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EFFECT OF GOVERNMENT AGRICULTURAL SPENDING ON AGRICULTURAL PRODUCTIVITY IN NIGERIA: 1986-2021

Kuzhe, Mevye Deborah Department of Economics, Bingham University, Nasarawa State, Nigeria

Obumneke Eze, PhD Department of Economics, Bingham University, Nasarawa State, Nigeria

Jonathan, Oniore. PhD Department of Economics, Bingham University, Nasarawa State, Nigeria

Abstract

The study examined the effect of Government agricultural spending on agricultural productivity in Nigeria using time series data covering 1986 to 2021. The study used expost-facto design with time series data collected from the Central Bank of Nigeria (CBN) publications and World Development Indicators (WDI). The study used government total spending on agriculture (GTSA), Government capital spending on agriculture (GCSA) and government recurrent spending on agriculture (GRSA) as explanatory variables of government spending on agriculture, while agricultural sector productivity (ASP) was proxied by agricultural sector contributions to the Gross Domestic Product (GDP) in Nigeria. The unit root test revealed different order of integration as it was only GCSA had 1(0) orders of integration, the rest had 1(1)order. The Bounds Cointregretion test revealed shows the presence of long-run relationship and. The ECM test revealed an adjustment speed of 24.36 percent. The disaggregated findings showed that government total spending insignificant positive effect, government recurrent spending on agriculture had an insignificant negative effect, while government capital spending had a significant negative effect on productivity in the sector. The Adjusted R Square indicated that 97.74 percent of the changes in ASP was due to changes in GTSA, GCSA and GRSA in the economy. The study concluded that agricultural spending has effect on agricultural productivity and recommends that government should take into cognizance the previous productivity level of the agricultural sector in formulating agricultural sector budgetary allocations policies and government should increase its capital spending on agriculture to improve agricultural sector productivity in Nigeria.

Keywords: Agriculture Spending, Government Capital Spending, Government Recurrent Spending, Agricultural Sector Productivity

JEL Classification Codes*:* E63, H59, Q14, C29

1. Introduction

Agriculture activities cover the entire range of technologies associated with the production of useful products from plants and animals, including soil cultivation, crop and livestock management, and the activities of processing and marketing. Ayunku and Etale (2015) noted that in Nigeria, the agricultural sector is a segment that is most critical to the achievement of the elusive goal of a diversified economy. The role of agriculture in the development of any economy can never be over emphasized. Agriculture provides food for the citizens, raw materials for the industries, employment, and income for the farmers, enhances society's well-being. The level of growth and development that Nigeria has attained today can better be explained by tracing the

contributions of agricultural sector to the Nigerian economy which predates independence. This could be linked to the fact that prior to the discovery of crude oil in Nigeria, the Nigerian economy was predominantly agricultural.

Unfortunately, however, agriculture has now failed to keep up with Nigeria's fast-growing population, and Nigeria now depends on food imports to sustain itself. The Central Bank of Nigeria (2018) reported that between 2010 and 2018, Nigeria has imported agricultural products worth a total of US$231,550,000. This ugly trend brought about general fall of domestic food supply, which led to augmentation of these shortages through foreign imports. Ewubare and Obayori (2015) also opined that there should be continuity and consistency of macroeconomic policy measures in the agricultural sector. This could be attributed to the fact that agricultural sector has high capacity to link with industrial sector and high value chain in the sector that can be used for further production.

Government spending is considered one of the most important and critical fiscal instruments of governance and a stabilization tool for promoting sustainable growth in productive sectors such as agriculture which is an essential ingredient for sustainable development in an economy. Government expenditure on agriculture is an integral component of government socioeconomic spending that targeted at raising productivity and output from the sector. Keji and Efuntade (2020) stated that government expenditure on agriculture growth is said to be the total allocative resources set assign from the annual budgetary allocation specifically meant for enhance agricultural output through crop and seedling development, procurement of fertilizer and mechanized tools, agricultural research and development among others, so as to attained economic growth objectives.

The government has introduced many agricultural sector reforms that include the Structural Adjustment Programme (SAP) in 1986 during the Babangida Regime, Operation Feed the Nation (OFN),Green Revolution, establishment of Colleges and Universities of Agriculture, construction of rural roads and irrigation dams, the FADAMA project, Central Bank of Nigeria Ancho Borrowers Scheme, N-agro and of recent the building of the maiden rice pyramid in Abuja launched in January 2022 by President Mohammadu Buhari among others. Despite these efforts, it has been observed that prices of agricultural products in domestic markets are still on the interest, and based on economic theory of demand and supply. This suggests that there exists a state of disequilibrium between aggregate supply and demand of agricultural products in the country. This could be attributed to the low level of productivity in the sector, caused by limited government spending in sector. It has been observed that if this problem is allowed to continue, the level of productivity in the agricultural sector will continue to decline and the country's dream of achieving sustainable development latest by the year 2030 may not be feasible.

Evidence from empirical literature revealed that scholars like Benin and Nin-Pratt (2015) concentrated on Africa; Benin, Mogues, Cudjoe and Randriamamonjy (2012) used Ghana, while Mogues, Fan and Benin (2015) carried out their study in Ethiopa. In Nigeria, Njidda (2020) concentrated on agricultural sector spending and economic growth. However, none of these studies concentrated on the effects of government agricultural spending on agricultural productivity in Nigeria and previous studies failed to capture the period 2021 which is more current considering perceived effect of Covid-19 pandemic on the economy and the dynamic nature of public spendings. Therefore, it is necessary to analyze country-specific effect of government spending in agriculture on agricultural productivity. The study was guided by the following specific objectives:

i. determine the effect of Government total agricultural spending on agricultural productivity in Nigeria
ii. examine the effect of government capital agricultural sector spending on agricultural productivity in Nigeria
iii. examine the effect of government recurrent agricultural sector spending on agricultural productivity in Nigeria

In the light of the objectives above, the study was analyzed the following hypotheses:

HO_1: Government total spending on agriculture has no significant effect on agricultural productivity in Nigeria

HO_2: Government capital spending on agriculture has no significant effect on agricultural productivity in Nigeria

HO_3: Government recurrent spending on agriculture has no significant effect on agricultural productivity in Nigeria

2. Literature Review

2.1 Conceptual Issues

Government Spending on Agriculture

Government spending is an integral component of government fiscal policy often use for economic stabilization. Government spending on agriculture entails the total amount of money expended or actually spent on the sector with the hope that its level of productivity will increase. According to Nosike and Ihuga (2019), government spending on agriculture in Nigeria is the total amount of money spent on agriculture in order to achieve its planned budget for the sector. Government expenditure is classified into two broad themes, namely recurrent and capital expenditures. Recurrent expenditures are spendings that repeated, mostly on consumption items that occur in a year such as salaries, wages and allowances. Capital expenditure has to do with government financial spending on capital or durable goods that are mostly reproductive in nature like roads, dams and electricity. Oziengbe (2013) defined capital expenditure as expenditure creating future benefits, as there could be some lags between when it is incurred in times of economic expansion. The authors added that the 10 per cent agriculture budget standard of the Maputo declaration has not been made in Nigeria. Alabi and Abu (2020) stated that not only that poor spending on agricultural sector has affected the sector's growth in terms of its contribution to the GDP alone; it has increased poverty and food insecurity in Nigeria. This may be so because a lot of farmers seem to lack access to financial resources and services necessary for higher productivity

Agricultural Sector Productivity

Measuring agricultural sector productivity in Nigeria entails assessing the contributions of the various components of agriculture which include food crop, cash crop, animal rearing and fishery among others. Agricultural sector productivity level has been on the decline and the situation seems to be deteriorating daily due to continuous decrease in public funding of the sector in Nigeria. Kareem, Bakare, Ademoyewa, Ologunla and Arije (2015) reported that in the 1970s agricultural contributed significantly to country's GDP but it declined from 65% in 1986 and to 48% in 1995. The Central Bank of Nigeria (CBN) (2018) reported that agriculture contribution to GDP in Nigeria declined from 27% in 2001 to 23% in 2014 and the crop sub-sector's contribution to GDP declined from 24% in 2001 to 21% in 2014. This suggests that for government to effectively increase the level of productivity in the agricultural sector which employees' substantial number of the labour force in Nigeria, the funding of the sector should make a public priority in national budgets. Charles, Onuchuku and Tamuno (2018) pointed out that despite the increase in public expenditure on the agricultural sector over the years, the state of agriculture in Nigeria still remains poor and largely underdeveloped as its contribution to Gross Domestic Product (GDP) has decreased and productivity has also declined.

2.2 Theoretical Framework

This study is anchored on the Keynesians theory put forward by a British economist, Keynes (1936) during the Great Depression in his book ''*The General Theory of Employment, Interest and Money''*. Keynes contrasted his approach with the aggregate supply- view of the classical economists that preceded his book. Keynesian theory presupposes that government intervention can stabilize an economy, especially during a recession when there is little money to spend. The theory regarded government spending as an exogenous factor which can be utilized as a policy instrument to promote economic growth in all sectors of the economy. This theory applies to the present study in the sense government spending on agriculture is a socioeconomic component of its expenditure that aims

at raising the productivity level of the sector. Therefore, an increase in the government spending in form of capital and recurrent expenditure to the agricultural sector will likely leads to an increase in the level of employment and investment in the agricultural sector through multiplier effects on aggregate demand hence higher agricultural productivity. The theory also applies to this study owing to the fact that the Nigerian economy is largely agrarian in nature where majority of the people see agriculture as their source of employment and livelihood. This implies that if government intervenes by increasing its spending on the agriculture, there will an increase in the productivity level of those engage in agricultural related activities in the economy in line with the multiplier and accelerator principles.

2.3 Empirical Review

Apata (2021) examined the effect of public spending on agricultural productivity in major agro-ecological regions in Nigeria, covering 1981 to 2018. Data were analyzed using simple percentages as descriptive statistics and three-stage simultaneous equations. The descriptive results revealed that less than 25% of this allocation was spent on agricultural developmental/capital project and that public expenditure on education, farm feeder roads and health care facilities of 4.3% would enhance agricultural productivity by 1%. The study recommended that harmonizing along with quality public spending on access to health care facilities, education and farm feeder roads would enhance agricultural productivity. This study is relevant to the current research because it was on agricultural spending and productivity in Nigeria. However, while the researchers used the three-stage simultaneous equations method, this study used the ARDL method of estimation.

Keji and Efuntade (2020) investigated the link between agricultural output growth and government spending in Nigeria from 1981 to 2018. of Autoregressive Distributed Lag (ARDL) regression was used. The results show that both short and long run effect of government spending on the growth of agricultural output in Nigeria. The study concluded that any disruption in government spending on agricultural sector would have adverse effect on agricultural output growth in Nigeria and recommended that government should re-double it efforts in terms food security proper channelization of loans across board with sustainable fiscal measures that can translate to actual growth. This study is relevant to the current research since it was on agricultural output growth and government spending in Nigeria, but while the researcher covered the period 1981 to 2018, this study will capture the period 1986 to 2021 to accommodate data not included in the previous study.

Alabi and Abu (2020) analyzed the impact of agricultural public expenditure on agricultural productivity in Nigeria using time series data covering 1981 to 2014. The study used Error Correction model and system of equations approach. The study revealed that although, recurrent and total agricultural public expenditure does not impact on agricultural productivity, agricultural public capital expenditure has positive impact on agricultural productivity which materializes with lag. The study recommended agricultural public expenditure should be realigned to favour investments in irrigation, research and development and rural development. The strength of this research lies on the fact that it captures the relationship between agricultural public expenditure on agricultural productivity in Nigeria and also used time series. However, its major weakness is that while the researchers used the ECM technique, the present research will employ the ARDL modeling method of analysis which does not only consider the lag periods, but captures the autoregressive relationship between variables.

Ahmed, Khan and Naeem (2019) evaluated the impact of government spending on agricultural growth in Pakistan using time series data for the period 1972 to 2014. The Error Correction Model (ECM) regression was employed for the long run and short run empirical estimation. The Co-integration test results showed the presence of a long run relationship among the variables as the coefficient of the ECM shows the speed of 53 percent to restore disequilibrium in case of any shock. The regression results revealed that public spending on education, health and road length had a positive influence on agriculture value addition in Pakistan. It was recommended need for the allocation of greater resources to education, health and transport and communication sectors for agricultural growth. This study is relevant

because it captures expenditure agricultural growth, but it was not delimited to agricultural spending.

3. Methodology

3.1 Research Design:

This study used the *expost-facto* design as a guide to this research because the study aims at examining the relationship between economic variables that cannot be manipulated since the time series data on variables have been gathered already.

3.2 Sources of Data:

This study used annual time series data on Government agricultural spending and agricultural productivity in Nigeria spending spanning the period 1986 to 2021. The years 1986 was selected because major macroeconomic reforms in the all sectors were introduced during the Structural Adjustment Programme (SAP), while the choice of 2021 was predicated on the fact that in macroeconomic variables like public spending to sector of the economy changes with time. The data were sourced from the publications of the Central Bank of Nigeria (CBN) and World Bank Indicators (WBI).

3.3 Model Specification:

The specification of the ARDL model showing both its short-run and long-run relationship is expressed as follows:

$$\Delta Y_t = \beta_0 + \beta_1 Y_{t-1} + \beta_2 X_{t-1} + \beta_3 Z_{t-1} + \sum_{i=1}^{p} \lambda_i \Delta Y_{t-i} + \sum_{i=1}^{p} \psi_j \Delta X_{t-i} + \sum_{i=1}^{p} \phi_j \Delta Z_{t-i} + \varepsilon_t \quad \text{.....(1)}$$

The autoregressive feature of the ARDL model in equation 1 shows that the current value of variables depends on its own lag value and the lag value of other explanatory variables. Hence, X, Y and Z are the explanatory variables that lead to changes in Y in addition to the lag value of Y itself. In The implicit form of the model specification of the relationship between agricultural sector spending and agricultural sector productivity is expressed as follows:

$$ASP_t = f(GTSA, GCSA, GRSA) \quad \text{.....(2)}$$

This study adopted the ARDL estimation technique applied in the empirical studies of Ahmad and Hasan (2016), Charles (2018), Edeh *et'al*.,(2020) and Okorie *et'al.*,(2020) with modifications in terms of variables used and time series data period covered. The explicit form of the Autoregression Distributive Lag (ADRL) regression technique employed in the analysis is as follows:

$$\Delta \ln(ASP)_t = \beta_0 + \beta_1 \ln(ASP_{t-1}) + \beta_2 \ln(GTSA_{t-1}) + \beta_3 \ln(GCSA_{t-1}) + \beta_4 \ln(GRSA_{-1}) +$$

$$\sum_{i=1}^{p} \lambda_i \Delta \ln(ASP_{t-1}) + \sum_{i=1}^{p} \psi_j \Delta \ln(GTSA_{t-1}) + \sum_{i=1}^{p} \phi_j \Delta \ln(GCSA_{t-1}) + \sum_{i=1}^{p} \theta_j \Delta \ln(GRSA_{t-1}) +$$

$$\lambda_i ECM_{t-1} + \varepsilon_t \quad \text{.....(3)}$$

Where:

ASP = Agricultural sector productivity

GTSA = Government Total spending on agriculture

GCSA = Government Capital spending on agriculture

GRSA = Government Recurrent spending on agriculture

t = Time period

The parameter λ indicates the speed of adjustment from long-run to short-run equilibrium level after a shock. The sign of the ECM_{t-1} must be negative and significant to ensure convergence of the dynamics to the long-run equilibrium. The expectation from economic theory is that GTSA, GCSA and GRSA>0.That is, the coefficient of GTSA, GCSA and GRSA are expected to be greater than zero or have positive effect on agricultural sector productivity in Nigeria.

3.4 Method of Data Analysis

4. Results and Discussion

Table 1: Summary of Results Descriptive Statistics

Variables	ASP	GCSA	GRSA	GTSA
Mean	3599.488	14.10444	22.06861	110.2033
Median	1360.450	5.625000	10.62500	42.70000
Maximum	14709.10	138.9200	76.60000	505.7700
Minimum	39.93000	0.340000	0.020000	0.390000
Std. Dev.	4617.429	24.89997	24.10170	148.6065
Skewness	0.224819	0.478269	0.377060	0.479518
Kurtosis	3.201832	3.16455	2.539503	3.082177
Jarque-Bera	9.062190	482.1850	4.933490	14.89050
Probability	0.110769	0.104300	0.084861	0.230584
Sum	129581.6	507.7600	794.4700	3967.320
Sum Sq. Dev.	7.46E+08	21700.29	20331.21	772935.8
Observations	36	36	36	36

Source: Author's Computation using Eviews 10.0

Table 1 revealed the findings from the descriptive analysis of the properties of the data. The results indicated that agricultural sector productivity (ASP) had a mean of 3599.488, government capital spending on agriculture (GCSA) had a mean of 14.10444, and government recurrent spending on agriculture had a mean coefficient of 22.06861, while government total spending on agriculture was estimated as 110.2033 respectively. This implies that government recurrent spending on agriculture was found to be higher than government capital spending in the sector.

Table 2: Summary of Phillip-Perron Unit Root Test

Variable	PP Coefficient	Critical Values	Order of Integration
ASP	-5.258308	-2.951125** (0.0001)	1(1)
GTSA	-6.892149	-2.951125** (0.0000)	1(1)
GCSA	-4.334587	-3.632900* (0.0016)	1(0)
GRSA	-8.616158	-2.951125** (0.0000)	1(1)

Note: * significant at 1%, ** significant at 5%
Source: Author's Computation using Eviews 10.0

The findings from the PP unit root test in Table 2 revealed that agricultural sector productivity (ASP), GTSA) and GRSA were integrated at first difference 1(1), while GCSA was integrated at level,1(0). The results of the unit root test show that the variables have different levels of integration which means that the Autoregressive distributive lag (ARDL) regression technique is the most appropriate method for estimating the model.

Table 3: Results of Bounds Cointegration Test

Test Statistic	**Value**	**Signif.**	**I(0)**	**I(1)**
F-statistic	9.007631	10%	2.37	3.2
K	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66

Source: Author's Computation using Eviews 10.0

The F-Bounds Test results in Table 3 revealed a coefficient of 9.007631 which is found to be greater than both the lower and upper bounds of 2.79 and 3.67 respectively. Therefore, the null hypothesis of no long-run relationship is rejected and the study concluded that there is long-run relationship between the variables, hence the need for the Error Correction Model (ECM) test.

Table 4: ARDL Error Correction Regression				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(ASP(-1))	0.007230	0.188558	0.038341	0.9700
D(ASP(-2))	-1.125047	0.179540	-6.266280	0.0000
D(ASP(-3))	-0.196130	0.070411	-2.785516	0.0146
D(GTSA)	5.423835	4.252468	1.275456	0.2229
D(GTSA(-1))	39.66590	4.939539	8.030285	0.0000
D(GTSA(-2))	2.462159	6.892928	0.357201	0.7263
D(GTSA(-3))	43.32452	6.285745	6.892503	0.0000
D(GRSA)	-21.16567	22.34065	-0.947406	0.3595
D(GRSA(-1))	244.2579	51.52528	4.740545	0.0003
D(GCSA)	-79.44242	18.09630	-4.389982	0.0006
D(GCSA(-1))	-7.569451	19.55864	-0.387013	0.7046
D(GCSA(-2))	29.57538	27.18755	1.087828	0.2950
D(GCSA(-3))	-84.87536	19.63335	-4.323019	0.0007
CointEq(-1)*	-0.243626	0.032016	7.609612	0.0000
R-squared	0.968356	Mean dependent var		4.533125
Adjusted R-squared	0.945503	S.D. dependent var		2681.888
S.E. of regression	626.0783	Akaike info criterion		16.01646
Sum squared resid	7055534.	Schwarz criterion		16.65772
Log likelihood	-242.2634	Hannan-Quinn criter.		16.22902
Durbin-Watson stat	2.313007			

Source: Author's Computation using Eviews 10.0

The estimated ECM in Table 4 revealed a coefficient of -0.243626 and a p-value of 0.0000 ($p<0.05$) and the coefficient is negative in support of the rule of thumb. This means that the speed of adjustment from a state of disequilibrium to a long-run equilibrium was estimated 24.36 percent.

Table 5: Results of ARDL Regression Estimation

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
ASP(-1)	1.250856	0.227098	5.507995	0.0001
ASP(-2)	-1.132277	0.328775	-3.443927	0.0040
ASP(-3)	0.928917	0.219041	4.240840	0.0008
ASP(-4)	0.196130	0.097478	2.012039	0.0639
GTSA	5.423835	7.650797	0.708924	0.4900
GTSA(-1)	33.11720	5.969462	5.547770	0.0001
GTSA(-2)	-37.20374	7.536460	-4.936501	0.0002
GTSA(-3)	40.86236	11.26734	3.626620	0.0027
GTSA(-4)	-43.32452	8.828261	-4.907480	0.0002
GRSA	-21.16567	31.24392	-0.677433	0.5092
GRSA(-1)	204.8336	80.21560	2.553538	0.0230
GRSA(-2)	-244.2579	65.56682	-3.725328	0.0023
GCSA	-79.44242	25.44457	-3.122176	0.0075
GCSA(-1)	16.67033	31.76803	0.524752	0.6080
GCSA(-2)	37.14483	36.44335	1.019248	0.3254
GCSA(-3)	-114.4507	44.11473	-2.594388	0.0212
GCSA(-4)	84.87536	27.12578	3.128955	0.0074
C	358.6244	305.7142	1.173071	0.2603
R-squared	0.989780	Mean dependent var		4039.919
Adjusted R-squared	0.977370	S.D. dependent var		4719.051
S.E. of regression	709.9061	Akaike info criterion		16.26646
Sum squared resid	7055534.	Schwarz criterion		17.09094
Log likelihood	-242.2634	Hannan-Quinn criter.		16.53975
F-statistic	79.75519	Durbin-Watson stat		2.313007
Prob(F-statistic)	0.000000			

Source: Author's Computation using E-views 10.0

The estimated ARDL regression in Table 5 revealed that agricultural sector productivity (ASP) at lag one had a coefficient of 1.250856 and p-value of .0001. Thus, a unit increase in ASP (-1) leads to a 1.251 percent increase in the current value of ASP. This implies that the previous year value of ASP was found to have a significant positive effect on the current value of ASP was significant in the second year period as $p<0.05$). The estimates indicated that the current value of GTSA with a coefficient of 5.423835 and p-value of 0.4900 was found to have an insignificant positive effect on ASP, while GRSA with a coefficient of -21.16567 and p-value of 0.5092 had an insignificant negative effect on the current value of ASP. However, GCSA in the current period was also found to have a significant negative effect on the current value of ASP in Nigeria. The adjusted R square revealed that 97.74 percent of the changes in agricultural sector productivity within the period was due to changes in GTSA, GRSA and GCSA, while the remaining 22.26 percent was attributed to other factors captured by the error term. The F-statistics with a coefficient of 79.75519 and p-value of .000000 or $p<0.05$ implies that the overall model estimated was significant and useful for policy formulation. Also, the Durbin Watson (DW) coefficient of 2.31007 means that there was no sign of serial correlation in the model, and AIC was found to be best information criterion because it has the lowest value.

Table 6: Summary of Model Robustness

Test		Coefficient	P-value	Decision
Breusch-Godfrey-Serial Correlation	F-Stat.	0.465781	0.6385	N.S.C
Heteroscedasticity Test	F-Stat.	0.544663	0.8824	N.H
Ramsey RESET Linearity Test	F-Stat.	2.451151	0.1414	M.L

N.S.C=no Serial Correlation, N.H= no Heteroscedasticity, M. L=Model is Linear
Source: Author's Computation using Eviews 10.0

The tests of robustness of the estimated model revealed that the model was free from the problem of serial correlation that can leads to spurious results and there was no heteroscedasticity, which means the model was homoscedastic meaning the variance was found to be constant. The Ramsey RESET test indicated that p>0.05, as a residual test shows that the model was correctly specified and that linearity exists.

4.1 Discussion of Findings

The findings from this study revealed that government recurrent spending on agriculture was found to be higher than its capital spending in the sector. Edeh *et'al,* (2020) in their study found that capital expenditure is positively related to agricultural output and it is also statistically significant at 5 % in the current year. It was also found that the impact of capital expenditure on agricultural output begins to weaken after one year and recurrent expenditure had a negative and insignificant impact on agricultural output. It was revealed the government total spending on agriculture has positive but insignificant effect on agricultural sector productivity. This could be linked to the fact that despite agreement by African countries that 10 percent of every country's budget is supposed to go to agriculture, this has not always been the case in Nigeria. Oyaniran (2020) reported that the share of agriculture in Nigeria's total export earnings remains small compared to crude oil exports such that in 2019, agriculture accounted for less than 2 percent of total exports relative to crude oil 76.5 percent.

Furthermore, the findings revealed that government recurrent spending on agriculture had an insignificant negative effect on agricultural sector productivity, while government capital spending had a significant negative effect on productivity in the sector. Apata (2021) reported found that less than 25% of this allocation was spent on agricultural capital project. This suggests that although both components of agricultural sector spending have impacted negatively on productivity in the sector, government capital spending have not been able to add significant value to the level of productivity in the sector. This could be attributed to the high rate of corruption in the country. Alabi and Abu (2020) stated that not only that poor spending on agricultural sector has affected the sector's growth in terms of its contribution to the GDP alone; it has increased poverty and food insecurity in Nigeria. The results for the joint effect of the different components of government spending on agriculture on productivity in the sector revealed that there are significant determinants of productivity in the sector because changes in these variables explained about 97.74 percent of the changes in agricultural sector productivity with the period in Nigeria. Nosikes and Ihugba (2019) also established that total government spending on agriculture (TGSA) has significant effect on agriculture output (AGDP) in the long and short-run.

5. Conclusion and Recommendations

The results of this empirical study revealed that agricultural sector productivity in the current period is

significantly related to its previous period level of productivity. The disaggregated findings showed that government recurrent spending on agriculture had an insignificant negative effect on agricultural sector productivity, while government capital spending had a significant negative effect on productivity in the sector. The conclusion therefore is that agricultural spending has significant effect on agricultural productivity in Nigeria.

In the light of these findings, the following recommendations have been made among others:

i. There need for government to take into cognizance the previous productivity level of the agricultural sector in formulating its agricultural sector budgetary allocations for the current year so as increase the level of productivity in the sector.
ii. Government should increase its capital spending on agriculture so as to enhance diversification in the sector and increase the contributions of this component to agricultural sector productivity in Nigeria.
iii. Government should ensure consistency and sustainability in its agricultural spending with less emphasis on recurrent spending as that would help to improve agricultural sector productivity in Nigeria.

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