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ORIGINAL ARTICLE

AGRICULTURAL SECTOR OUTPUT FINANCING AND FOOD SECURITY IN NIGERIA

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Abstract

The study investigated the relationship between agricultural sector output financing and food security in Nigeria. Food security was measured by food productive index while agricultural financing used proxies such as government expenditure on agriculture, agricultural guarantee scheme fund loan, fertilizer and annual rain fall. The unit root results showed that variables are integrated of order 1 (0), hence fostering the need to conduct the Co-integration tests. The Co-integration tests disclosed a long-run relationship among the variables given the fact that both the Trace statistic Max-Eigen statistic tests proved that are two co-integrating relationship among the variables used. This confirmation of a long run relationship from the Co-integration tests suggests the need to conduct or apply the Error Correction Mechanism to find out if there is a short run relationship among the variables within the period under investigation. The Error Correction Mechanism results revealed that there is a short run equilibrium relationship among the variables with an adjustment speed of - 0.615400 or 61 % from its long run equilibrium to its short run equilibrium within the reviewed period. The study concludes by considering how food security is influenced by the agriculture financing in Nigeria. The study thus recommends that farmers should search for alternative funding mechanisms for agriculture while the government should strengthens existing financial institutions funding agriculture and rural roads connectivity between rural areas and urban markets should be encouraged for the well-being of Nigeria.

Keywords: Banks, Food Security, Fertilizer, Loans, Rainfall.

INTRODUCTION

Background to the study

Agricultural sub-sector output financing is critical for achieving food security in Nigeria, as targeted credit interventions directly enhance crop, livestock, and fishery yields. Without robust funding, the country struggles with low mechanization and post-harvest losses, but specialized agricultural financing is steadily bridging these gaps to expand food availability and reduce import dependency (Oyamendan Akinradewo, Olanipon and Abere 2024; Onuegbu, Ikeora, and Promise, 2022). Having realized the declining role of agriculture to economic development, which resulted to increase in poverty rate, government over the years has put in place certain policy measures and programmes with a view of increasing the growth and development of agriculture which will in turn bring about enhanced agricultural output and food security in Nigeria (Golley and Samuel, 2021; George-

Anokwuru, 2018; Osabohien, Ufua and Osabuohien, 2020; Oyamendan Akinradewo, Olanipon and Abere 2024). Nevertheless, evaluations of federal government capital expenditure on agriculture compared to the total federal government capital expenditure on other sector suggest that agricultural sector needs more funding. From 1980 to 2011, the federal government capital expenditure on agriculture was below 10 per cent except in the following years; 1981, 1982, 1983 (the highest), 1985, 1986, 2001, 2002, 2004, 2005, 2007, 2008 and 2009 because these were the years that coincided with the years after different government agricultural development policies and programmes such as the Green Revolution in 1980, the structural adjustment programme (1986), the Directorate of Foods, Roads and Rural Infrastructure (1987), food for all programme in 1987, the better life for rural women programme also in 1987, and the Rural Agro-Industrial Development Scheme in 1987 (Onuegbu, Ikeora, and Promise, 2022; Adeleye, Osabuohien and Asongu, 2020). Others include; Agricultural credit guarantee scheme fund (ACGSF) which have features such as the self-help group linkage banking, trust fund model and interest draw back. Other schemes include; the Agricultural Credit Support Scheme (ACSS), Commercial Agriculture Credit Scheme (CACS). Under the previous administration of President Muhammadu Buhari, budgetary allocation for agriculture rose from 1.8 per cent in 2017 to 2.0 per cent in 2018, then fell to 1.56 per cent in 2019 and 1.34 per cent in 2020 before recording a slight increase in 2021. In 2022, the government have budgeted 1.8 per cent of annual budget to agricultural sector (Onuegbu, Ikeora, and Promise, 2022; Adeshina, Tomiwa and Eniola, 2020; Abdul, Saheed, Abraham, Bernard and Yakubu (2022). However, the above measure is still way short of the 10 per cent yearly budget allocation proposed by African Union Maputo Declaration (AUMD) of 2003. Another issue is the problem of corruption. In Nigeria, corruption in the public sector is endemic and this could also affect the effective and efficient channeling of funding meant to agricultural sector in Nigeria (Abu, 2024). This begs the question if agriculture is adequately financed in Nigeria and to what extent to which this finance impacts on agricultural output and food security (Magaji, Usman, and Yusuf, 2023; Rizzo, Migliore and Schifani, 2024). Sustainable agricultural financing is the process and resource provision that helps promote and maintain the use of sustainable farming methods. This covers a range of financial tools, including investment vehicles, grants, loans, and insurance, that are intended to promote and ease the shift to sustainable agriculture (Usman, and Yusuf, 2023; Babatunde, Ademola, Ayodele, Daramola and Adewumi 2022; Ngong, Onyejiaku, Fonchamnyo and Onwumere, 2023). Sustainable agricultural financing catalyzes change by tackling the financial obstacles encountered by farmers, enabling the broader implementation of ecologically sustainable and socially responsible farming methods (Orji, Ogbuabor, Anthony-Orji and Alisigwe, 2020; Rizzo and Schifani, 2024). With the decrease in global biodiversity, our capacity to discover new food sources is being restricted. Furthermore, most valuations fail to provide information on the whole range of food resources nationwide. Following this, the need for science-based policymaking has become essential (Elinor, Ostrom and Investopedia, 2024; Ikubor, Yusuf, Oladipo, Gajere and Ojih, 2024; Florence and Nathan, 2020). Credit from the banking sector is essential for agricultural output since it allows for investment, innovation, and efficient operation, all of which are necessary for high agricultural output. Access to, availability of, and proper management of financing are critical to the success of sustainable agricultural growth. Inputs like seeds, fertilizers, machinery, and irrigation systems can't be purchased without farmers' access to finance (Ngong, Onyejiaku, Fonchamnyo, and Onwumere, 2023). Farmers are able to invest in these inputs and significantly boost agricultural productivity because banking credit provides the necessary finances. Higher yields and more efficient farming operations can be achieved when farmers have access to loans that allow them to apply modern agricultural techniques and technology (Aginam, 2024; Egwu, 2016; Ita, Owui, Dunsin and Ita, 2020). These include precision agriculture, improved seed varieties, and advanced irrigation



technologies. With the right kind of funding, farmers may diversify their operations, which increases agricultural output and makes it more stable (Bilbas, 2018; Dornan, Noy and Clair, 2020; Bourgeois and Schutter, 2020). Extension programs that teach farmers how to maximize their yields through the use of credit are a great way to boost agricultural output (Abu, 2024; Okafor, 2020). The working capital needed to keep farming activities going until harvest is sold can also be provided by loans from the banking sector. This keeps agricultural output steady by avoiding interruptions brought on by issues with money flow (Okorie, Chikwendu and Nneka, 2022).

STATEMENT OF THE PROBLEM

Although it was not entirely dedicated during the oil discoveries, the government has since demonstrated interest in the expansion of the agricultural sector. The government has demonstrated its interest in a number of ways, including increased investment in irrigation and automation systems, the establishment of river basins, agricultural financing institutions, training, the activation and funding of extension programs, and the delivery of physical infrastructure. Through direct interventions and regulatory measures, banks have been encouraged to lend more money to the agricultural sector. The ACGSF was founded in 1977. It is an agricultural credit guarantee scheme. A program that provides low-interest loans to commercial agricultural businesses for extended periods of time was established in 2009 under the name Commercial Agriculture Credit Scheme (CACS). To aid farmers in increasing agricultural output, the Anchor Borrowers' Programme (ABP) was established in 2015 to supply them with inputs and finance. The Nigeria Incentive-Based Risk Sharing System for Agricultural Finance (NIRSAL) is one of several programs that were put in place in 2013 to help banks with agricultural financing by giving them incentives, technical help, and risk-sharing facilities. The Agricultural Credit Support Scheme (ACSS) is one of several programs that are helping to increase agricultural output in the nation. This program provides low-interest loans to agro-allied businesses and farmers, with rates as low as 8%. Micro, Small, and Medium Enterprises Development Fund (MSMEDF) and other development finance interventions and regulatory measures are also in play. In 2019, for example, banks are required to lend a minimum of 65% of their deposits to agriculture under the Loan-to-Deposit Ratio (LDR) Policy. It still hasn't lived up to its promise, despite numerous attempts and measures, even though it has become better in recent years. With a GDP contribution of just around 24–25%, the industry has clearly not grown at the same rate as the economy as a whole. Crops like as cocoa, palm oil, and rubber have seen their production fall over the years, and overall, productivity per hectare is low when compared to worldwide norms. Domestic production falls short of demand, leading to growing imports, particularly in recent times. Livestock and fisheries have also been suboptimal, with difficulties like bad breeds, inadequate nutrition, and infections. Other reasons to be worried about the sector's production performance include the country's excessive use of imported rice and wheat. Limited use of modern equipment, low productivity, and subsistence farming characterize the sector, despite efforts to improve it. As a result, farmers' income is low and their output is low. A lot of the country's agricultural product export potential is still unrealized. Some promising trends in agriculture, including rising interest in agribusiness and higher rice output, are still in their early stages and have not yet resulted in a systemic shift in the industry as a whole. Concerns regarding the effect of bank sector loans on the sector's production have been heightened by the fact that the sector's overall performance has lagged behind forecasts for decades. There is research in the literature that is pertinent. But much of the research looked at how government spending affected the growth of the agriculture industry. Several other studies in Nigeria have looked at how bank loans affect agricultural production.



THEORETICAL LITERATURE REVIEWED**Financial Incentives Theory**

Financial incentives theory, often known as economic incentives theory, is a relevant approach to sustainable agriculture that stresses the necessity of giving financial incentives to farmers to promote the adoption of sustainable methods. The hypothesis was first presented by economist who suggested that financial incentives might play a significant role in encouraging sustainable resource management. The financial incentives hypothesis implies that farmers are rational agents who would embrace sustainable practices provided they are financially rewarded for doing so. This may include compensation for ecosystem services, subsidies for sustainable practices, and tax incentives for environmentally-friendly enterprises. Financial incentives may also assist to cover the expenses of converting to sustainable agriculture, which can be a barrier for certain farmers.

Sustainable Livelihood Theory

Chambers and Conway (1991) insist that the capabilities, assets (including both capital and social resources) and other farming practices required as a means of living constitute a sustainable lifestyle. Access to financial resources and income-earning activities, including reserves and assets to offset risk and relieve shocks over a lengthy period, are the only guarantees that can lead to greater output (or food security), according to the theory. Boosting agricultural production (food security) goes beyond just making food more affordable, claims the capacity to cultivate food and get a steady income from farmers is a part of it. The importance of credit and financial resources in guaranteeing an increase in agricultural output was highlighted by this theory, as it was by the structural change hypothesis discussed before.

Empirical Literature Reviewed

Wisdom and Amaegberi (2025) study uses the Autoregressive Distributed Lag (ARDL) method to look at how bank loans affected agricultural production in Nigeria. The investigation made use of a yearly time series dataset that encompasses the entire period from 1981 to 2023, inclusive. While the agricultural sector enjoyed some short-term benefits from the loans and advances made available by deposit money banks, the sector as a whole reaped huge benefit in the long run. Loans and advances provided by deposit money banks to the agricultural sector have significant and favourable consequences in the short and long term. Government investment in capital projects also increased agricultural output, both immediately and over the long term, according to the results. The agricultural output in the crop's subsector was positively and substantially impacted by the consumer price index, both in the short and long term. Both the consumer price index and population expansion had a beneficial and lasting impact on the agricultural output of the cattle subsector. In addition, it was shown that annual rainfall significantly reduced agricultural productivity over time but had a big beneficial effect on output in the short term. The government ought to prioritize expanding access to affordable agricultural financing in order to promote the expansion of crops, animals, and overall agricultural production in the long run. Government spending on agricultural infrastructure and support services should be maintained or increased by policymakers in order to sustainably increase agricultural output. Oyamendan Akinradewo, Olanipon and Abere (2024) study examined the contribution of agricultural financing to food security in Nigeria. The study scope was annual data from 1981 to 2022, sourced from the Central Bank of Nigeria Statistical Bulletin, 2022, and World Bank Data Indicators, 2022. Food security was measured using the food production index. At the same time, agricultural financing is proxied with government expenditure on agriculture, deposit money banks (DMB) credit to agriculture, and agricultural sector guarantee scheme fund loans to agricultural sector. The study also introduced interest rates and agrarian output into



the model. It utilized the autoregressive distributed Lag (ARDL) model as the main estimation technique and found that government expenditure on agriculture and agricultural sector guarantee credit scheme loans to the agricultural sector have a negative influence on food security in Nigeria, while deposit money banks (DMBs) credit to agriculture is found to influence food security in Nigeria detrimentally. The study recommended that government expenditure on agriculture should be channeled towards the rural region of the country, and credit for agricultural purposes should be given to the peasant farmers who engage in small-scale farming in Nigeria. Eno et al (2023) investigated the link between Agricultural Financing and Agricultural Output in Nigeria. The effect was assessed through the relationship between Agricultural Gross Domestic Product (AGDP) and Banks' Credit to Agriculture (BCRA) together with Banks' Lending Rate proxied by Interest Rate (INTR), Foreign Exchange Rate (FEX), and Government Expenditure on Agriculture (GEXA) for the period 2011 – 2021. A highly trustworthy econometric tool (Ordinary Least Square –OLS) regression approach and error correction models were utilized to examine the impact/level of association between the dependent variable and each of the independent variables. The findings of the investigation demonstrate that banks' loan to the agriculture sector was appropriately signed and considerable (0.06167). This simply implied a positive association existed between Banks' lending and Agricultural production in Nigeria. High interest rates reduce agricultural loan demand by farmers, lowering agricultural production in Nigeria (-0.00577). The research indicated that agriculture finance contributed to the economic performance of Nigeria during the sampling period because of insufficient funding. Ngong, Onyejiaku, Fonchamnyo, and Onwumere (2023) analyzed the impact of bank lending on agricultural output in CEMAC nations using data collected from 1990 to 2019. The study utilized autoregressive distributed lag as its methodology. The findings revealed that local bank loans to the private sector, land, and physical capita all had a favourable effect on agriculture value added. Broad money supply, inflation, and labour all had a detrimental impact on the value of agriculture's contribution to gross domestic product. Rodríguez and Chávez (2023) examined the impact of commercial bank loans on economic activity across Mexico's industrial sector and seven particular industries, including food, beverage, and tobacco. Data sets utilized in the study were updated monthly from July 2009 to March 2020. Here is the data The ARDL bounds test method was used to evaluate the results. The analysis shows that bank lending has a positive and statistically significant impact on production across the board and in specific industries like food, drink, and tobacco. Tijjani et al (2022) evaluated the influence of different forms of agricultural funding on food security in Nigeria using time series data that cover a period from 1981 to 2020. To accomplish the research, the Autoregressive Distributed Lag (ARDL) Model was applied to evaluate the data. Food security in Nigeria was envisaged as food availability proxied by agricultural productivity in Nigeria. As such, agricultural production government spending on agriculture, inflation, and interest rate as the independent variables. The research utilized time series data from 1981 to 2020. The estimated ARDL model revealed commercial bank loans to agriculture, agricultural credit guarantee scheme funds, government spending on agriculture, and interest rates had a substantial effect on food security assessed by agricultural production. Consequently, to increase food security in Nigeria, this research advised among others that commercial banks should be encouraged to divert their credit to agriculture, and the government should offer additional guarantees on loans to assist farmers in obtaining credit. Finally, to boost access to food, efforts should be made to raise the per capita income of the people in order to fulfill the demand for food.

Model Specification

The data used were drawn from the Central Bank of Nigeria Statistical Bulletin, 2024. The scope of the study is from 1980 to 2025, a period of 45 years. The functional form of the



model is specified as

$$FPDI = f(ANRF, AGSL, FERZ, GEAQ) \dots \dots \dots (1)$$

FPDI = food security was measured by food productive index, ANRF = annual rain fall,, agricultural guarantee scheme fund loan, FERZ = fertilizer application., GEAQ = government expenditure on agriculture.

The econometric model is

$$FPDI_t = \beta_1 ANRF_t + \beta_2 AGSL_t + \beta_3 FERZ_t + \beta_4 GEAQ_t \dots \dots \dots (2)$$

Where

FPDI = food security was measured by food productive index at time t, ANRF = annual rain fall at time t, agricultural guarantee scheme fund loan at time t, FERZ = fertilizer application at time t., GEAQ = government expenditure on agriculture at time t

μ_t = Error term

β_0 = Intercept

$\beta_1 - \beta_4 > 0$ are parameter estimates

Analytical Techniques

The study was estimated using Augmented Dickey-Fuller (ADF) unit root tests, Co-integration rest to ascertain the order of integration of the variables and its long-run relationship and then, the Error Correction Mechanism test was carried out to establish if the variables have short-run relationship.

DISCUSSION AND INTERPRETATIONS OF RESULTS

Unit Root Tests

Table 1. The Augmented Dickey Fuller (ADF) unit root test is use to establish the stationarity of the time series data used in the study.

Variables	Levels		First Difference		Order of Integration	P-value
	ADF Statistics	5% Critical Value	ADF Statistics	5% Critical Value		
FPDI	-1.564827	-2.929734	-10.45492	-3.515523	1 (0)	0.0000
ANRF	-3.803931	-3.515523	-6.584317	-3.518090	1 (0)	0.0250
AGSL	-3.745321	-3.3420986	-5.684503	-4.674390	1 (0)	0.0000
FERZ	-4.279102	-3.513075	-12.31286	-3.518090	1 (0)	0.0076
GEAQ	-3.621172	-3.513075	-7.603619	-3.518090	1 (0)	0.0000

Source: Author Computation from E-Views 2025* Level of significance at 5%

This study employs the Augmented Dickey-Fuller (ADF) unit root tests to analyze the order of integration of the variables and the results are presented above in table 1. The results of Augmented Dickey-Fuller (ADF) indicated that the variables are integrated of order zero series. The ADF result revealed that all variables are stationary at levels 1(0). This condition makes the Error Correction Mechanism (ECM) test approach to co-integration too appropriate for investigating the long-run relationship among these variables.



Co-integration Tests**Trace Statistic**

Hypothesized		Trace	0.05	Prob.**
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Critical Value
None *	0.714311	138.9336	95.75366	0.0000
At most 1 *	0.652868	83.80817	69.81889	0.0026
At most 2	0.297630	37.25394	47.85613	0.3357
At most 3	0.224002	21.70893	29.79707	0.3150
At most 4	0.184116	10.55031	15.49471	0.2407

Source: Author Computation from E-Views 2025. Level of significance at 5%

Max-Eigen

Hypothesized		Max-Eigen	0.05	Prob.**
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Critical Value
None *	0.714311	55.12539	40.07757	0.0005
At most 1 *	0.652868	46.55423	33.87687	0.0009
At most 2	0.297630	15.54500	27.58434	0.7040
At most 3	0.224002	11.15863	21.13162	0.6314
At most 4	0.184116	8.953276	14.26460	0.2901

Source: Author Computation from E-Views 2025. Level of significance at 5%

Co-integration analysis disclosed a long-run relationship given the fact that there is interplay between agricultural sector financing and food security in Nigeria and such interplay is multifaceted and predisposed by numerous factors. Arising from the Co-integration test using Trace Statistic and Max-Eigen tests, there is an indication of a long run links amongst the variables used. The rule states that even if there is the existence of one co-integrating variable, there exists long run equilibrium in the model. This therefore enables the error correction test (ECM) for the justification of a short run equilibrium dynamics within the periods under review, 1980-2025 to be conducted since the Trace and Max-Eigen statistics indicates two (2) co-integration relationship each among the variables.

Table 3. ECM Short-run Result (FPDI)

Variable	Coefficient	Std. Error	t-Statistics	Prob
C	-0.337554	0.075900	-3.513859	0.0088
D(FPDI)	0.656357	0.059773	3.653428	0.0065
D(FPDI(-1)	-0.026100	0.044444	-0.259777	0.8087
D(ANRF(-2)	-0.044998	0.030280	-1.729130	0.0987
D(ANRF)	-0.057078	0.031711	-2.805586	0.0086
D(AGSL(-1)	-0.051200	0.040306	-0.005675	0.9965
D(AGSL)	-0.064187	0.020911	-0.590433	0.3400
D(AGSL(-2)	-0.060400	0.089900	-0.904600	0.8811
D(FERZ)	-0.442100	0.150777	-0.774444	0.8430
D(FERZ(-1)	-0.040260	0.040389	-0.005644	0.5657
D(FERZ(-2)	-0.464166	0.050955	-0.590490	0.6582
D(D(GEAQ)	-0.332990	0.112288	-2.181332	0.0441
D(GEAQ(-1)	-0.463806	0.167571	3.0567745	0.0201
D(GEAQ(-2)	-0.060479	0.066966	-0.909945	0.3788
Ecm (-1)*	-0.615400	0.004462	-5.630087	0.0744
Adj R2 = 0.670100	F-statistics 3.156634	=	DW1. =1. 647001	

Source: Author Computation from E-Views 2025. Level of significance at 5%

The coefficient estimate for the Error Correction term, ECM (-1) is -0.615400 or 61 percent in absolute term with a negative value and is significant at the 0.05 level suggesting that the model will reach long-run equilibrium at a rate of 61 % every year. This means that a yearly adjustments speed of 61 % may fix the mistake from the previous year. The independent variable food production index (PPDI), a proxy food security explains 61 % of the total variation in all the dependent variables. The coefficient of determination (R^2) is 0.670100 and indicates that the independent variables account for approximately 67 % of the long and short-term variation in food security in Nigeria. The remaining per cent is explained by other factors that were not taken into consideration when developing the model. In nutshell, the model is noteworthy since the F-statistic of 3.156634 and significant at the 5% level of significance. The Durbin-Watson test for autocorrelation yielded a value of 1.647001. Since this value is so close to 2, we can confidently accept the null hypothesis that no autocorrelation exists.

CONCLUSION

The study examined how food security is influenced by the agriculture financing options in Nigeria. The study measured food security with food productive index while agriculture financing was proxies for food productive index, annual rain fall, agricultural guarantee scheme fund loan fertilizer application and government expenditure on agriculture. The study used ARDL as its primary estimation technique. The study scope was limited to annual data from 1980 to 2025; which is a forty-five (45) years' scope. The study found that government expenditure on agriculture and agricultural sector guarantee scheme fund loan to agricultural sector have positively influenced food security in Nigeria.

RECOMMENDATIONS

The following recommendations were made based on the findings of this study:

The government should spread funding sources for agriculture. Given the limited impact of government investment, it's recommended to discover alternative funding mechanisms for agriculture such as public-private partnerships (PPPs), donor funding from international organizations or bilateral donors and issuing bonds explicitly for agricultural projects that can attract private investment.

The government should strengthen financial inclusion in rural areas to able to enhance the impact of bank loans on agriculture and efforts should be made to improve financial inclusion in rural areas.

Government as well as individuals should invest heavily in agricultural research and extension services.

To improve agricultural productivity, greater importance should be placed on agricultural research and extension services. This can be done by the provision of equipment necessary for large scale farming in Nigeria.

Investments should be made on rural roads connectivity between rural areas and markets.

Expansion of irrigation facilities to moderate the impact of climate variability, building warehouses

Storage facilities to reduce post-harvest losses.

Finally, providing technical assistance to farmers, including training on modern agricultural practices and access to information.

Infrastructure Constraints should be addressed. Inadequate infrastructure can hinder agricultural development.

Effective food security policies and implementations by developing an all-inclusive food security strategies and programs designed at enhancing food production, distribution, and access in Nigeria.



REFERENCES

- Abu, N. I. (2024).** The effects of commercial banks' lending on agricultural productivity in Nigeria: An empirical analysis, *African Banking and Finance Review Journal*, 8(8), 47 – 56.
- Abdul, Saheed, Abraham, Bernard & Yakubu (2022).** Agriculture financing and food security in Nigeria. *Journal of economics and allied research*, 7(2), 235–249.
- Adeleye, E. Osabuohien, & S. Asongu. (2020).** Agro-industrialization and financial intermediation in Nigeria. *African Journal of Economic and Management Studies*, 11(3), 443-456.
- Adeshina, K.F., Tomiwa, O. Y., & Eniola, O.M. (2020).** Agricultural Financing and Economic Performance in Nigeria. *Asian Journal of Agricultural Extension, Economics & Sociology*, 38 (7). 61-74.
- Aginam, C. J. (2024).** Banking sector financing and agricultural sector output in Nigeria. *African Banking and Finance Review Journal*, 17(17), 198 – 211.
- Babatunde Afolabi, Ademola E. Ayodele, Kehinde. O. Daramola, Pelumi A. Adewumi (2022).** Agricultural Financing and Economic Growth in Nigeria. *FUOYE Journal of Finance and Contemporary Issues*, 3(1), 33-45.
- Bilbas, A. S. (2018).** The effect of commercial banks' credit on agricultural investment development: An empirical study on agricultural sectors in Kurdistan region. *International Journal of Horticulture, Agriculture and Food Science (IJHAF)*, 2(4), 142 – 150.
- Bourgeois, C. Wiedemann., & O. De Schutter. (2020).** Financing sustainable agriculture: A review of concepts, evidence, and instruments. *Food Policy*, 97, 101835.
- Chambers & Conway (1991).** Chambers, R. and Conway, G. (1991). *Sustainable Rural Livelihoods: Practical Concepts for the 21st Century*.
- Dornan, I., Noy, I. & St Clair, A.L. (2020).** Sustainable finance for sustainable agriculture. *Land Use Policy*, 94, 104-508.
- Efanga, U.O., Ame O.M. (2024).** Government funding and agricultural sector output in Nigeria: The moderating effect of corruption. *Journal of Development Economics and Finance*, 5(2), 321-340.
- Elinor Ostrom and Investopedia, 2024.**
- Egwu, P. N. (2016).** Impact of agricultural financing on agricultural output, economic growth and poverty alleviation in Nigeria. *Journal of Biology Agriculture and Healthcare*, 6(2), 36 – 42.
- Eno, E.J. & Eze, F.O. (2023).** Relationship between Agricultural financing and Agricultural output in Nigeria. *Global Journal of Finance and Business Review*, 12(3), 21-34.
- Florence, N. & Nathan, S. (2020).** The effect of commercial banks' agricultural credit on agricultural growth in Uganda. *African Journal of Economic Review*, 3(1), 162 – 175.
- Golley, O. D. & Samuel A. P. (2021).** The impact of commercial bank credit on agricultural sector in Nigeria (1993-2019). *Gusau International Journal of Management and Social Sciences*, 4(1), 16 – 26.
- George-Anokwuru, C. C. (2018).** Deposit money banks' credit and agricultural output in Nigeria, *Journal of Economics and Management Sciences*, 1(1), 26 – 38.
- Magaji, S., Usman, G. & Yusuf, A. T. (2023).** Impact of commercial banks' loan on agricultural output in Nigeria. *Journal of Studies in Social Sciences*, 22(20), 1 –



12.

- Ngong, C. A., Onyejiaku, C., Fonchamnyo, D. C. & Onwumere, J. U. (2023).** Has bank credit really impacted agricultural productivity in the Central African Economic and Monetary Community. *Asian Journal of Economics and Banking*, 7(3), 435 – 453.
- Ikubor, O. J., Yusuf, M. A., Oladipo, A. O., Gajere, J. M., & Ojih, A.U. (2024).** Deposit money banks' credit and agricultural output in Nigeria. *Journal of Economic Studies*, 21(1), 24 – 42.
- Ita, A. J., Owui, H. O., Dunsin, O. M., & Ita, R. I. (2020).** Commercial banks' lending and the growth of agricultural sector in Nigeria, *IIARD International Journal of Banking and Finance Research*, 6(3), 1 – 13.
- Orji, A., Ogbuabor, J. E., Anthony-Orji, O. I. & Nkechi Alisigwe, J. (2020).** Agricultural financing and agricultural output growth in developing economies: any causal linkage in Nigeria? *International Journal of Finance, Insurance and Risk Management*, 10(2), 34-43.
- Onuegbu, A. N., Ikeora, J. J. E., & Promise, O. (2022).** Deposit money bank credit and agricultural output in Nigeria. *International Journal of Innovative Finance and Economics Research*, 10(1), 49 – 67.
- Oyamendan, A.E., Akinradewo, T.R., Olanipon., & Abere, O. (2024).** Agricultural financing and food security in Nigeria: A strategy for achieving sustainable development goals (SDGs), *Jalingo Journal of Social and Management Sciences* 6(1), 1-16.
- Osabohien, D., Ufua, C.L. Moses, & Osabuohien, E. (2020).** Accountability in agricultural governance and food security in Nigeria. *Brazilian Journal of Food Technology*,
- Osabohien, O., Gershon, O., Matthew, E., Osuagwu, U.E., Ekhatior-Mobayode, U., & Osabuohien, E. (2020a).** Household access to agricultural credit and agricultural production in Nigeria: A propensity scores matching model. *South African Journal of Economic and Management Sciences*, 23(1), 1-11.
- Okafor, C. A. (2020).** Commercial banks credit and agricultural development in Nigeria, *International Journal of Business and Law Research*, 8(3), 89 – 99.
- Okorie G., Chikwendu, C., & Nneka, F. (2022).** Impact of Nigerian Agricultural expenditure on Agricultural sector output. *GOUni Journal of Faculty of Management and Social Sciences*, 10(1) 63-73.
- Rizzo, G., Migliore, G. & Schifani, G. (2024).** Key factors influencing farmers' adoption of sustainable innovations: a systematic literature review and research agenda. *Org. Agr.* 14, 57–84.
- Tijjani, B. & Anthony, B.O. (2022).** Financing Agricultural Sector, a Panacea for food security in Nigeria. *Journal of Economics, Management and Trade*, 28(11). 45-55.
- Wisdom, S.K., & Amaegberi, M. (2025).** Banking sector reforms and economic growth in Nigeria. *Mediterranean Journal of Social Sciences*, 14(6):36 -50.

