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Determinants of Access to Credit by Maize (*Zea mays*) Farmers in Southern Taraba, Taraba State, Nigeria

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Abstract

This study investigates the determinants of access to credit among maize farmers in Southern Taraba, Taraba State, Nigeria. The specific objectives were to identify the constraints hindering credit acquisition and to assess the key factors influencing farmers' access to credit. A multi-stage sampling procedure was employed to collect primary data from 180 respondents using structured questionnaires. Data analysis involved both descriptive and inferential statistical methods. The findings revealed that major constraints to credit access included complex application procedures, high interest rates, lack of collateral, short repayment periods, delayed fund disbursement, and limited awareness of available credit sources. Key determinants influencing access to credit were identified as ownership of collateral, marital status, income level, farm size, and age. Based on these findings, the study recommends that policymakers prioritize improving rural farmers' access to information, extension services, and agricultural insurance to address demand-side barriers. Additionally, institutional capacity building for both lenders and borrowers should be integrated into all credit programs to enhance credit uptake, increase agricultural productivity, and improve farmer incomes. Credit policy

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interventions should be tailored to the specific needs and constraints of farming households.

Keywords: Access to Credit; Maize Farmers; Credit Constraints; Agricultural Finance; Taraba State

INTRODUCTION

In the developing countries agriculture plays a vital role to reduce poverty and hunger through employment generation, food security and also supports to the economic gross domestic product (GDP) of a country. It is a key player for obtaining the Millennium Development Goals (MDGs) to achieve sustainable development. In order to achieve this, agriculture is progressively moving from the traditional method to modern systems for more production (Chandio *et al.,* 2017; Jan *et al.,* 2017; Saqib, *et al.,* 2018; Sasu, 2023). The improvement in the agricultural production cannot be derived without adoption of modern technology and inputs. In agriculture, credit is a powerful development tool that enables farm households to invest and adopt improved farming methods and production technologies to enhance productivity (Abate *et al.,* 2016; Mekadim *et al.,* 2023).

Maize (*Zea mays l*) is an important cereal which belongs to the gramineae family (Fakorede *et al.,* 2013). The importance of maize among other cereal crops has been recognized and grown all over the world. Maize is one of the most important in west and central Africa. The countries depend on maize as a source of food, row materials, animal feeds and livelihood namely; South African, Nigeria, Ethiopia, Tanzania, Malawi, Kenya, Zambia, Uganda, Ghana, Cameron, Mali, Burkinafaso, Benin Republic, Angola, Zimbabwe, Togo and Cote-d'ivore. (Macauley and Ranaddita, 2015). In Nigeria Maize is most commonly cultivated Arabic crop (Adesoji *et al*., 2016) it holds an importance place in it's a food economy due to the embryo on rice and wheat flour import (Osundare, 2013).

Alhassan *et al.* (2020) and Osabohien *et al.* (2020) posit that access to credit is the key lever for agricultural investment, productivity increase, technology adoption, market participation and price transmission in many countries across Africa. Access to credit generally refers to the possibility of individuals or an enterprise to access financial services from the formal sources or carrying capacity of loans from financial institutions (Elias *et al.,* 2015). Access to credit offers farming household the liquidity they require to purchase

agricultural inputs, adopt technology or undertake other investment that are associated with higher yield and to increase their capacity to make longer term of investment. Credit accessibility help to cope with the exposed risk of negative income shocks and help to smooth income and consumption flow (Balana *et al.,* 2021). Access to credit has therefore, been enthusiastically canvassed in the development community for its ability and potentials to generate sustainable economic growth that favour the poor.

Agricultural sector incidentally lies in the hands of small scale farmers, whose expansion in terms of provision of scale of production is low due to low inputs and low income. The decline in the Nigerian economy, particularly in the area of agricultural productivity, has often been blamed on lack of credit facilities, which prevented many farmers from adopting improved farming practices, since some of them lack the collateral for securing loan or credit from financial institutions (Asogwa *et al.,* 2014). Giving credit to low income household can significantly reduce their level of poverty (Ozoh *et al.,* 2022 and Atamja and Yoo, 2021). It is therefore an important subject that is eagerly sought after in developing countries due to its capability and potential to produce sustainable economic growth that benefits the poor (Manja & BadJie, 2022; Ozoh et al., 2022, Atamja & Yoo, 2021; World Bank, 2019; Diange & Zeller, 2016).

While acquisition and utilization of credit for agricultural purposes promote productivity and consequently improve food security status of a community, farmers in various regions of the country have traditionally accessed credit facilities through formal, semi-formal and informal sources (Olomola and Yaro, 2015). The formal and informal subsectors make up Nigeria's financial system. Due to their lack of strong collateral and the significant processing costs associated with small loans, the formal sector, which is made up of commercial banks, is frequently highly hesitant to lend to impoverished rural households (Ozoh et al., 2022; Atamja & Yoo, 2021).

Studies over time have established that most Nigerian farmers lack access to formal agricultural finance. As a result, the Nigerian government has made some concerted efforts to improve farmers' access to financing (Ibrahim and Aliero, 2012). In recent years, such effort led to the implementation of the Anchor Borrowers' Scheme and the NIRSAL microfinance bank by the Central bank of Nigeria (CBN). These are to compliment the activities of the already existing Bank of Agriculture (CBN, 2015; Olomola and Yaro, 2015). Despite Government efforts to overcome the widespread lack of financial services

especially among rural farmers' by embarking on good credit policies to ensure availability and accessibility of credit such as rural banking programme, micro finance banks, agricultural credit guarantee scheme and Nigeria agricultural co-operative and rural development bank among others, the desired impact of these policies has not been achieved as the majority still have limited access to bank services to support private initiatives. Financing of agricultural inputs and labour wages require liquid cash which often is not readily available to the smallholder farmers still facing problems in the access to credits due to meager nature of the loan amount required by farmers, which is difficult to administer and the inability to provide collateral demand by formal sources (Chandio *et al*., 2017, Saqib *et al*., 2018).

Ademiluyi (2014) analyzed the determinants of farmer's welfare in Plateau State, Nigeria; Daemane and Muroyiwa (2022) analyzed factors that influence small scale maize farmers access to credit facilities using logistic regression model. Etim and Edet (2021) measured the impact of agricultural credit on the welfare of farmers in Akwa Ibom State, Nigeria; Amanullah *et al.* (2020) determined the impact of credit constraints on wheat farmers' welfare in an agrarian economy; Ozoh *et al. (*2022) investigated the impact of access to credit on household welfare in Nigeria. In order to bridge the gap created by these researchers, this study aim at assessing the determinants of access to credit of maize farmers especially in the study area is not well documented. Based on this, the study is focused on the determinant of access to credit of maize (*Zea mays*) farmers in Southern Taraba, Taraba State, Nigeria.

METHODOLOGY

Study Area

The study was conducted in Southern part of Taraba State, Nigeria. The region consists of five (5) Local Government Areas (LGAs) which - Wukari, Takum, Ussa, Ibi and Donga. It lies between latitudes $8^{0}30^{0}$N and $9^{0}30^{0}$E of the equator and between longitudes $8^{0}30^{0}$N and $10^{0}30^{0}$E of the Greenwich Meridian as shown in Figure 2. The area covers 14,099Km^{2} land mass with a population of about 687,077 people (NPC, 2006). The National Population Commission had projected an annual growth rate of 3.5% which brought the population figure to 1,233,080.294 people as at 2023 (Danladi *et al.,* 2024). The area shares boundaries with Gassol, Bali, Kurmi, Gashaka and Karim-lamido Local

Government Areas to the North, Nasarawa State and Plateau State to the North-west, Benue State to the south-west and Republic of Cameroon to the South-East. It has a tropical wet and dry seasons, well drained alluvial soils and characterized by both savannah and rain forest vegetation. Its dry season last for a minimum of four months (December to March) while the wet season spans from early March to late November in the south. The area had mean annual rainfall of 180mm (Danladi *et al.,* 2024).

Majority of its inhabitants depend on subsistence agricultural practices mainly in food and cash crops like Sorghum, yam, maize, sesame, rice, and cassava among others at a small-scale level, fresh water fishing and forestry. Livestock keeping is a minor occupation of the population of the area dealing on poultry, goats, rabbits, cattle, pig and fish farming. Other activities include local and regional trading in agricultural products, civil service, livestock, palm oil processing, rice milling and other small-scale industries. Ethnic groups include; Jukun, Chamba, Kuteb, Tiv, Fulani, Hausa, Yoruba, Igbo among others (Rukwe *et al.,* 2019).

Method of Data Collection

Primary data was used for this research work. The primary data was obtained through administering of structured questionnaires to respondents. Data collected include socioeconomic characteristics of maize farmers, credit status of the farmers, cost and return of maize production and information on welfare.

Analytical Techniques

Data were analysed using descriptive and inferential statistics. Specifically, objective i (describe the socioeconomic characteristics of the respondent), objective iii (identify constraints faced by respondents in credit acquisition) were analysed using frequency, percentage, mean Objective ii (describe the credit status of the respondents) was analysed using direct elicitation model, objective iv (assess the determinants of credit constraints) was analysed using Logistic regression model and objective v (analyze the effect of credit constraints on household welfare of the respondents) was analyzed using two-stage least square regression model.

Model Specification

Binary logit regression

$$P(Y) = 1/ [1+ \exp - (\alpha - \Sigma\beta iXi) \quad (1)$$

In order to linearize the right hand side a logit transformation was applied by taking logarithm of both sides therefore we have;

$$\text{Logit } P(Y) = \alpha + \Sigma\beta i\, Xi \quad (2)$$

$$Yi = \alpha + \beta X1+\beta X_2+\beta X_3+\beta X_4+\beta X_5+\beta X_6+\beta X_7+ \beta X_7+Ui \quad (3)$$

Where

Yi Represent Access to credit (Yes=1, No=0)

α Represent parameter

β Represent the coefficient of independent variables

X_1 = Sources of credit (Yes=1, No=0)

X_2 = Occupation (Farming= 1, Otherwise=0)

X_3 = Collateral (Yes =1, No= 0)

X_4= Marital status (Yes =1, No= Otherwise)

X_5 = income (Naira)

X_6 = Farm size (Ha)

X_7 = Output (kg)

X_8 = Age (years)

RESULTS AND DISCUSSION

Constraints Faced By Maize Farmers in Credit Acquisition

The result of constraints faced by maize farmers in the study area in accessing credit is presented in Table 6. The findings revealed that complicated application procedures and high interest rate were the most constraints faced by farmers in the study area. The result conform to Ajah *et al.* (2017), Aladebeji *et al.* (2017), Akparo *et al.* (2022) and Rahman *et al.* (2022) who revealed that one of the major constraint to accessing credit was high interest rate. Lack of collaterals and Short repayment time were another constraints faced by maize farmers in the study area in credit acquisition. The result is also similar to Simonyan *et al.* (2019) and Ndanitsa *et al.* (2021) who revealed that lacks of collateral and short repayment were among the major constraints in accessing credit.

Another constraint in credit acquisition by maize farmers in the study area was late released of funds. This is in consonance with Ukuabe *et al.* (2020) and Ndanitsa *et al.* (2021) and Elum and Obian (2020) who revealed that untimely disbursement of credit and excessive bureaucracy in processing loan, bureaucratic complexity were among the major constraints faced by farmers in accessing credit respectively. Also, lack of awareness of credit sources was a constraint faced by the farmers in credit acquisition. This result conform to Ajayi *et al.* (2017) and Ukuabe *et al.* (2020) who revealed that, lack of information on credit sources and lack of access to credit information were among the major constraints faced by farmers in accessing credit. Fear of harassment from credit sources was the least constraint militating accessing credit by farmers in the study area.

Table 1: Constraints faced by maize farmers in credit acquisition

Constraints o access to credit	SA	A	D	SD	Mean	Remark
Application procedures are complicated	120	42	8	3	3.6	Accepted
High interest rate	111	52	10	0	3.6	Accepted
Lack of collaterals	87	64	19	3	3.4	Accepted
Short repayment time	92	59	20	2	3.4	Accepted
Late release of funds	81	71	18	3	3.3	Accepted
Lack of awareness of credit sources	58	72	33	10	3.0	Accepted
Fear of harassment from credit sources	49	59	53	12	2.8	Accepted

Source: Field survey, 2024

Determinant of Access to Credit by Maize Farmers

The result of determinant of access to credit by maize farmers in the study area is presented on Table 7. The result revealed that the LR chi square statistics of 191.22 which is significant at 1% level of probability implying that the independent variables included in the model significantly predicted the dependent variable in the logistic regression. On the other hand, the strength of association between the dependent and independent variables are captured by estimated Pseudo R^2 value of 0.7135. The value means that the strength of association between the dependent and independent variable was 71.35%.

The result revealed that collateral, marital status, income, farm size and age were the determinants of access to credit by maize farmers in the study area. The result obtained indicates that the coefficient of collateral (0.8149326) was positive and statistically significant at 5%. This indicates that there is a positive relationship between collateral and access to credit by maize farmers in the study area. The odds ratio of collateral was

2.259023 implying that a unit increase in the collateral demanded by the lender the odds of a farmer to have access to credit increases by 2.259023 times. The result shows that the variable marital status was significant at 5% level of significance and positively determines farmer's access to credit facilities in the study area. The odds ratio of marital status of farmers was2.345359 which indicates that maize farmers who were married had better chances or are more likely to have access to credit by 2.345359 times the odds of maize farmers who were not married. The findings does not correspond to the findings of Osunmakinde *et al.* (2024) who found out that marital status does not determine access to credit in their study . Also does not conform to the findings of Daemane and Muroyiwa (2022).

The coefficients of income was (-1.165398) which had a negative effect and statistically significant at 1%. This revealed that there is a negative relationship between farmer's income and access to credit in the study area. The odd of income was 0.3117984 implying that a unit decrease in farmers income will decrease the odds or chances of accessing credit by 0.3117984 times. This supports the findings of Osumakinde *et al.* (2024) who revealed that household income negatively influences access to credit.

Table 2: Determinant of access to credit by maize farmers

Variable	Odd Ratio	Coefficient	Std. Error	Z
Sources of credit	1.627281	.4869105	.5807027	1.36
Occupation	.797786	-.2259149	.3089203	0.58
Collateral	2.259023**	.8149326**	.8500262	2.17
Marital status	2.345359**	.8524386**	.9498646	2.10
Income	.3117984***	-1.165398***	.0941693	3.86
Farm size	.6088332*	-.496211*	.1586354	-1.90
Output	.8856835	-.1213956	.238281	-0.45
Age	.2308909*	-1.46581*	.2022252	-1.67
Constant	3.72e+07***	17.43278***	1.82e+08	3.57
Log likelihood	-98.537083			
L R Chi^2 (6)	191.22			
Pseudo R^2	0.7135			

Significant *** at 1%, ** at 5% and * at 10%

Source: Field survey, 2024

CONCLUSION

Objective of this study was to assess the determinant of access to credit of maize farmers in southern Taraba State, Nigeria. The findings from this study showed that in the study area the major constraints faced by maize farmers in accessing credit were; application procedures are complicated, high interest rate, lack of collateral and short repayment time. From the logit regression table for determinant of access to credit by maize farmers the result revealed that, collateral, marital status, income, farm size and age were the determinant of access to credit in the study area. The study recommends that policy needs to pay attention on improving the access of rural farming households to information, extension services, and insurance coverage to mitigate key demand-side factors hindering smallholders' access to credit. And institution capacity building for both lenders and borrowers should be an integral part of every credit programme that will be provided in order to increase agricultural productivity and the income of farmers, thus policy measures for improving access to credit should be developed based on farmer's needs.

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