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RESEARCH ARTICLE

FINANCIAL INCLUSION AND AGRICULTURAL SECTOR PRODUCTIVITY IN NIGERIA: AN EMPIRICAL INVESTIGATION

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Abstract: This study examined the impact of financial inclusion on agricultural sector productivity in Nigeria. The study adopted the Classical Linear Regression Methodology. The Johansen co-integration test showed the existence of long run relationship between financial inclusion and agricultural sector productivity. The regression result showed that commercial bank credit to agriculture, agricultural credit guarantee scheme fund, rural deposit and exchange rate has a significant and positive relationship with agricultural sector productivity, while inflation has a negative relationship with agricultural sector productivity. Based on these findings, the study recommended that government should provide appropriate policies that will facilitate sustainable financial inclusion. Commercial banks should be encouraged to participate in rural banking, thus, encouraging high involvement in rural areas through the building of bank branches and also providing soft loans to farmers in rural areas. Finally, the government should ensure that the conditions and terms of accessing financial products and services, such as loans and credits are properly monitored to ensure that the conditions are not detrimental to agricultural sector productivity.

Keywords: *Financial Inclusion, Agricultural Sector, Productivity, Empirical.*

JEL Classification: B26; D14; G21; Q14; O47

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INTRODUCTION

The agricultural sector plays a crucial role in a country's economic growth, sustainable development, employment creation and poverty reduction (Okoh, 2015). It was instrumental in reducing poverty in China and India and is currently one of largest employer of labor in Nigeria (Anthony-Orji *et. al.* 2020). Despite the potentials of the agricultural sector, Nigeria has not really exploited it to her advantage.

Though agriculture remains the largest sector of the Nigerian economy and employs two-thirds of the entire labor force, production hurdles have significantly stifled the performance of the sector. Over the past 20 years, value-added per capita in agriculture has risen by less than 1 percent annually. It is estimated that Nigeria has lost USD 10 billion in annual export opportunity from groundnut, palm oil, cocoa and cotton alone due to continuous decline in the production of those commodities. Food (crop) production increases have not kept pace with population growth, resulting in rising food imports and declining levels of national food self-sufficiency (FMARD, 2008). Lack of access to financing has been constantly sited as a major reason for below par performance of Nigeria's agricultural sector (Orji *et. al,* 2020).

The Nigerian economy was a predominantly agrarian one at independence in 1960, with agriculture contributing 63.8% to GDP, but the share of agriculture in output has dropped over the years. Agriculture contributed 41.2% to GDP in 1970, but this had dropped to 20.6% in 1980. Although it rose to 37% in 1990, it had fallen to 27% in

2000. New figures based on the rebased GDP show that agriculture's contribution to GDP had fallen further to 23.8 % in 2010, 20.2% in 2014 and 21.42 % in 2018 (Central Bank of Nigeria, 2019). The primary trigger of the decline in agricultural output was the discovery of oil. The country has moved from being self-sufficient in food production to become an importer of food. In 1981, the value of Nigeria's imported food and live animals was N1.8 billion, but this had surged phenomenally to N1.4 trillion by 2018 (Central Bank of Nigeria, 2019).

According to Manyong *et. al.*, (2005), The 2006 population census put Nigeria's population at 140,003,542, which makes it the country with the largest population in Africa. Nigeria occupies a land area of 923,768 kilometres, thus providing ample land for agricultural production. However, less than 50% of the cultivable agricultural land is under cultivation by small-holder farmers who use outdated techniques, thereby resulting in low yield.

Low agricultural productivity has been identified as an important contributing factor to rural poverty in Nigeria (McKinsey Global Institute, 2014). Nigerian agriculture is characterised by low yields which reflect the dominance of small-holder farmers who lack knowledge about agricultural best practices and are unable to invest in seeds and fertiliser (McKinsey Global Institute, 2014). Yield and fertiliser use in Nigerian agriculture are far below the global benchmarks in places such as China, Indonesia, Brazil, India and Ghana, and this is largely as a result of farmers' lack of access to finance (McKinsey Global Institute, 2014).

Although the share of agriculture in Nigeria's GDP has fallen significantly, agriculture still remains an important source of livelihood for many Nigerians. Agriculture is the largest employer of labour, with 30.5% of employed persons engaged in agriculture (National Bureau of Statistics, 2010). There is an even greater percentage of young people engaged in agriculture, as 44% of youths are employed in agriculture (National Bureau of Statistics, 2013).

Thus, agriculture features prominently in the lives of Nigerians, and there is hardly any family that does not have someone involved in agricultural activities.

However, despite agriculture's prominence in economic activities and employment, the sector still suffers from a chronic inability to obtain finance from financial institutions. In the second quarter of 2019, agriculture received only 4.2 % of commercial bank lending, while manufacturing received 15.3%, oil and gas received 22 % and services broadly received 36.5% (National Bureau of Statistics, 2019).

This suggests that agriculture is largely excluded from formal finance. This is supported by recent statistics which show that farmers are the largest group of financially excluded persons in Nigeria, as 37.6 % of farmers are financially excluded (Efina, 2017). Thus, agriculture is largely excluded from formal finance in Nigeria.

Finance is very important in increasing agricultural productivity because, it can facilitate mechanized agriculture, agricultural research, mass production and processing activities amongst others that are key to attaining a respectable productivity in the 21st century. However, because majority of Nigeria's farmers are rural dwellers, access to finance is stunted. Many of them have no transaction account, they have no credit history, no means to receive payments without personal contact, In fact, they are financially excluded. This financial exclusion could have contributed to impeding agricultural productivity in Nigeria because of the limitations it poses as stated above.

Financial inclusion is the improved access to formal financial services such as obtaining a bank account and using credit, savings and other banks services in an economy (Anthony-Orji *et. al.* 2023a, Anthony-Orji *et. al,* 2023b, Efobi, Beecroft and Osabuohien, 2014). It is the delivery of financial services at affordable costs to some disadvantaged and low income segment of the economy (Anthony-Orji *et. al.,* 2019a).

A first step towards a broader financial inclusion is the provision of a transaction account. A transaction account serves as a gateway to other financial services (e.g. access to financing) which in turn could assist the farmer in enhancing productivity. Providing access to a transaction account allows people to store money, send and receive payments: essential commercial agricultural activities.

Financial inclusion can be measured along three dimensions: Access (the extent to which individuals and businesses have access to a range of finacial services including savings, credit, insurance, and payment services), Usage (the extent to which individuals and businesses actively use financial services once they have access to it), and Quality (the quality of financial services, including the cost, transparency, and reliability of financial products and services).

Measuring financial inclusion along these three dimensions allows policmakers and other stakeholders to better understand the extent to which individuals and businesses have access to finacial services, and how they are using these services, and the quality of the services they are receving. This information can be helpful in identifying gaps and opportunities for improving financial inclusion, and targeting interventions and policies to promote greater financial inclusion and enhance economic development.

In 1977, the Rural Banking Scheme (RBS) was introduced with the aim of encouraging the habit of banking among the rural populace, harness their savings, and improve delivery of credit to the active rural populace, thereby reducing the flight of both funds and people from the rural to urban areas (Okafor, 2011). Over the years, the scheme which started with the extension of conventional banking services to the rural areas through establishment of commercial banks' branches in those areas has taken various forms such as People's banking, community banking and lately, microfinance banking, POS, Agent banking and so on. In Nigeria, EFINA (2008) reported that about 53.0 percent of adults were excluded from financial services.

The poorest people are normally excluded from formal financial services because they have limited understanding of them, because of illiteracy, or because the usefulness of the products available are limited; as well as being actively excluded by financial service providers who see them as too risky and expensive to reach (Smith *et. al.,* 2015). Nigeria's Financial Inclusion Strategy (CBN, 2012) has an ambitious target of including 70 percent of the population in formal services by 2020. However the problem remains if an increase in financial inclusion have a direct long run impact on agricultural productivity.

In a bid to increase financial inclusion in the country, the Nigeria government has set up a striving target of universal financial access by 2020 (Ogbuabor, *et. al.,* 2020 and Olaniyi, 2017). This drive has brought many financial inclusion-driven initiatives into the agricultural sector such as Agricultural Credit Guarantee Scheme, Commercial Agricultural Credit Scheme and Nigeria Incentive-Based Risk Sharing System for Agricultural Lending.

In 2009, The Central Bank of Nigeria (CBN) partnered with the Federal Ministry of Agriculture and Water Resources to launch the Commercial Agriculture Credit Scheme aimed at providing access to finance for Nigeria's agricultural value chain (i.e. production, processing, storage and marketing). In 2016, the Central Bank of Nigeria (CBN), the Bankers' Committee and the Federal Ministry of Agriculture and Rural Development raised a sum of N75 billion as loan to Nigerian farmers, under the Nigerian Incentive-Based Risk Sharing in Agricultural Lending. This scheme guaranteed 75 % loans provided by commercial banks to farmers as part of efforts to organize finance for Nigerian agribusinesses by integrating end-to-end agricultural value chains (i.e. farmers, input producers, industrial manufacturers, agro processors and agro dealers) with agricultural financing value chains (i.e. managing and pricing for risk, loan product development, loan origination, loan disbursement, and credit distribution). These initiatives show that there is a perception that access and usage of finance are important in increasing agricultural productivity.

However, some of the initiatives have either succeeded or failed to achieve their desired goals. Financial inclusion policies have therefore aroused the interest of several studies around the world. Several of those studies have attempted to determine the impact of finance on agricultural productivity. There is some disagreement in empirical findings. Some found a significant relationship between availability of finance and agricultural output while others found non-significant relationships.

Although there is significant amount of literature on financial inclusion and

agricultural sector productivity in Nigeria, significant challenges remain in expanding financial inclusion and enhancing financial and enhancing agricultural sector productivity in Nigeria. These include limited access to formal financial institutions, limited financial literacy, inadequate infrastructure and weak policy and regulatory frameworks. Addressing these challenges will require continued efforts by policymakers, financial institutions, and other stakeholders to promote financial inclusion and support the development of the agricultural sector in Nigeria.

On that note, this study specifically investigates the impact of financial inclusion agricultural productivity in Nigeria, taking into consideration the effectiveness of financial inclusion initiatives targeting specific groups such as youth and women, in the agricultural sector in Nigeria (thereby emplying age and gender as part of its control variables) while utilizing the New Intuitional Economics (NIE) framework.

The NIE framework in the context of financial inclusion and agricultural sector productivity in Nigeria suggests that the availability of formal financial institutions, such as banks, and microfinance institutions, as well as informal financial institutions, such as savings and credit associations, can play an important role in enhancing access to finance an improving agricultural productivity. Overall, the NIE framework provides a useful lens for analyzing the complex interplay between institutions, finance, and agricultural productivity in the country.

The rest of the paper is structured as follows: Section 2 looks at the literature review, while section 3 is on methodology. The results and discussion are presented in section 4, while section 5 concludes the paper.

LITERATURE REVIEW

The target of every economy is to grow and sustain economic growth. Increase in financial inclusion and agricultural productivity can be seen as a driving force of economic development. Therefore the instrument to be chosen that will solve the challenges is a unique one as it relates to the economy. All these gave rise to the study of different policy instruments in different countries at different periods of time using different methodology for better policy recommendation.

Currently, the debate is still on, but the findings of the different researchers are yet to resolve the empirical dilemma. For example, Awotide, Abdoulaye, Alene & Manyong (2015) employed the Endogenous Switching Regression Model (ESRM) to examine the impact of access to credit on agricultural productivity in Nigeria. The study showed that farmers who chose to obtain credit had higher productivity levels than a random farmer without credit.

This study therefore suggested that access to credit had a positive and significant impact on agricultural productivity. Similarly, Money (2014) investigated banks credit and agricultural development. The study employed primary and secondary sources of information extracted from five (5) banks and ten (10) agricultural enterprises in Delta State, Nigeria. Simple random sampling method through the lottery strategy was used to choose the samples.

The study was analyzed using percentage, mean and Standard Deviation. The Pearson product moment correlation was used to test the hypotheses. The study revealed that banks' credits and advances to agricultural entrepreneurs had a significant impact on agricultural development. Again, Udoka, Mbat and Duke (2016) researched on the effect of commercial banks credit on agricultural output in Nigeria.

The study adopted the ex-post facto research design for the study. Data were collected from published articles and the central bank of Nigeria statistical bulletin. The study portrayed that there was a positive and significant relationship between commercial banks credit to the agricultural sector and agricultural production in Nigeria.

On the contrary, Ojo, Akinrinola, Udoh & Okunola (2017) examined the long and short run dynamics of institutional credit and productivity in agricultural sector with evidence from Nigeria. The scope of the study was between the period of 1978 and 2011. The variables for the study included Agriculture's contribution to GDP (agricultural productivity), commercial banks' loan (CBLTA) (private sector credit) and Agricultural Credit Guarantee Scheme

(ACGS) (Public Sector credit). The ARDL was used to estimate the models employed. The study concluded that; in the long and short run, ACGS (public sector credit) had a not-significant impact on productivity while CBLTA (private sector credit) had a significant impact on productivity.

Furthermore, Ibe (2014) studied the impact of banks' and public sector's financing activities on agricultural output in Nigeria. The Objective was to determine the impact of Nigeria budgetary allocation to the agricultural sector between 1990 and 2007. Proxies used include Agricultural Product Output Index (API); Commercial Banks' Credit to the Agricultural Sector (CBCA); Government Fund Allocation to Agriculture (GFAA); Agricultural Product Price (APPR). Analysis of Variance (ANOVA) was applied to test the significance of the relationship and the student t-distribution (t-test) was employed to test the hypothesis.

The study found that commercial banks' credit to the agricultural sector (CBCA) and agricultural products prices (APPR) had positive and significant impact on agricultural production while government financial allocation to the agricultural sector (GFAA) had a positive but a not-significant impact on agricultural productivity.

Egwu (2016) examined the impact of agricultural financing on agricultural output, economic growth and poverty alleviation in Nigeria. The data covered the period 1980-2010. The variables included the Agricultural sector output percentage to Gross Domestic Product (ASOGDP), dependent variable, Agricultural Credit Guarantee Scheme Fund Loan to Nigeria's Agricultural sector (ACGSF) and Commercial Bank Credit to Agricultural sector(CBCA).

The ordinary least square regression technique was employed in which T-test, R-Square, Standard Error Test and Durbin Watson test ADF/PP unit root and co-integration test were used in the data analysis. The research found that Commercial Bank Credit to Agricultural sector (CBCA) and Agricultural Credit Guarantee Scheme Fund Loan to Nigeria's Agricultural sector (ACGSF) significantly impacted Agricultural sector Output Percentage to Gross Domestic Product (ASOGDP). Saleem & Jan (2010) studied the impact of credit on agricultural gross domestic product. Data regarding credit disbursement and agricultural gross domestic product of major crops in Khan from 1990 to 2008 were collected. The linear regression model was used to analyze the data. The study concluded that credit for seeds, Fertilizers and Pesticides (CrSPF) was positive and significant on Agricultural GDP. The study found that credit disbursed for tube wells, tractors and for other agricultural purposes (CrTTA) had no significant impact on Agricultural GDP (AGDP). It was concluded that credit availability increased agricultural production.

In contrast, Ali, Jatau, & Ekpe (2016) studied financial intermediation and agricultural output in Nigeria from 1981-2014. The ordinary least square method (OLS) was employed for data analysis. Variance Inflation Factor (VIF) and Heteroscedasticity White Test were used for data diagnosis while the Unit root test was carried out for stationarity. It was observed that deposit money banks´ credit (DMBC) positively and significantly influenced agricultural output while Deposit Money Banks' lending rate (DMBLR) had a negative and not-significant impact on Agricultural output (AQ).

Obilor (2013) studied the impact of commercial banks' credit to agricultural sector under the Agricultural Credit Guarantee Scheme Fund in Nigeria. It therefore examined the impact of Commercial banks' credit to agriculture (CBCA), Agricultural credit guarantee scheme loan by purpose (ACLP), Government financial allocation to agriculture (GFAA) and Agricultural product pricing index (APPR) on agricultural productivity respectively. The time frame for the study was 1983-2007.

It employed the Ordinary Least Square technique for data analysis. The result found that Agricultural Credit Guarantee Scheme Fund and Government fund allocation to agriculture had a significant and positive impact on agricultural productivity, while the other variables had a significant and negative effect. Other studies such as Anthony-Orji, et al (2019b) and Orji, Ogbuabor, and Umesiobi (2014) among others have also investigated some issues such as financial inclusions, monetary policy

shocks, agricultural outputs, food security and economic development in Nigeria and in Africa generally and found different results. Summarily, many these reviewed studies made series of attempts to analyse the empirical relationship between access to agricultural finance and output but none specifically focused on the impact of financial inclusion on Agricultural Productivity. This is the gap this study fills.

METHODOLOGY

This study employed an ex-post facto research design. It used time series data from 1981 to 2017. Data were obtained from Central Bank of Nigeria (CBN) statistical bulletin and World Bank index. Financial inclusion was adopted as the independent variable while Agricultural sector productivity was adopted as the dependent variables respectively.

This study used different variables to proxy financial inclusion and financial access. Variables such as Rural deposit (RDEP), Agricultural credit guaranteed scheme fund (ACGSF) and Commercial bank credit to agricultural sector (CBCA) were adopted as such proxies. Inflation (INF) and Exchange rate (EXRT) were the other independent variables in the model. The author included all other independent variables because they have been observed in the literature to have a strong influence on the agricultural sector productivity. Agricultural output (AGOP) was adopted as proxy for agricultural productivity. This research will adopt the ordinary least square (OLS) as its basic estimation technique. The econometric model is specified thus:

$$AGOP = \beta_o + \beta_1 LOGRDEPt + \beta_2 ACGSFt + \beta_3 LOGCBCAt + \beta_4 INFt + \beta_5 EXRTt + \mu_t \quad \ldots\ldots(1)$$

Where β_o is the Intercept term, $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ are the model parameters and μ_t is the stochastic error term. Time series data extending over the period of 1981 to 2017 were utilized in this study. The data were collected from various issues of Central Bank of Nigeria statistical bulletin and annual report (CBN 2017) and World Bank Indicator (2017) The apriority expectations are that rural deposits will positively influence agricultural output. Since rural deposits is accumulation of savings which can be more available for lending to the rural sector, a rise in rural deposits should lead to a rise in agricultural output as lending is made easier for farmers.

It can also be predicted that exchange rate, cumulative amount of loans disbursed and guaranteed under agricultural credit (ACGSF) and loans to farmers residing in rural areas (CBCA) are expected to influence agricultural output (AGOP) positively. While a negative relationship exists between agricultural output and inflation because inflation distorts production and consumption pattern and hence lowers productivity.

PRESENTATION AND ANALYSIS OF RESULTS

Unit Root Test Results

It is important to verify the stationary property of the variables before employing the cointegration test in order to ward off the generation of a spurious regression. The test is carried out to know whether the mean value and variances of the variables are time invariant that is, constant over time.

The unit-root test is applied using the Augmented Dickey Fuller (ADF) test at 5% critical value and the null hypothesis being that the series has a unit root if the t-statistic is less than the critical value at 5%, otherwise, the study rejects it. The summary of the ADF unit root results is reported below:

Table 1: Unit-root test summary

Variable	ADF stat at level	Crit. value at 5%	ADF stat at first difference	Crit. value at 5%	Order of integration
LogAGOP	-0.145	-2.946	-5.796	-2.948	1(1)
LogRDEP	-0.944	-2.946	-5.516	-2.948	1(1)
LogCBCA	-0.037	-2.945	-6.424	-2.948	1(1)
LogACGSF	-0.808	-2.946	-5.521	-2.948	1(1)
INF	-3.443	-2.948	-6.1387	-2.9511	1(0)
EXRT	-2.249	-2.946	-3.297	-2.948	1(1)

Source: Researcher's compilations from Eviews' results

From Table 1 above, it can be observed that LogAGOP, LogRDEP, LogCBCA, LogACGSF and EXRT were stationary at first difference while INF was stationary at level. This means that the variables are integrated of order one and zero, that is I(1) and I(0) respectively at 5% significance level. We therefore conclude that our variables are stationary.

Co-integration Test for the Models

This test is used to check for the existence of long run relationship amongst the variables. This study adopted the Johansen- co-integration test methods. In this test, the trace statistics was used to interpret the outcome.

The hypothesis to be tested is given below:

Ho: (There is no long run relationship among the variables of financial inclusion and agricultural sector productivity in Nigeria)

H_1: (There is a long run relationship among the variables of financial inclusion and agricultural sector productivity in Nigeria)

Decision Rule: Reject H_0 if the trace statistics > critical value ($_{at}$ 5 %), otherwise we fail to reject the H_0.

Table 2: Johansen Co-integration test result

No of integrating equations	Trace statistic	0.05 Critical value	P-Value
None	422.8864	239.2354	0.0000
At most 1	302.9876	197.3709	0.0000
At most 2	236.2523	159.5297	0.0000
At most 3	176.5564	125.6154	0.0000
At most 4	128.1662	95.75366	0.0001
At most 5	90.94190	69.81889	0.0004
At most 6	61.88137	47.85613	0.0014
At most 7	37.95441	29.79707	0.0046
At most 8	16.35387	15.49471	0.0371
At most 9	1.754987	3.841466	0.1853

Source: Author's computation from Eviews 9

From the table above, it shows that there exist nine (9) co-integrating equations as the trace statistics are greater than the 5 % critical value. Thus, we say that there is a co-integrating long-run relationship between financial inclusion and agricultural sector productivity in Nigeria. Therefore, we conclude that there is a long run relationship between financial inclusion and agricultural sector productivity.

Presentation and Analysis of Ordinary Least Square (OLS) S regression Results

Table 3: Summary of the regression results

Dependent Variable: Log AGOP				
Variable	**Coefficient**	**Standard error**	**T-value**	**Prob**
CONSTANT	5.54588	0.237079	23.3925	0
LogRDEP	0.004134	0.005411	0.76397	0.4507
LogCBCA	0.057441	0.020607	2.78751	0.009
LogACGSF	0.211661	0.019677	10.757	0
INF	-0.000708	0.00114	-0.6212	0.539
EXRT	0.001479	0.000537	2.75673	0.0097
R-Squared =	0.984992			
Adjusted R-Squared =	0.982571			
Durbin-Watson =	1.415617			
F-Statistics =	406.9069			

Prob (F-Statistics) =	0.000000

According to the results in Table 3 above, we can see the direct impact of financial inclusion on agricultural sector productivity in Nigeria.

The intercept or constant is 5.54. This suggests that if all the other variables remain constant, agricultural sector productivity will increase by 5.54%. The coefficient of rural deposit is 0.0041 indicating that an increase in the rural deposit rate by 1% will lead to a 0.0041% increase in agricultural sector productivity in the long run. This conforms to apriori expectations. Credit to agricultural sector has a coefficient of 0.057. This implies that an increase in the credit to the agricultural sector by 1 % will increase the agricultural sector productivity by 0.057% in the long run. The coefficient of the loans disbursed under the agricultural scheme is 0.2. This implies that a 1 % increase in the rate of loans disbursed under the agricultural scheme, then there is a 0.2 % increase in the agricultural sector productivity. The coefficient of inflation is -0.0007. This implies that a 1% increase in inflation rate leads to a 0.0007 % decrease in agricultural sector productivity. The coefficient of exchange rate is 0.0014. This implies that a 1% increase in exchange rate in favour of the naira will lead to a 0.0014 % increase in agricultural sector productivity. Orji *et. al.* (2019) also investigated the impact of exchange rate movements on the agricultural sector in Nigeria and found a similar result. The variables used as proxy for financial inclusion in the model, rural deposit, credit to the agricultural sector and loans disbursed under the agricultural scheme all have a positive long run impact with agricultural sector productivity. Therefore, this result is in line with our a priori expectation.
The R^2 is 0.98. This means that the explanatory variables account for 98 % of the variations in the dependent variables. Thus, the model possesses a very good fit.

This test measures the joint significance of the variables employed in the model. It is a test used to test the overall significance of the model. The probability value of the F-stat is 0.000000 which is far less than 0.05, therefore we conclude that the model is jointly significant.

CONCLUSION AND POLICY RECOMMENDATIONS

The objective of this study was to determine the impact of financial inclusion on agricultural sector productivity in Nigeria from 1981 to 2017. The study confirmed that there is a significant positive long run relationship between financial inclusion and agricultural sector productivity in Nigeria.

Having investigated the impact of financial inclusion on agricultural sector productivity in Nigeria, it is imperative to draw some policy lessons from our results and findings. It is evident from our results that there is a long run positive relationship between financial inclusion and agricultural sector productivity we therefore recommend that, first, commercial banks should be encouraged to participate in rural banking. They should be encouraged to have rural branches and also provide soft loans to farmers in rural areas. Second, the Agricultural credit guarantee scheme fund should become more accessible to rural dwellers and farmers requiring loans from commercial banks. Third, the act of savings should be grossly encouraged from small-time savers and depositors thereby improving credit facilities in the rural areas. Fourth, the government should ensure that the conditions and terms of accessibility to financial services, such as loans to be borrowed and credits are properly studied to ensure that the conditionality are not detrimental to the supposed agricultural productivity and economic development. Fifth, the government should also ensure that proper monitoring and follow up is carried out to ensure efficiency and effectiveness in service delivery. Finally, Transaction accounts opening process should be simplified for the rural unbanked for receipt of payments of loans and goods sold so that the history could serve as a source of data for decision making for all relevant stakeholders.

Declarations

All manuscripts must contain the following sections under the heading 'Declarations':

- **Availability of data and materials**

The datasets used and/or analysed during the current study are available from corresponding author on reasonable request.

- **Competing interests**

The authors declare that they have no competing interests

- **Funding**

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