

## UTILIZATION OF NIRSAL CREDIT AMONG MAIZE FARMERS OF AGRICULTURAL COOPERATIVES IN THE GOMBE LOCAL GOVERNMENT AREA OF GOMBE STATE

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### ABSTRACT

*The research aimed to evaluate the use of the Nigeria Incentive-Based Risk Sharing System for Agricultural Lending (NIRSAL) credit among maize farmers in agricultural cooperatives within the Gombe Local Government Area of Gombe State, Nigeria. A multi-stage sampling procedure was employed to select 190 respondents, with data collected through questionnaire. Descriptive statistics and the logit regression model were used in analyzing the collected data. The results indicated that the majority of farmers were male (77.37%), with an average age of 39 years. Over 46.84% of the respondents had completed secondary education. Approximately 78.94% of the farmers were married, and 40% had between 11 to 20 years of farming experience. The average household size was five members, and the average annual income of the farmers was ₦368,184.7. Notably, 96.2% of the farmers had contact with extension agents, while 38.42% had access to credit. Farmers primarily directed NIRSAL credit toward various activities, including primary production (100%), mechanization (82.19%), logistics (75.34%), processing (71.23%), and integrated farming (95.89%). Socio-economic factors influencing access to NIRSAL credit revealed that work experience, marital status, gender, education level, and age were significant at the 5% level of probability. A major constraint identified was the short repayment period associated with NIRSAL credit, which hindered farmers' ability to utilize it effectively. The study recommends that the government extend the credit repayment duration to facilitate easier access for farmers. Additionally, reducing interest rates on loans from financial institutions would encourage greater agricultural production.*

**Keywords:** Credit, Utilization, NIRSAL, Maize farmers

### INTRODUCTION

The significance of agriculture in the development of the Nigerian economy cannot be overlooked. This is because agriculture supplies food for households, creates employment opportunities for job seekers, alleviates poverty by providing income for farmers, and serves as a source of foreign exchange inflow for the government (Matthew *et al.*, 2019). Despite being considered one of the most vital sectors of African economies, the agricultural sector's performance differs significantly between countries. Additionally,

it has been observed that the sector has experienced a notable decline due to inadequate credit facilities necessary to boost productivity (Chandio *et al.*, 2019). The most significant challenge hindering agricultural development remains insufficient funding. Capital is the primary input in agricultural production, and small-scale farmers, who generate the majority of the country's agricultural output, continue to struggle with access to financial resources. The growth of Nigeria's agricultural sector is widely recognized as being heavily dependent on credit and capital (Gbigbi, 2021).

Credit refers to the utilization or possession of funds and services without immediate payment. It can take the form of borrowed money or agricultural credit, which includes trade credit and bank loans. Agricultural credit can manifest in various forms, such as seeds, fertilizers with deferred payments, use of tractors, labor, storage facilities, and more. The term credit also denotes the ability to borrow (Mgbakor, Patrick & Divine, 2014). Cooperatives serve as a means to provide affordable credit to rural areas, particularly when backed by international donors and governments. They play a crucial role in facilitating development activities in rural communities through the active participation of individual members (Oke *et al.*, 2007).

Researchers emphasize that cooperatives play a crucial role in enhancing agricultural development. In Nigeria, cooperative societies have significantly supported agricultural activities by providing financial assistance and facilitating effective credit delivery. Cooperatives are well-equipped to address urgent financial requirements, thereby boosting production. They offer loans through various schemes to fund agricultural initiatives. Recognizing the success of these credit systems, the Nigerian government has promoted the establishment of cooperative societies as a strategy to encourage collective efforts aimed at improving the productivity and efficiency of smallholder farmers (Gbigbi and Achoja, 2019).

Federal and state governments have intensified efforts to promote agricultural development by establishing various agricultural credit schemes, including the Nigeria Incentive-Based Risk Sharing System for Agricultural Lending (NIRSAL) from 2011 to the present. NIRSAL departs from traditional approaches by simultaneously addressing three key areas: it

strengthens the agricultural value chain, enabling banks to lend to the sector with confidence; it encourages banks to provide loans to the agricultural value chain by offering substantial incentives and technical support; and it focuses on lending to all sizes of producers rather than a broad, undefined strategy. Additionally, NIRSAL actively works on developing market access in collaboration with essential buying groups, state governments, private investors, farmer organizations, and processors (Central Bank of Nigeria, 2012).

To mechanize and enhance agricultural activities, thereby improving food security, increasing farmers' income, and providing vital raw materials for local agro-based industries, the agricultural sector requires substantial financing. Farmers' financial capacities must be strengthened through greater access to agricultural credits and loans. Unfortunately, a large portion of the farming population consists of peasant farmers who are often poor rural residents and face significant challenges in obtaining credit.

Over the years, the government has implemented various policies, schemes, and support measures to help rural farmers boost productivity. These initiatives include the Agricultural Credit Guarantee Scheme established in 1977, the Agricultural Credit Support Scheme, and the Commercial Agriculture Credit Scheme, as well as the licensing of Microfinance Banks. Despite these efforts, including the formation of Farmers' Associations and a committee initiated by the Gombe State government through the Ministry of Agriculture to facilitate rural farmers' access to loans from established agricultural financial institutions, many peasant farmers still find agricultural loans elusive.

In Gombe State, as in many northern regions, insufficient information and credit resources are seen as the primary obstacles for farmers seeking to enhance their economic activities and living standards. Even when credit facilities are available, rural farmers often struggle to access them, despite their critical role in production. This study examines the use of NIRSAL credit by maize farmers who are members of agricultural cooperatives in the Gombe Local Government Area.

The specific objectives are to:

- i. describe the socio-economic characteristics of farmers in the study area;
- ii. examine how the credit provided by NIRSAL to farmers is used in the study area;
- iii. determine the socio-economic characteristics of the farmers influencing their access to credit given by NIRSAL, and
- iv. identify the challenges faced by farmers in accessing credit given by NIRS

## MATERIALS AND METHODS

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### Study Area

The study took place in Gombe Metropolis, Gombe State. According to the National Population Commission (2006), Gombe State has a population of 2,353,879, and with a projected growth rate of 3.5%, the population is estimated to be 4,120,632 in 2022. The Gombe metropolitan area covers 52 square kilometers and is located between latitudes 9°30'N and 12°30'N and longitudes 8°45'E and 11°45'E of the Greenwich Meridian. It experiences two distinct climates: a dry season from November to March and a rainy season from April to October, with an average annual rainfall of 850 mm and maximum temperatures ranging from 27°C to 40°C (ADP, 2020). Gombe State is divided into eleven local governments with Gombe serving as the state capital and located in its central region. The predominant ethnic groups in the local government are the Fulani and Hausa, whose main occupations include business and agriculture, particularly crop production and livestock rearing (Lamurde, 2021).

### Sampling Techniques

The multi-stage sampling method was utilized in this study. In the first stage, the Gombe metropolitan area was intentionally chosen due to its significant population of maize farmers. In the second stage, all ten wards were deliberately selected because they contain a high proportion of maize farmers. From a total sample frame of 362 maize farmers, a sample size of 190 was randomly selected using the Yamane sample size formula as used by Onwuaroh *et al.* (2017) to eliminate bias

### Analytical Techniques

Descriptive statistics which involve the use of frequency count percentage and mean were used to achieve objectives i, ii, and iv while the socio-economic characteristics of farmers influencing their access to credit were analyzed using the logit regression model. The model is represented as:

$$Y = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + U_1$$

Where:

Y = access to NIRSAL credit by maize farmers (access=1, no access=0)

$b_0$  = Intercept

$x_1$  = Age (years)

$x_2$  = Level of education (years spent in school)

$x_3$  = Farming experience (years)

$x_4$  = farm size in hectares (hectare)

$x_5$  = Household size

$x_6$  = Membership of cooperative

$x_7$  = Access to extension contact (number of contacts)

$U_1$  = Error term

## RESULT AND DISCUSSIONS

### Socio-Economic Characteristics of Respondents

This section examines the social and economic characteristics of the respondents, focusing on factors

such as age, gender, educational level, marital status, household size, and years of farming experience.

The results in Table 1 indicate that males represent 77.37% of the surveyed population, confirming their dominance as maize farmers in the area. This aligns with findings from Danladi *et al.* (2021) and Onwuaroh *et al.* (2021), which noted that men are more engaged in farming activities than women, primarily because men handle more complex tasks like land preparation, while women and children manage lighter duties such as planting and weeding. Regarding educational attainment, approximately 46.84% of respondents have completed secondary education, suggesting a level of literacy that enables them to comprehend instructional materials and appreciate extension services. About 14.74% have attended tertiary institutions, which may influence community decisions due to their enhanced educational background. This supports Ekerere's (2012) assertion that education significantly impacts economic development and individuals' attitudes toward adopting new practices.

In terms of age, the majority of respondents (40.53%) are between 30 and 39 years old, with a mean age of 39, consistent with findings from Onwuaroh *et al.*

(2021) and Issa *et al.* (2016). This suggests that the farmers are relatively young and likely have the energy for maize farming. As for marital status, 78.95% of the farmers are married, indicating that married individuals are more likely to engage in agriculture, likely due to their responsibilities for providing basic household needs, as noted by Akinbile (2007).

The household size analysis reveals that 55.26% of respondents have between 1 to 6 members, with a mean household size of 5. Larger households can offer more labor for farming but also pose challenges in terms of providing for their dependents' needs, which can limit savings and lead to higher consumption of farm produce (Yusuf *et al.*, 2015). Finally, regarding farming experience, 40% of respondents have been involved in maize production for 11 to 20 years, while 30.53% have 1 to 10 years, and 29.47% have over 20 years of experience. This aligns with Ekerere's (2013) findings that a significant proportion of respondents have over ten years of farming experience, indicating a strong knowledge base that can enhance their maize production efficiency.

Table 1: Socio-economic characteristics of the respondents

Variable	Frequency	Percentage	Mean ( $\bar{x}$ )
<b>Sex</b>			
Female	43	22.63	
Male	147	77.37	
<b>Total</b>	<b>190</b>	<b>100%</b>	
<b>Educational status</b>			
Non Formal Education	34	17.89	
Primary school	39	20.53	
Secondary education	89	46.84	
Tertiary education	28	14.74	
<b>Total</b>	<b>190</b>	<b>100%</b>	
<b>Age of the respondents</b>			
20 – 29	33	17.37	
30 -39	77	40.53	39
40 -49	44	23.16	
50 – 59	19	10	
60 and above	17	8.95	
<b>Total</b>	<b>190</b>	<b>100%</b>	
<b>Marital status</b>			
Single	40	21.05	
Married	150	78.95	
<b>Total</b>	<b>190</b>	<b>100%</b>	
<b>Household size</b>			
1 – 6	105	55.26	5
7-12	80	42.11	
13 – 18	5	2.63	
<b>Total</b>	<b>190</b>	<b>100%</b>	
<b>Farming Experience</b>			
1-10	58	30.53	16
11-20	76	40	
21-30	38	20	

30-39	18	9.47
<b>Total</b>	<b>190</b>	<b>100%</b>

Source: Field survey, 2023

In terms of respondents' contact with extension services, Table 2 shows that approximately 96.2% of the sampled maize farmers have recently interacted with extension agents who provide information on technological innovations for maize production. This aligns with the findings of Babuga et al. (2020), which reported that 64.28% of maize farmers in Bauchi State have access to extension services, while 35.72% do not. Yusuf et al. (2015) also noted positive interactions with extension agents in Niger State, emphasizing that these visits help farmers improve their management practices and overall productivity. The Table further reveals that 38.42% of respondents earn less than N201,000 annually, with an average income of N368,184. This contrasts with Asundare

(2013), who reported an average income of N39,877 for maize farmers.

Access to credit as seen in Table 2 indicates that 38.42% of the sampled farmers have access to credit, while 61.58% do not. This finding differs from Danladi *et al.* (2021), which reported that 58.43% of maize farmers had access to credit facilities for their farming activities. Finally, the Table also shows that most maize farmers operate on between 1 to 3 hectares of land, indicating an average farm size. This finding is consistent with Issa *et al.* (2016), which stated that 91.7% of farmers have land sizes within this range, suggesting that maize farming is primarily conducted by small-scale farmers.

**Table 2: Socio-economic characteristics of the respondents (n=190)**

Variable	Frequency	Percentage	Mean ( $\bar{x}$ )
<b>Extension contact</b>			
No	39	3.8	
Yes	151	96.2	
<b>Total</b>	<b>190</b>	<b>100%</b>	
<b>Individual income</b>			
Less than 201,000	73	38.42	N368,184.7
201,000 - 400,000	67	35.26	
401,000 - 600,000	32	16.84	
600,000 and above	18	9.47	
<b>Total</b>	<b>190</b>	<b>100%</b>	
<b>Access to credit</b>			
No	117	61.58	
Yes	73	38.42	
<b>Total</b>	<b>190</b>	<b>100%</b>	
<b>Farm size</b>			
Less than 1	25	13.16	2.22
1 – 3	109	57.37	
3.1 - 5	29	15.26	
5.1 - 7	22	11.58	
Above 7	5	2.63	
<b>Total</b>	<b>190</b>	<b>100.0</b>	

Source: Field survey, 2023

#### **Utilization of Credit by NIRSAL to Farmers in the Study Area**

Table 3 displays the distribution of maize farmers regarding the use of credit received from NIRSAL. The results indicate that 100% of the respondents utilized credit for primary production, 95.89% for integrated farming, 82.19% for farm mechanization, 75.34% for logistics, and 71.23% for processing. This underscores the crucial need to provide credit

to farmers, as its importance in promoting agricultural development and enhancing production efficiency cannot be overstated. Etunim (2020) found that maize farmers who effectively utilized credit achieved higher yields per hectare compared to those who did not access credit in Delta State. This suggests that both accessibility and effective use of credit can significantly improve the production capacity of maize farmers.

**Table 3: Utilization of Credit by NIRSAL to Farmers (n=73)**

Variable	Frequency	Percentage
<b>Utilization of Credit Received</b>		
Primary Production	73	100.00
Mechanization	60	82.19
Logistic	55	75.34
	52	71.23
Processing	70	95.89
Integrated farming	<b>*310</b>	<b>*424.65%</b>
<b>Total</b>		

Source: Field survey, 2023

**\*Multiple Responses**

**Socio-economic Characteristics of the Farmers Influencing Access to Credit given by NIRSAL**

The binary logit regression analysis results (Table 4) indicate that various socio-economic factors influence respondents' access to credit from NIRSAL. The analysis, interpreted using log odds, reveals that age, gender, education, marital status, and years of farming experience significantly impact access to credit, with all factors showing a positive effect.

Specifically, the Table further shows that age was significant at the 5% level, with a coefficient of 0.659. This indicates that a unit increase in age is likely to increase a farmer's access to credit by a factor of 0.659. Education was also significant at the 5% level, with a coefficient of 0.421, suggesting that a unit increase in education will likely enhance a farmer's access to credit by a factor of 0.421. Farming experience was significant at the 5% level, with a coefficient of 0.831, implying that a unit increase in farming experience is likely to increase a farmer's access to credit by a factor of 0.831.

Regarding marital status as a categorical variable, married individuals are more likely to have access to credit by a factor of 0.641 compared to their single counterparts. Additionally, concerning gender, each male is more likely to have access to credit by a factor of 3.413 compared to females. These results align with Daemene and Maroyiwa (2022), who posited that age, marital status, education, and farming experience positively influence access to credit for small-scale maize farmers. The research by Gebeyehu and Abddissa (2020) indicated that the socio-economic characteristics of farmers significantly affect their access to credit. Similarly, Ijioma and Osondu (2015) examined agricultural credit sources and the factors influencing credit acquisition among farmers in Idemili Local Government Area, Anambra State, Nigeria. Their findings identified age, marital status, education level, farm size, and loan amount as significant predictors of the agricultural credit received by farmers. These results align with the findings of this study.

**Table 4: Socio-economic Factors Influencing the Respondents' Access to Credit by NIRSAL**

Socio-economic Factors	Coefficient (log odds)	Std. Err.	T-value	P-value	95% Conf.	Interval	Sig
Ages	0.659	0.355	1.13	0.013	0.684	5.026	**
Sex(Male)	3413	7.440	0.01	0.012	0.000	0.000	**
Education	0.421	0.266	01.46	0.014	0.130	1.173	**
Income	0.612	0.165	03.23	0.241	0.531	1.251	
Marital(Married)	0.641	0.653	10.37	0.011	0.556	1.234	**
HH Size	-1.061	0.875	-0.543	0.570	0.732	1.514	
Farming experience	0.831	0.324	10.65	0.012	0383	1.004	**
Extension Contact	-1.922	0.000	-1.0.01	0.881	0.000	0.000	
Constant	0.008	0.013	2.543	0.006	0.000	0.245	***
<b>Mean dependent Var</b>	<b>0.333</b>	<b>SD dependent var</b>	<b>0.433</b>				
<b>Pseudo r-square</b>	<b>0.355</b>	<b>Number of obs</b>	<b>190.000</b>				
<b>Chi-square</b>	<b>34.312</b>	<b>Prob&gt;chi2</b>	<b>0.000</b>				

Source: Field survey, 2023

\*\*\*p<0.01, \*\*p<0.05, \*p<0.1

### The Challenges Faced by Farmers in Accessing Credit given by NIRSAL

Table 5 presents the distribution of maize farmers based on the challenges they encounter in accessing credit. The results indicate that 34.21% of the respondents struggle with a lack of collateral, while 24.21% face issues related to insufficient farmland. Additionally, 24.74% are affected by high interest rates and another 24.21% experience difficulties due to a lack of guarantors. Notably, 34.74% of respondents cite short repayment terms as a significant

challenge. This aligns with the findings of Awunyo-Vitor (2014), which noted that smallholder maize farmers in Ghana also contend with issues such as short repayment periods, lack of collateral, and limited access to farmland. Unachukwu *et al.* (2022) identified a lack of collateral as a barrier preventing farmers from accessing credit. Similarly, Manteaw *et al.* (2023) highlighted that insufficient collateral, high interest rates, and short repayment periods significantly restrict farmers' access to credit. These findings align with the results of this study.

**Table 5: The Challenges Faced by Farmers in Accessing Credit given by NIRSAL(n=190)**

Variable	Frequency	Percentage
<b>Challenges</b>		
Lack of Collateral	65	34.21
Short Term Payment	66	34.74
Lack of Available Farmland	46	24.21
High Interest rate	47	24.74
Lack Guarantors	46	24.21
<b>Total</b>	<b>*270</b>	<b>*142.11%</b>

Source: Field survey, 2023

#### \*Multiple Responses

### CONCLUSION AND RECOMMENDATIONS

In conclusion, the study highlights that maize farmers are predominantly young, literate, and married, with considerable household size and significant farming experience. However, despite their experience, many still struggle with low production levels due to limited access to credit, which hampers their ability to procure essential inputs promptly. While NIRSAL has provided credit facilities that support various aspects of farming—from primary production to processing—the access to these funds is significantly influenced by socio-economic factors such as age, gender, education, marital status, and years of experience. This disparity suggests that not all farmers have equal opportunities to obtain credit, often depending on their social and economic backgrounds. Furthermore, the study identified several critical challenges that maize farmers face in accessing these credit facilities, including insufficient collateral, short repayment terms, inadequate farmland, high interest rates, and a lack of guarantors. Addressing these issues is essential to promote the growth and sustainability of maize farming in Nigeria, ensuring that farmers can effectively enhance their productivity and contribute to the agricultural sector.

It is recommended that women be given top priority by financial institutions and government agencies when providing credit to farmers. Additionally, the government should extend the duration of credit repayment to facilitate easier access to credit through NIRSAL. Furthermore, both the government and financial institutions should lower interest rates on

loans to farmers, as this would encourage increased agricultural production.

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