
**Re-Examination Of Nigeria Agricultural Expenditure: Governance
Perspectives**

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Abstract:

The weapon of every growing economy can be associated with governance, as good governance put all action and inaction in one basket and make sure that is channel through transparent, effective, and accountable to provide enabling atmosphere for the economy to strive for the betterment of the citizen. It is on this remark, this study investigates the effect of governance in the agricultural expenditure in Nigeria, Error Correction mechanism was employed on the time-series data collected from National statistics bulletins and the empirical results revealed that accountability and corruption control have a positive and statistically significant effect on the agricultural expenditure in the short run within the sample period. However, the agricultural output was found to have a decline effect on the agricultural expenditure in the short run in Nigeria. This study, therefore, recommended that the government at all levels should ensure that corrupt governance is fought or reduced to a minimum level in order to achieve an effective allocation of funds to the agricultural sector to improve performance and contribution to economic growth and development. Accountability should be adopted in every level of government to reduce waste, encourage competence and consistency, liable, responsible to promote investment, and ethics.

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1. Introduction

It is the absence of good governance that is responsible for the misappropriation of national and private treasuries by those who were put in the position of power. The processes in which the institutions produce results that meet the needs of society while making the best use of resources at their disposal and characterized with efficiency, effectiveness, integrity, discipline, accessibility, transparency and accountability as well as stability to provide the needs of its immediate environment refers to good governance or otherwise. Agricultural spending as a concept entails the proportion of national budget spend on the agricultural sector to increase farm yields that meet the specific objectives of the provision of adequate food, fibers, and industrial raw materials, employment and foreign exchange generation (Titilola, 2014 cited in Adebayo & Olagunju, 2015). In recent times due to the rising of macroeconomic instability couple with food insecurity, many have been pointed doubt at less developed countries governance especially Nigeria, for over-dependence in oil and abandoning the agricultural sector in the hands of a poor rural farmer with low output as a result of bad governance. The agricultural expenditure and governance are correlated, good governance providing an administrative authority that will improve the sector through efficient allocation of resources for sustainable development (Olowo-Okereke, 2015). Lio and Liu (2008) opined that an increased relationship exists between agricultural productivity and governance indicators (rule of law).

Before the oil boom of the 1970s, Nigeria's agricultural sector was a major exporter of palm produce, cocoa, groundnut, cotton, and rubber. Others produced food crops includes cassava, millet, groundnut, soya beans, yam, maize, and sorghum to the size that there was barely any need for the importation of food. This made the sector plays a paramount key function in contributing to the considerable share of Nigeria's gross domestic production (GDP). For instance, statistics have shown that 42.07% of 2008 total real GDP growth was contributed by agricultural sector (National Bureau Statistics {NBS}, 2007 and Central Bank of Nigeria {CBN}, 2008), generated 70 percent employment, accounts for about 60 percent of the non-oil exports and, provides over 80 percent of the food needs of the country (Oji-Okoro, 2011; Adebayo & Olagunju, 2015; CBN, 2018).

However, there was a whopping decline in the agricultural sector's contribution to the real GDP, between 2010 and 2015, from 23.89% to 20.63% and started to pick from 20.85% in 2017 to 21.20% in 2018 respectively (World Bank, 2018 and CBN, 2018). Food demand exceeds the supply, for example in 2016; the total demand for Rice was 6.3 million tons while only 2.3 million was supplied into the economy, the demand for Wheat was 4.7 million while only 0.06 million was supplied, the demand for Fish was 2.7 million and only 0.8 million was supplied, the demand for Cocoa was 3.6 million and only 0.25 million was supplied, the demand for Tomato

was 2.2 million and only 0.8 million was supplied into the economy (Federal ministry of agriculture and rural development, 2016 cited in Idoko, & Jatto, 2018), thus, the shortage in the supplies of agricultural outputs against a huge economy lead to large importations of food, which further erodes the economies foreign exchange. These low contribution of the sector was influenced by rising insecurity, recession experienced in late 2015, poor agricultural extensive system, low involvement in the agricultural system or import-dependent of agricultural output and bad governance.

In the same manner, these set back are claimed by many to be hinged mainly on government neglect following the discovery of oil and its subsequent boom. The agricultural sector became detrimental in such a manner that farming is left in the hands of local farmers with their crude use of farming implements which depends mostly on the manual application as well as resistance to using of improved seedlings and techniques that would have earned them abundant harvest. A large portion of the population scrambles for survival on the single attractive sector of the economy which has denied the real sector the needed attention (shittu, 2017). The major and most important resources the country has to look into is not Oil, not mining, not agriculture but governance, selfless governance with transparency, accountability and efficiency that gives unbiased rule of law and corruption in the management of agricultural sector through proper and sustainable policies, mechanisms and practices to enhance the capacity of agricultural research institutions, the capacity of technology-supply industries, and the schooling and extension education of rural people.

In this background, it was argued that governance is essential to agricultural development and ongoing processes of democratization, civil society participation, public sector management reforms, and corruption control hold great potential for improving agricultural performance (World Bank, 2007). On this note over the years, Nigeria government have been modeling different agricultural policies such as; Farm Settlement Scheme (FSS) in 1959, National Accelerated Food Production Programme (NAFPP) in 1972, Agricultural Development Projects (ADP) in 1974, Operation Feed the Nation (OFN) in 1976, River Basin Development Authorities (RBDAs) in 1976, National Fadama Development Project (NFDP) in 1990, National Special Programme on Food Security (NSPFS) in 2002, Root And Tuber Expansion Programme (RTEP) in 2003, Youth Initiative for Sustainable Agriculture (YISA) from 2014-2017, Anchor Borrowers Programme (ABP) in 2015, Presidential Fertilizer Initiative (PFI) in December 2016, Youth Farm Lab (YFL) in 2017, Presidential Economic Diversification Initiative (PEDI) in 2017, Food Security Council (FSC) in 2018 and Livelihood Improvement Family Enterprise (LIFE) in 2019.

All these were initiated in order to improve the productive output of the agricultural sector, yet the sector contributions to national output remain very low and the sector expenditure maintains an increase from 33.30% in 2012 to 50.26%, 53.99% and

54.21% in 2017, 2018 and 2019 respectively. This had prompted many researchers and policymakers, on what is responsible for the persistent low agricultural output, is it the inefficient of the governance in terms of allocation of the resources or policy formulation or implementation because effective, accountable, and efficient governance is found to have an appreciating effect on agricultural output. It was also recognized that, even though a country has the potential to develop and use modern technologies, its economic performance may still be disappointing if its governance is insufficient, inappropriate or fails. An obvious example is a government that has failed in internal aggressive war and local conflict which destroy law enforcement and the effectiveness of the government, thus discouraging and even preventing local agricultural production, leading to mass starvation and insurgency like in the case of kidnapping, vandalization of agricultural output, ethnoreligious crises, herdsman farmer's clashes, Boko haram insurgency, Niger Delta militants, etc. Hence, it is in this respect that this study seeks to investigate the relationship between governance and agricultural expenditure in Nigeria. This study answered these questions. What is the effect/relationship between governance and agricultural expenditure in Nigeria?

The intention of this study is to explore the potential of agriculture in Nigeria through good governance and contributed to literature gap on the effect of governance on agricultural expenditure Nigeria, previous studies (Me´on & Weill, 2005; Ewubare, & Eyitope, 2015; and Ekundayo, 2017) lay emphasis on the relationship between governance, economic growth and development, foreign direct investment, macroeconomic efficiency, and agricultural efficiency. Others measure the effect of governance on agricultural productivity (Lio & Liu, 2008; Mandemaker, Bakker & Stoorvogel, 2011; and Abolhassani, Fatemeh & Shahnoushic, 2015). To the best of researcher knowledge, there is no accessible study that has attempted to measure the relationship between governance and agricultural spending in Nigeria. Therefore, this study responds to the identified gap by examining the relationship between the two and adopted appropriate estimation techniques, pre-test, diagnostics, and stability tests that provide robust results for policy implication in Nigeria. Going with the current economic crises globally, due to pandemic disease, governance must devise strategies and synergies towards good governance in order to stand economy to fight back on reviving the world economy and this is best possible through the agricultural output to enhance food security and export.

2. Literature Review

This study adopted the Keynesian theory of government expenditure as a theoretical framework. The choice was based on the assumption of the theory that the government plays a very vital role in the economy through expenditure policy which increases aggregate demand thus an effective investment in the essential sector of the economy. According to Keynes (1936), increased government spending raises aggregate demand and hence consumption, which leads to increased productivity.

An increase in government spending has an expansionary effect on output and income while a decrease has a contractionary effect on output and income. Since increased government spending improves productivity through effective demand as opined, effective and transparent governance allocates reasonable resources to a particular sector that will improve the living standard of the economy. It then means that good governance provides the entire fiscal expenditure framework that will benefit the citizens and spend all the available resources to promote infrastructural development including an increase in agricultural expenditure to achieve more output, employment, and economic growth and development. On this observation, the theory fundamental functional relationship is given as:

$$AG = F(C + I + G) \quad (1)$$

Where: AD represents aggregate demand which equals the sum of consumption (C), Investment (I), and government expenditure (G). the theoretical explanation is that these three components determine the aggregate demand in the economy, that is when government increase expend applying efficient allocation of the resources AD increases which influences consumption thus investment. In essence, the right-hand equation determines the lift hand equation. This demonstrates that effective and transparent government expenditure, for instance, the agricultural expenditure can increase agricultural output thus improve aggregate demand. This is supported by the empirical studies of (Lio & Liu, 2008; Mandemaker, Bakker & Stoorvogel, 2011; and Abolhassani, Fatemeh & Shahnoushic, 2015), they concluded that agricultural production to increase without excessive expansions of the agricultural area but governance issues should be resolved because governance indicators used were found to have a positive and significant effect on agricultural productivity in the study areas. Based on this, equation 2.1 can be rewritten to substitute agricultural expenditure for aggregate demand and governance for C + I + G since the theory recognizes government intervention to improve societal wellbeing through effective, accountability, transparency and obey of rule of law. The functional model of this study is presented:

$$AGE = F(GOV_i) \quad (2)$$

Where: AGE denotes agricultural expenditure, GOV is governance and i represent governance indicators.

3. Methodology

Given the equation 2 relationships, agricultural expenditure depends on governance. Governance was measured as accountability and corruption control and agricultural output used as a control variable sourced from (World bank, 2019) report on Nigeria while agricultural expenditure sourced from (CBN, 2019) public finance statistical bulletin. Hence, equation 2 can be presented as:

$$AGE = F(ACC + COC + AGP) \quad (3)$$

Where: AGE is an agricultural expenditure, ACC represents accountability, COC denote corruption control and AGP conceives as agricultural output. The econometric linear relationship of the model estimated is given:

$$AGE = \alpha + \beta_1 ACC_t + \beta_2 COC_t + \beta_3 AGP_t + \mu t \quad (4)$$

Where: t = time period taken annual from 1990, 1992, 1993, ..., 2019, α is constant, $\beta_1 - \beta_3$ are the coefficients estimated and is expected to have a positive effect on the dependent variable within the sample period and a prior of the variables are expressed as;

Accountability – an extent in which government is liable, answerable and responsible to account for her active and inactive. It is expected that good governance should have an appreciating effect on agricultural expenditure hence, agricultural output and economic growth because the accountable government allowed any essential intended fund and power under him/her to be accounted for its purpose. **Control of corruption** - corruption refers to the extent to which power is abused for private goals and gain while corruption control is the direct opposite. The variable expected to have positive on agricultural expenditure because where corruption is controlled or minimized power and funds are used for what they were intended. **Agricultural output** – total contribution of agricultural product to GDP. It is also expected to have a plus effect on agricultural expenditure. Since, increase agricultural output all things being equal mean increase agricultural export earning, thus more agricultural expenditure will be expected to enlarge the output for more revenue earnings and development.

4. Empirical results and Discussion

The descriptive statistics of the study variables employed in the analysis are presented in table 1:

Table 1: Descriptive Statistics

	AGE	ACC	COC	AGP
Mean	22.76400	-0.851667	-1.169000	24.34100
Maximum	65.40000	-0.280000	-0.890000	36.97000
Minimum	0.210000	-1.760000	-1.430000	19.99000
Std. Dev.	20.92441	0.471915	0.131918	3.891267
Observations	30	30	30	30

Source: Author's computation (2020)

The summary statistics showed that the mean values for AGE, ACC, COC and AGP over the period of study are 22.76, -0.85, -0.17 and 24.34 respectively and the

deviation from the mean scores were 20.92, 0.47, 0.13 and 3.89. This indicates that the data points are far from mean and AGE has the highest deviation.

The process to estimating the empirical model of the study involved testing first, the individual behavior of the time series data towards obtaining the appropriate analytical method to be adopted in the estimation. In the like manner, the Augmented Dickey-Fuller (ADF) tests for unit root was conducted and the results given in table 2:

Table 2: ADF test for unit root results

Series	Level ADF	Prob.	First Difference ADF	Prob.
AGE	2.550482	0.1150	6.106497	0.0000
ACC	1.533892	0.5021	4.051392	0.0043
COC	0.502616	0.8730	4.263791	0.0033
AGP	1.645771	0.4459	6.037902	0.0000

Source: Author's computation (2020)

The null hypothesis of the tests has it that a particular series has unit root. Hence, table 2 revealed that all the variables in the model are stationary at first difference. Haven ascertained the properties of the variable and the results shows rejection of null hypothesis, hence f-statistic bounds test and Johansen co-integration test for long run relationship was established shown in table 3. However, before the test of a long-run relationship, test for multicollinearity was conducted (see appendix) and the centered variance inflation factor (VIF) was less than 10 for AGE, ACC, COC, and AGP. That is, the variables are not highly correlated.

Table 3: Results of the Bounds and Johansen test

Test Statistics	Value	Significance	I(0)	I(1)
F-statistics	4.279786	10%	2.37	3.2
	3	5%	2.79	3.67
Trace Statistics	One co-integrating equation at the 5% level			

Source: Author's computation (2020)

Note: the automated lag selection was used to determine the maximum lag length

Given that the F-statistics value (4.28) is greater than the upper boundary at 10% and 5% level of significance and trace statistics shows 1 co-integrating equation the null hypothesis that there is no long-run relationship among the variables was rejected, implying that the explanatory variables have a long-run relationship with the explained variable. Thus, since the variables are stationary at first difference and the model contain only one single equation justification for the use of Error Corrections Model (ECM). The ECM was then estimated to capture only the long-run effect of

accountability, corruption control and agricultural output on the agricultural expenditure in Nigeria. The estimation is presented in table 4:

Table 4: result of ECM Estimation (dependent variable: AGE)

Independent variables	Coefficient	T-statistics	Probability
D(ACC)	60.84132	4.299591	0.0026
D(COC)	57.68998	2.970776	0.0178
D(AGP)	-1.771011	-1.830453	0.1046
CointEq(-1)*	-2.685350	-5.665545	0.0005
R²	0.917815	Adjusted R ²	0.828780
DW-statistics	2.227284		

Source: Author's computation (2020)

The ECM result shows that accountability (ACC) and corruption control (COC) have positive and statistically significant effect on agricultural expenditure in Nigeria within period of the study. Specifically, a percentage increase in ACC and COC will lead to an average of 60.8 and a 57.9% increase in agricultural expenditure. Thus, increased governance in the economy enhances growth of agricultural output. In contrast, agricultural output has a negative and statistically significant effect on the agricultural expenditure at 10% of the level in Nigeria. That is, one percent increase in agricultural output will lead to an average of 1.8 percent decrease in agricultural expenditure. This implying that in the short run increasing agricultural output does not mean improving agricultural expenditure in Nigeria rather improve in the environment, political atmosphere, socioeconomic and macroeconomic management. This finding is contrary to this study a prior expectation and (Iganiga & Unemhilin 2011 and Abula & Ben, 2016) who's found that bidirectional relationship exist between the two variables.

The coefficient of error correction term (CointEq(-1)) is negative, but greater than 1 and statistically significant which indicates the high speed of adjustment to equilibrium after a shock, and therefore shows over-correction of the deviations or disequilibrium in agricultural expenditure will be corrected within one year. Coefficient of determination (R²) which shows the variation in dependent variable explained by explanatory variables. The result revealed that the endogenous is 92% explained by exogenous variables in the model. This is a good fit model. In essence, the accountability, corruption control and agricultural output variables used can bring about 92% changes in agricultural expenditure in Nigeria while the remaining 8% were factors outside the model. Durbin Watson statistics show the absence of autocorrelation in the model since the value is within the required of 2.

At this end, classical assumptions (normality, autocorrelation, and heteroscedasticity test) of the model employed were carried in table 5 to determine the appropriateness

of the techniques of analysis employed to estimate the model. These are classified into diagnostics and stability test given below:

Table 5: diagnostic and stability test

Diagnostics test		
Assumptions	Test	Prob.
Normal	Jarque-Bera	0.950
Serial correlation	Breusch-pagan	0.056
Heteroscedasticity	Breusch-pagan	0.459
Stability test		
CUSUM	Stable	
CUSUMQ	Stable	
Ramsey RESET test	Correct specification (0.618)	

Source: Author’s computation (2020)

The upper part of table 5 is the results of the diagnostic showing that the classical assumptions of Normality, Serial correlation and Heteroscedasticity, the model passed the test. That is, the residual of the model is normally distributed, not serial correlated, and homoscedastic. Based on these it is concluded that the parameters estimated possess the BLUE property of best, linear, and unbiased estimation which means policy implication can be drawn from the findings of this study.

The lower boundary of table 5 is the stability results which revealed estimated parameters of the model are stable and well specify over the sample period. This validates the upper panel result and concludes that the required level of significance is greater than 5%, thus accept the null hypothesis.

5. Conclusion and Policy Implications

Agriculture is one of the largest employers of labor in Nigeria, so for the sector to maintain this essential role and many others, policies and programs have been introduced by the past and present government to strengthen and promote the contribution of the sector to economic growth and development. However, despite these initiatives and consistent budget allocation to the sector to ascertain the diversification of the economy, its contribution to national output is still questionable due to poor governance. It was on this note this study investigates the effect of governance on the agricultural expenditure in Nigeria. The findings revealed that governance indicators used (accountability and corruption control) have an appreciating and statistically significant effect on the agricultural spending in Nigeria within the sample period. Contrarily, it was also discovered that agricultural output has a statistical significance and declining effect with agricultural financial outlay. In general, governance has a stimulating impact on agricultural expenditure. That I good governance always shows corruption free and accountable

for all her actions, financial, social and regulation to pave ways for transparency and effectiveness, hence economic growth and development. Based on, policy implications are:

1. The government at all levels should ensure that corrupt governance is fought or reduced to a minimum level in order to achieve an effective allocation of funds to the agricultural sector to improve performance and contribution to economic growth and development.
2. Accountability should be adopted in every level of government to reduce waste, encourage competence and consistency, liable, responsible, reduce corruption, and promote good governance, investment, and ethics.
3. The government should encourage good governance that will maintain environmental, political, socioeconomic and macroeconomic stability to achieve a reasonable agricultural contribution to Gross Domestic Product. This is because the agricultural output is found to have a diminishing and statistical significance relationship with agricultural expenditure in the short run, that is increasing agricultural output does not mean improving agricultural expenditure in Nigeria rather improve achieved above through good governance,

References:

- Abolhassani, C. Fatemeh A. K., and Shahnoushic D. (2015). The impacts of government expenditure on agricultural transformation. *Journal of economics development* 1(9), 23-27.
- Abula, M., and Ben, D. M. (2016). The impact of public agricultural expenditure on agricultural output in Nigeria (1981-2014) *Asian Journal of Agricultural Extension, Economics & Sociology*, 11(2), 1-10.
- Adebayo, O. and Olagunju, K. (2015) "Impact of Agricultural innovation on improved livelihood. *Journal of agriculture and economic development* 12(1), 234-241.
- Central Bank of Nigeria (2018). Statistical bulletin: public finance statistics. Abuja: Author. Retrieved from https://www.cbn.gov.ng/Out/2019/STD/2018%20Statistical%20Bulletin_Public%20Finance%20Statistics.xlsx
- Ekundayo, W. J. (2017) Good governance theory and the quest for good governance in Nigeria. *International journal of humanities and social sciences*. 7(5), 154-161.
- Ewubare, D. B., and Eyitope, J. A. (2015). The effects of public expenditure on agricultural production output in Nigeria. *Journal of Research in Humanities and Social Science*, 3(11), 7 – 13.
- Idoko, C. U., and Jatto, S. M. (2018) Government expenditure on agriculture and economic growth in Nigeria 1985-2015. *International journal of academic research & reflection*. 6(4), 2309-0405.

- Iganiga, B.O. and Unemhilin, D.O. (2011). The Impact of Federal Government Agricultural expenditure on Agricultural Output in Nigeria. *Journal of Economics*, 2(2), 81-88.
- Keynes, J. M. (1936). *The general theory of employment, interest and money*. London: Macmillan.
- Lio, M., and Liu, M.C. (2008). Governance and agricultural productivity: A cross-national analysis. *Journal of Food Policy*, 33(3), 504-512.
- Mandemaker, M., Bakker, M., and Stoorvogel, J. (2011). The role of governance in agricultural expansion and Intensification: a global Study of arable agriculture. *Ecology and Society* 16(2), 8 – 17.
- Méon, P. G., and Weill, L. (2005). Does better governance foster efficiency? An aggregate frontier analysis. *Economics of Governance*, 6(1), 75-90.
- National Bureau of Statistics. (2007). *Annual statistical bulletin*. Abuja: Author
- Oji-Okoro, I. (2011). Analysis of the contribution of the agricultural sector on the Nigerian economic development. *World Review of Business Research*, 1(1), 191 – 200.
- Olowo, Okere, E. D. (2015). *Full Perspectives: Locally and Globally*" Lagos: ICAN 40th Year Anniversary Lecture/Symposium. June 21th, 2015.
- Okezie, A. I., Nwosu, C., and Njiku, A. C. (2016). An Assessment of Nigeria Expenditure on the Agricultural Sector: Its Relationship with Agricultural Output. *Journal of Economics and International Finance*, 5(5), 177-186.
- Shittu, A. M.. (2017). Economic diversification in Recession: a case of Nigeria agriculture as a sign post of national development and sustainable growth. *International journal of advance studies in economics and public sector management*, 5(1), 52-73.
- World Bank. (2007). *Strengthening World Bank Group Engagement on Governance and Anticorruption*, Washington, D.C: World Bank
- World Bank Group. (2018). *Statistical Indicator for Nigeria*. Retrieved from <https://data.worldbank.org/country/nigeria>.
- World Bank Group. (2019). *Statistical Indicators for Nigeria*. Retrieved from <https://data.worldbank.org/country/nigeria>.