu, & Bekun conducted an empirical investigation. According to new evidence from the Nigerian economy between 1981 and 2017, total government recurrent expenditures as a percentage of GDP, total government capital expenditures as a percentage of GDP, total public debt as a percentage of GDP, private consumption expenditures, and gross domestic investment as measured by annual growth of gross capital formation were all used in an empirical study to examine the effects of government spending on economic growth. Using enhanced Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests as methodology, researchers discovered that public debt and recurrent

government spending have significant negative effects on economic growth while capital spending has a small but positive long-term effect. This suggests that massive recurrent spending and fiscal expansion cannot support real economic growth.

Chandana, Adamu, & Musa (2021) studied the impact of government spending on economic growth in Nigeria between 1970 and 2019 using GDP as the dependent variable and labour force, recurrent expenditure, trade openness, inflation, and non-oil revenue as independent variables, employed Autoregressive Distributed Lag (ARDL) Model, unit root test and the co-integration analysis, they found that capital expenditure has a positive and significant relationship with economic growth.

Using the Gross Domestic Product (GDP) as the dependent variable and government capital and recurrent expenditures on economic services (CEES and REES), capital and recurrent expenditures on social and community services (CESCS and RESCS), and capital and recurrent expenditures on transfers (CETRANS and RETRANS) as the independent variables, Nworji, Okwu, Obiwuru, & Nworji (2012) investigated the effects of public expenditure on economic growth in Nigeria using OLS as the analytical tool and found that government expenditure has a relationship with and exerts significant effect on economic growth.

Using County economic growth (constant price in 2009) as the dependent variable, Naftaly (2020) studied Government Expenditure and Regional Economic Growth: The Direction of Causality between 2013 and 2017 in Kenya. Independent variables included recurrent, capital and non-devolved expenditure (national capital and recurrent expenditure), non-devolved (lnng), capital (lncg) spending, recurrent (lnrg) budget, corruption index (lncr). In addition, short-run uni-directional causality between capital and recurrent expenditures and growth was found. It was argued that expansionary government spending speeds up regional economic growth in the long run. Non-devolved expenditure is found to be significant in determining regional growth, and growth significantly affects non-devolved in the short run.

Real Gross Domestic Product (GDP) per capita growth rate was used as the dependent variable in Urhie (2014) study, Public Education Expenditure and Economic Growth in Nigeria: A Disaggregated Approach. Independent variables included public expenditure on education, which included the ratio of public education expenditure to total government expenditure, the ratio of public recurrent education expenditure to total government expenditure, and the ratio of public capital education expenditure to total government expenditure, physical capital, trade openness, financial depth, and inflation rate were used in the estimation process using two stage least squares (2SLS). The results showed that total public education spending can promote economic growth without necessarily improving educational attainment, that recurrent and capital expenditure on education have different effects on economic growth, and that while capital expenditure was found to have a positive impact on education while recurrent expenditure had a negative impact.

Previous studies as embedded in the empirical review of this literature reviewed reveal numerous works done on the subject of public expenditure and economic growth. Studies carried out in this area of concern have covered various geographical locations. However, there seems to be an absence of work exploring the public expenditure and economic development in Nigeria. Most of the research work stops between 2018 and 2019 and there doesn't include the most recent data on this topic. Also, that there is a conflicting number of results as to the effect of public spending on economic development and growth in Nigeria. The present study

employ a more recent data (2021), more adequate method of analysis, covering Nigeria thereby making it a country specific study.

METHODOLOGY

Research Design

Ex-Post-Facto research design was used in this study. The study's primary emphasis is Nigeria, and its data ranges across a forty-year (40) period, from the years 1981 to 2020. Secondary data from the Central Bank of Nigeria (CBN) Statistical Bulletin were used in this study.

Capital expenditure on administration, capital expenditure on economic services, capital expenditure on Social and Community Services, capital expenditure on Transfers, recurrent expenditure on administration, recurrent expenditure on economic services, recurrent expenditure on Social and Community Services, and recurrent expenditure on Transfers as the independent variables, real gross domestic product (RGDP) was used as the dependent variable.

Method of Analysis

Descriptive statistics, the Augmented Dickey Fuller (ADF) unit root test, Granger causality, Johansen co-integration test and the OLS method are all used to test hypotheses. E-Views 9.0 is the statistical programme used in this investigation.

Model Specification

The chosen economic development indicator is the Real Gross Domestic Product (RGDP) specified to depend on public expenditure (components of both capital and recurrent).

The functional relationship between public expenditure and economic development in Nigeria is expressed as:

Real Gross Domestic Product = $f(\text{Administration, Economic Services, Social and Community Services, Transfers expenditures})$.

$RGDP = f(CA, CES, CSCS, CT, RA, RES, RSCS, RT) \dots \dots \dots \text{Model 1}$

$$RGDP = \beta_0 + \beta_1 CA + \beta_2 CES + \beta_3 CSCS + \beta_4 CT + \beta_5 RA + \beta_6 RES + \beta_7 RSCS + \beta_8 RT + U \dots \text{Equation 1}$$

Where:

RGDP = Real Gross Domestic Product

CA = Capital expenditure on Administration (+)

CES = Capital expenditure on Economic Services (+)

CSCS = Capital expenditure on Social and Community Services expenditure (+)

CT = Capital expenditure on Transfers (+)

RA = Recurrent expenditure on Administration (+)

RES = Recurrent expenditure on Economic Services (+)

RSCS = Recurrent expenditure on Social and Community Services (+)

RT = Recurrent expenditure on Transfers (+)

U = Stochastic disturbance term or error term

β_0 denotes the constant term, $\beta_1 - \beta_8$ are slope of the coefficients representing Parameters to be estimated and U is the disturbance term assumed to be purely random.

On apriori, it is expected that the dependent variable should have a positive relationship with

the independent variables.

DATA PRESENTATION AND ANALYSIS

Data Presentation:

Table 1

Extracted Efficiency Parameters for Public Expenditure (Federal Government Expenditures (Capital and Recurrent)) and Economic Development of Nigeria Economy

| PERIOD | RGDP N'Billion | CA N'Billion | CES N'Billion | CSCS N'Billion | CT N'Billion | RA N'Billion | RES N'Billion | RSCS N'Billion | RT N'Billion |
|--------|-------------------|-----------------|------------------|-------------------|-----------------|-----------------|------------------|-------------------|-----------------|
| 1981 | 19,549.56 | 0.72 | 3.63 | 1.30 | 0.92 | 0.91 | 0.18 | 0.29 | 3.46 |
| 1982 | 18,219.27 | 0.39 | 2.54 | 0.97 | 2.52 | 1.04 | 0.20 | 0.33 | 3.93 |
| 1983 | 16,228.81 | 1.10 | 2.29 | 1.03 | 0.47 | 0.90 | 0.17 | 0.29 | 3.39 |
| 1984 | 16,048.31 | 0.26 | 0.66 | 0.24 | 2.94 | 1.10 | 0.21 | 0.35 | 4.16 |
| 1985 | 16,997.52 | 0.46 | 0.89 | 1.15 | 2.96 | 1.43 | 0.27 | 0.46 | 5.41 |
| 1986 | 17,007.77 | 0.26 | 1.10 | 0.66 | 6.51 | 1.45 | 0.28 | 0.47 | 5.50 |
| 1987 | 17,552.10 | 1.82 | 2.16 | 0.62 | 1.78 | 3.84 | 0.69 | 0.30 | 10.81 |
| 1988 | 18,839.55 | 1.90 | 2.13 | 1.73 | 2.59 | 5.78 | 1.22 | 2.11 | 10.30 |
| 1989 | 19,201.16 | 2.62 | 3.93 | 1.84 | 6.65 | 6.27 | 1.42 | 4.23 | 14.07 |
| 1990 | 21,462.73 | 2.92 | 3.49 | 2.10 | 15.55 | 6.54 | 1.61 | 3.40 | 24.67 |
| 1991 | 21,539.61 | 3.35 | 3.15 | 1.49 | 20.36 | 6.95 | 1.30 | 2.68 | 27.31 |
| 1992 | 22,537.10 | 5.12 | 2.34 | 2.13 | 30.18 | 8.68 | 3.08 | 1.34 | 39.93 |
| 1993 | 22,078.07 | 8.08 | 18.34 | 3.58 | 24.50 | 30.57 | 7.75 | 14.66 | 83.75 |
| 1994 | 21,676.85 | 8.79 | 27.10 | 4.99 | 30.04 | 20.54 | 3.91 | 10.09 | 55.44 |
| 1995 | 21,660.49 | 13.34 | 43.15 | 9.22 | 55.44 | 28.76 | 5.92 | 13.82 | 79.13 |
| 1996 | 22,568.87 | 14.86 | 117.83 | 8.66 | 71.58 | 47.12 | 5.84 | 17.69 | 53.64 |
| 1997 | 23,231.12 | 49.55 | 169.61 | 6.90 | 43.59 | 56.18 | 6.20 | 22.06 | 74.12 |
| 1998 | 23,829.76 | 35.27 | 200.86 | 23.37 | 49.52 | 50.68 | 11.57 | 21.44 | 94.40 |
| 1999 | 23,967.59 | 42.74 | 323.58 | 17.25 | 114.46 | 183.64 | 87.08 | 71.37 | 107.58 |
| 2000 | 25,169.54 | 53.28 | 111.51 | 27.97 | 46.70 | 144.53 | 28.59 | 84.79 | 203.69 |
| 2001 | 26,658.62 | 49.25 | 259.76 | 53.34 | 76.35 | 180.80 | 53.01 | 79.63 | 265.86 |
| 2002 | 30,745.19 | 73.58 | 215.33 | 32.47 | 0.00 | 266.51 | 52.95 | 152.19 | 225.15 |
| 2003 | 33,004.80 | 87.96 | 97.98 | 55.74 | 0.01 | 307.97 | 96.07 | 102.61 | 477.65 |
| 2004 | 36,057.74 | 137.77 | 167.72 | 30.03 | 15.73 | 306.80 | 58.90 | 134.40 | 610.70 |
| 2005 | 38,378.80 | 171.57 | 265.03 | 71.36 | 11.50 | 434.70 | 64.20 | 151.70 | 670.60 |
| 2006 | 40,703.68 | 185.22 | 262.21 | 78.68 | 26.27 | 522.30 | 79.70 | 194.20 | 594.00 |
| 2007 | 43,385.88 | 226.97 | 358.38 | 150.90 | 23.04 | 626.36 | 179.07 | 256.67 | 527.17 |
| 2008 | 46,320.01 | 287.10 | 504.29 | 152.17 | 17.33 | 731.02 | 313.75 | 332.93 | 739.66 |
| 2009 | 50,042.36 | 291.66 | 506.01 | 144.93 | 210.20 | 714.42 | 423.61 | 354.19 | 635.75 |
| 2010 | 54,612.26 | 260.20 | 412.20 | 151.77 | 59.70 | 1,117.44 | 562.75 | 550.90 | 878.34 |
| 2011 | 57,511.04 | 231.80 | 386.40 | 92.85 | 207.50 | 1,262.40 | 310.50 | 785.44 | 956.18 |
| 2012 | 59,929.89 | 190.50 | 320.90 | 97.40 | 265.90 | 1,159.40 | 230.10 | 790.06 | 1,145.60 |
| 2013 | 63,218.72 | 283.65 | 505.77 | 154.71 | 164.27 | 1,111.80 | 291.20 | 844.10 | 1,441.90 |
| 2014 | 67,152.79 | 229.63 | 393.45 | 111.29 | 48.75 | 992.84 | 266.40 | 774.77 | 1,392.93 |
| 2015 | 69,023.93 | 226.81 | 348.75 | 82.98 | 159.82 | 1,228.99 | 275.36 | 807.59 | 1,520.01 |
| 2016 | 67,931.24 | 147.72 | 278.95 | 68.80 | 158.14 | 1,277.00 | 255.78 | 775.55 | 1,851.77 |
| 2017 | 68,490.98 | 328.94 | 542.19 | 167.66 | 203.51 | 1,324.30 | 334.89 | 931.68 | 2,189.12 |
| 2018 | 69,799.94 | 446.25 | 753.49 | 203.42 | 278.94 | 1,584.06 | 372.55 | 1,083.73 | 2,634.86 |
| 2019 | 71,387.83 | 591.26 | 994.19 | 264.69 | 438.86 | 2,105.20 | 479.03 | 1,393.56 | 3,019.41 |
| 2020 | 70,014.37 | 417.14 | 701.40 | 186.74 | 309.61 | 2,294.72 | 522.15 | 1,519.02 | 3,852.93 |
| 2021 | 72,393.67 | 635.73 | 1,102.46 | 303.66 | 480.61 | 2,168.45 | 495.32 | 1,438.07 | 5,043.30 |

Source: Central Bank of Nigeria (CBN) Statistical Bulletin for the Period under Review (1981-2021).

Interpretation of Result:

The descriptive statistics for the time series data for the dependent and independent variables are displayed in Table 4.2. This serves to illustrate how drastically the variables differ from one another.

Table 2

Descriptive Statistics Result

| | RGDP | CA | CES | CSCS | CT | RA | RES | RSCS | RT |
|----------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Mean | 37710.48 | 140.1839 | 254.0768 | 67.62902 | 89.88537 | 544.4973 | 143.5312 | 334.7600 | 770.1849 |
| Median | 26658.62 | 53.28000 | 200.8600 | 30.03000 | 30.18000 | 183.6400 | 53.01000 | 84.79000 | 225.1500 |
| Maximum | 72393.67 | 635.7300 | 1102.460 | 303.6600 | 480.6100 | 2294.720 | 562.7500 | 1519.020 | 5043.300 |
| Minimum | 16048.31 | 0.260000 | 0.660000 | 0.240000 | 0.000000 | 0.900000 | 0.170000 | 0.290000 | 3.390000 |
| Std. Dev. | 20309.83 | 167.3191 | 277.2858 | 80.03270 | 121.2006 | 676.6333 | 177.7833 | 455.8367 | 1144.687 |
| Skewness | 0.575311 | 1.293420 | 1.278565 | 1.185216 | 1.703957 | 1.139716 | 0.966095 | 1.256986 | 2.063245 |
| Kurtosis | 1.704524 | 4.102042 | 4.326478 | 3.634574 | 5.253665 | 3.236135 | 2.565152 | 3.356889 | 7.064861 |
| Jarque-Bera Probability | 5.128737 0.076968 | 13.50648 0.001167 | 14.17653 0.000835 | 10.28695 0.005837 | 28.51700 0.000001 | 8.971439 0.011269 | 6.700850 0.035069 | 11.01435 0.004058 | 57.31632 0.000000 |
| Sum | 1546130. | 5747.540 | 10417.15 | 2772.790 | 3685.300 | 22324.39 | 5884.780 | 13725.16 | 31577.58 |
| Sum Sq. Dev. | 1.65E+10 | 1119827. | 3075496. | 256209.3 | 587583.8 | 18313304 | 1264276. | 8311482. | 52412295 |
| Observations | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 |

The table above displays the descriptive statistics for the variables that were taken into account throughout our analysis. The average Real Gross Domestic Product (RGDP), capital expenditure on administration (CA), capital expenditure on Economic Services (CES), capital expenditure on Social and Community Services (CSCS) and capital expenditure on Transfers (CT), recurrent expenditure on administration (RA), recurrent expenditure on Economic Services (RES), recurrent expenditure on Social and Community Services (RSCS) and recurrent expenditure on Transfers (RT), between 1981 and 2021 are 37710.48, 140.1839, 254.0768, 67.62902, 89.88537, 544.4973, 143.5312, 334.7600 and 770.1849, respectively. RGDP is normally skewed since it possessed a skewness of 0.575311 which is equal to zero, and its distribution is flat peaked and had kurtosis of 1.704524 which is less than 3, hence it is **platykurtic**. Also, RES is positively skewed since it possessed a skewness of 0.966095 and **platykurtic** since its distribution is flat peaked and had kurtosis of 2.565152 which is less than 3. While CA, CES, CSCS, CT, RA, RSCS and RT are positively skewed since their skewness value of 1.293420, 1.278565, 1.185216, 1.703957, 1.139716, 1.256986 and 2.063245 respectively are greater than zero; RA and RSCS are **mesokurtic** since their distributions are normal and had kurtosis values of 3.236135 and 3.356889 respectively, which are approximately equal to 3; CA, CES, CSCS, CT and RT are **leptokurtic** indicating that their distributions are highly peaked relative to normal, as the kurtosis figure of 4.102042, 4.326478, 3.634574, 5.253665 and 7.064861 are greater than 3. The Jarque-Bera statistic (JB) for RGDP provide enough evidence to accept the null hypotheses of normality since the p-value of the JB statistic of 0.076968 is greater than 0.05. While Jarque-Bera statistic (JB) for CA, CES, CSCS, CT, RA, RES, RSCS and RT provide enough evidence to reject the null hypotheses of normality since the p-value of the JB statistic 0.001167, 0.000835, 0.005837, 0.000001, 0.011269, 0.035069, 0.004058 and 0.000000 respectively are less than 0.05.

Table 3

Summary of ADF Unit Root Test

| Variables | ADF Test Statistics | Mackinnon Critical Value @ 5% | P-Value | Oder of integration | Remark |
|-----------|------------------------|-------------------------------------|---------|------------------------|------------|
| RGDP | -3.288315 | -2.938987 | 0.0223 | 1(1) | STATIONARY |

| | | | | | |
|------|-----------|-----------|--------|------|------------|
| CA | -3.298088 | -2.954021 | 0.0231 | 1(1) | STATIONARY |
| CES | -7.775346 | -2.938987 | 0.0000 | 1(1) | STATIONARY |
| CSCS | -7.575142 | -2.938987 | 0.0000 | 1(1) | STATIONARY |
| CT | -9.505904 | -2.938987 | 0.0000 | 1(1) | STATIONARY |
| RA | -6.902106 | -2.960411 | 0.0000 | 1(2) | STATIONARY |
| RES | -5.400061 | -2.938987 | 0.0001 | 1(1) | STATIONARY |
| RSCS | -3.910152 | -2.938987 | 0.0045 | 1(1) | STATIONARY |
| RT | -7.756648 | -2.941145 | 0.0000 | 1(2) | STATIONARY |

According to the aforementioned table, the variables are stationary at the second difference 1(2) for RA and RT while it is at first difference 1(1) for RGDP, CA, CES, RSCS, CT, RA, RES, and RSCS.

Table 4
Result of Johansen Co-Integration Test

| Date: 12/13/22 Time: 13:21 | | | | |
|---|------------|-----------|----------------|---------|
| Sample (adjusted): 1983 2021 | | | | |
| Included observations: 39 after adjustments | | | | |
| Trend assumption: Linear deterministic trend | | | | |
| Series: RGDP CA CES CSCS CT RA RES RSCS RT | | | | |
| Lags interval (in first differences): 1 to 1 | | | | |
| Unrestricted Cointegration Rank Test (Trace) | | | | |
| Hypothesized | | Trace | 0.05 | |
| No. of CE(s) | Eigenvalue | Statistic | Critical Value | Prob.** |
| None * | 0.967150 | 449.8182 | 197.3709 | 0.0001 |
| At most 1 * | 0.917738 | 316.6021 | 159.5297 | 0.0000 |
| At most 2 * | 0.864478 | 219.1860 | 125.6154 | 0.0000 |
| At most 3 * | 0.685882 | 141.2399 | 95.75366 | 0.0000 |
| At most 4 * | 0.587819 | 96.07840 | 69.81889 | 0.0001 |
| At most 5 * | 0.572595 | 61.51301 | 47.85613 | 0.0016 |
| At most 6 | 0.395509 | 28.36210 | 29.79707 | 0.0725 |
| At most 7 | 0.187120 | 8.730728 | 15.49471 | 0.3909 |
| At most 8 | 0.016554 | 0.651020 | 3.841466 | 0.4197 |
| Trace test indicates 6 cointegrating eqn(s) at the 0.05 level | | | | |
| * denotes rejection of the hypothesis at the 0.05 level | | | | |
| **MacKinnon-Haug-Michelis (1999) p-values | | | | |

The result of the Johansen co-integration test presented above indicates six co-integration equations. The results therefore, confirm the existence of co-integration among the variables. Consequently, we can conclude that there is the existence of a long-run relationship between disaggregated analysis of public expenditure and economic development on Nigerian economy. Thus, our null hypotheses were rejected and alternative accepted.

Table 5
Granger Causality Test

| Null Hypothesis: | Obs | F-Statistic | Prob. |
|---------------------------------|-----|-------------|--------|
| CA does not Granger Cause RGDP | 39 | 1.15769 | 0.3263 |
| RGDP does not Granger Cause CA | | 3.87057 | 0.0306 |
| CES does not Granger Cause RGDP | 39 | 0.59527 | 0.5571 |
| RGDP does not Granger Cause CES | | 5.27351 | 0.0101 |

| | | | |
|----------------------------------|----|---------|--------|
| CSCS does not Granger Cause RGDP | 39 | 0.94322 | 0.3993 |
| RGDP does not Granger Cause CSCS | | 5.12995 | 0.0113 |
| CT does not Granger Cause RGDP | 39 | 0.49744 | 0.6124 |
| RGDP does not Granger Cause CT | | 4.93699 | 0.0131 |
| RA does not Granger Cause RGDP | 39 | 4.36409 | 0.0206 |
| RGDP does not Granger Cause RA | | 4.35753 | 0.0207 |
| RES does not Granger Cause RGDP | 39 | 0.60878 | 0.5498 |
| RGDP does not Granger Cause RES | | 4.86962 | 0.0138 |
| RSCS does not Granger Cause RGDP | 39 | 0.62948 | 0.5390 |
| RGDP does not Granger Cause RSCS | | 5.97305 | 0.0060 |
| RT does not Granger Cause RGDP | 39 | 2.21902 | 0.1242 |
| RGDP does not Granger Cause RT | | 5.68663 | 0.0074 |

CA does not granger causes RGDP ($0.3263 > 0.05$) while RGDP granger cause CA ($0.0306 < 0.05$) hence, there is unidirectional causality; CES does not granger cause RGDP ($0.5571 > 0.05$) while RGDP granger cause CES ($0.0101 < 0.05$) hence, there is unidirectional causality; CSCS does not Granger Cause RGDP ($0.3993 > 0.05$) while RGDP granger cause CSCS ($0.0113 < 0.05$), hence, there is unidirectional causality; CT does not Granger Cause RGDP since $0.6124 > 0.05$ while RGDP granger cause CT ($0.0131 > 0.05$) hence, there is unidirectional causality; RA granger cause RGDP ($0.0206 > 0.05$) while RGDP granger cause RA ($0.0207 < 0.05$) hence, there is bi-directional causality; RES does not granger cause RGDP ($0.5498 > 0.05$) while RGDP granger cause RES ($0.0138 < 0.05$) hence, there is unidirectional causality; RSCS does not granger cause RGDP ($0.5390 > 0.05$) while RGDP granger cause RSCS ($0.0060 < 0.05$) hence, there is unidirectional causality. RT does not granger cause RGDP ($0.1242 > 0.05$) while RGDP granger cause RT ($0.0074 < 0.05$) hence, there is unidirectional causality.

Table 6
OLS

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------------|-------------|-----------------------|-------------|----------|
| C | 21900.53 | 1367.183 | 16.01873 | 0.0000 |
| CA | 18.33039 | 44.84536 | 0.408747 | 0.6854 |
| CES | 5.538496 | 18.29723 | 0.302696 | 0.7641 |
| CSCS | 6.673195 | 77.21751 | 0.086421 | 0.9317 |
| CT | -44.27499 | 21.03321 | -2.105004 | 0.0432 |
| RA | 21.38970 | 14.25013 | 1.501017 | 0.1432 |
| RES | -2.783213 | 19.05377 | -0.146072 | 0.8848 |
| RSCS | 29.50830 | 17.50179 | 1.686016 | 0.1015 |
| RT | -7.483741 | 3.064174 | -2.442335 | 0.0203 |
| R-squared | 0.933599 | Mean dependent var | | 37710.48 |
| Adjusted R-squared | 0.916999 | S.D. dependent var | | 20309.83 |
| S.E. of regression | 5851.257 | Akaike info criterion | | 20.37789 |
| Sum squared resid | 1.10E+09 | Schwarz criterion | | 20.75404 |
| Log likelihood | -408.7467 | Hannan-Quinn criter. | | 20.51486 |
| F-statistic | 56.23992 | Durbin-Watson stat | | 0.968648 |
| Prob(F-statistic) | 0.000000 | | | |

$RGDP = \beta_0 + \beta_1 CA + \beta_2 CES + \beta_3 CSCS + \beta_4 CT + \beta_5 RA + \beta_6 RES + \beta_7 RSCS + \beta_8 RT + U$ Thus, using the absolute values of all the variables, the estimated parameters of the regression model is: $RGDP = 21900.53 + 18.33039CA + 5.538496CES + 6.673195 CSCS - 44.27499 CT + 21.38970RA - 2.783213 RES + 29.50830RSCS - 7.483741 RT + U$

From the coefficient of regression, the estimated model shows that there exist positive relationship between RGDP, CA, CES, CSCS, RA and RSCS; hence, the estimated result revealed that a unit change in CA, CES, CSCS, RA and RSCS will boost economic development of Nigeria by value of 18.33039%, 5.538496%, 6.673195%, 21.38970% and 29.50830% respectively.

While CT, RES and RT has negative relationship with RGDP indicating that a unit change in CT, RES and RT will lead to a decrease in economic development by 44.27499%, 2.783213%, and 7.483741% respectively. The coefficient of determination (R^2) is $R^2 = 0.933599$ which is 93.3599%. This implies that about 93.36% of the total variation were accounted for by the independent variables while 6.64% was unexplained and has been taken care of by the stochastic disturbance term or error term U during the period studied.

The Durbin-Watson statistic shows that there is presence of autocorrelation or serial correlation in the residual as its value of 0.968648, approximately 0.97 which is less than the Durbin-Watson value of 2 ($0.97 < 2$). The F-statistic of the regression output stood at 56.23992. This implies that the regression plane is statistically significant. Comparing Sign P-values with the chosen level of significance (0.05), it is observed that P-value 0.0432, and 0.0203 for CT, and RT are less than the chosen level of significance (0.05), the P-values 0.6854, 0.7641, 0.9317, 0.1432, 0.8848 and 0.1015 for CA, CES, CSCS, RA, RES and RSCS respectively are greater than 5% chosen level of significance. But for the overall level of significance, Prob.(F-Statistic) 0.000000 is less than the 0.05 level of significance; indicating that all the independent variables can jointly influence the dependent variable for the period under review; hence, our null hypotheses are rejected and alternative accepted.

Discussion of Findings

The results of this study confirmed those of other studies in related fields, such as Murita & Taiwo (2011), who examined government spending and economic development in Nigeria between 1970 and 2008 and found a positive relationship between real GDP and recurrent and capital expenditure; Jeff-Anyeneh et al. (2020), who looked at government spending and standard of living in an emerging market in Africa—Nigeria—between 1981 and 2008—and found a positive relationship between real GDP and recurrent and capital expenditure.

The study also supports the validity of the Keynesian Theory, which views public spending as an exogenous component that can be used as a tool for policy to encourage economic growth. According to Keynesian theory, government spending can promote economic expansion. Therefore, through multiplier effects on aggregate demand, a rise in government consumption is likely to result in an increase in employment, profitability, and investment.

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

Summary of Findings

RGDP and RES are **platykurtic**, CSCS, RA, and RSCS are **mesokurtic**, and CA, CES, CSCS, CT, and RT are **leptokurtic**, according to the descriptive analysis, which also showed that all the variables were normally distributed; All of the variables were stationary and significant at

their respective values. RGDP granger caused CA, CES, CSCS, CT, RES, RSCS, and RT, so it is unidirectional causality, however RGDP granger cause RA while RA granger cause RGDP, therefore there is bi-directional causality between the two.

The result of the Johansen co-integration test indicates six co-integration equations. The results therefore, confirm the existence of co-integration among the variables. Therefore, there is the existence of a long-run relationship between disaggregated analysis of public expenditure and economic development on Nigerian economy.

According to the estimated model's coefficient of regression, there is a positive relationship between RGDP, CA, CES, CSCS, RA, and RSCS; thus, the estimated result showed that a unit change in CA, CES, CSCS, RA, and RSCS will respectively boost Nigeria's economic development by of 18.33039%, 5.538496%, 6.673195%, 21.38970% and 29.50830% respectively. A unit change in CT, RES or RT will result in a decline in economic development of 44.27499%, 2.783213%, or 7.483741% respectively. However, these variables have a negative association with RGDP. The figure, 93.3599% is represented by the coefficient of determination (R^2), which is $R^2 = 0.933599$. This means that during the study period, the stochastic disturbance component or error term U took care of the unexplained 6.64% variance in the model specified, accounting for approximately 93.36% of the fluctuations.

The residual has a Durbin-Watson value of 0.968648, or around 0.97, which is less than the Durbin-Watson value of 2 ($0.97 > 2$). This indicates the presence of autocorrelation or serial correlation. The regression's output's F-statistic was 56.23992. This suggests that there is statistical significance for the regression plane. When sign P-values are compared to the chosen level of significance (0.05), it is seen that the P-values for CT, and RT are 0.0432, and 0.0203, respectively, while the P-values for CA, CES, CSCS, RA, RES, and RSCS are 0.6854, 0.7641, 0.9317, 0.1432, 0.8848 and 0.1015, respectively, are greater than the chosen level of significance (0.05). However, Prob.(F-Statistic) 0.000000 is less than the 0.05 level of significance for the overall level of significance ; indicating that all the independent variables can jointly influence the dependent variable for the period under review; as a result, our null hypotheses are rejected and the alternative is accepted.

Conclusion

The F-statistic of the regression output, which was 56.23992, indicates that the regression plane is statistically significant. Based on the analysis, the negative relationship of CT, RES and RT with RGDP indicates that a unit change in CT, RES or RT will result in a decrease in economic development by 44.27499%, 2.783213%, and 7.483741% respectively. A statistically significant link between the variables is also implied by the fact that the Prob. (F-Statistic) 0.000000 is smaller than the 0.05 level of significance. $R^2 = 0.933599$ indicates that the independent/explanatory power, accounted for around 93.36% of the variability, along with some of the public expenditure granger cause variables.

Therefore, governmental spending has a big impact on Nigeria's economic growth. In conclusion, public spending (both capital and recurring) is a key factor in the development of Nigeria's economy. This finding supports and is consistent with the Keynesian theory that government spending stimulates economic growth.

Recommendation

The study therefore, recommends that:

- i. The government should diversify its revenue sources to rely less on crude oil

- revenues, which would not be able to meet future levels of demand for capital and ongoing expenses that could spur Nigeria's economy into rapid growth;
- ii. If government expenditure is effectively handled, it will enhance employment and the nation's production capacity, which will boost Nigeria's economic growth;
 - iii. To raise the standard of living for Nigeria's poor citizens and to increase production and income, the government should spend more money on rural development, roads, water, and electrification;
 - iv. There should be a high level of accountability and transparency in how the government spends its money. Government should provide free administration and enforcement of the law, press freedom, and be serious in its battle against corruption in both the public and private sectors;
 - v. Policymakers should make a concerted effort to guarantee that the distribution of government spending to various economic sectors is well-supervised and that its spending is adequate in order to increase the rate of economic growth that would result in economic development in Nigeria.

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