Determinants of Credit Access by Small Scale Cassava Farmers in Awka North Local Government Area of Anambra State, Nigeria

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ABSTRACT

The study examined the determinant of access to credit by small scale cassava farmers in Awka North Local Government Area of Anambra State, Nigeria. Specifically, the study identified the major sources of credit among the small-scale cassava farmers; estimated the determinants of farmers' access to formal credit; compared the income of the farmers who have access to formal credit and those who had not; and identified constraints to farmer's access to credit. A simple random sampling method was used in the selection of 240 respondents (120 who had access to credit and 120 who did not). The data for the study was from primary source through the use of structured questionnaire designed in line with the objectives of the study. Descriptive statistics, binary logistics regression model, t-test and mean score from a three-point Likert type of scale were used to achieve the stated objectives. The result on determinants influencing credit access among cassava farmers indicated coefficients of membership of cooperative society (4.971) to significantly determine the probability of small scale cassava farmer's access to credit at 1% while the coefficients of experience (2.134), farm size (2.772), extension contact (2.669) and distance to credit source (2.333) significantly determine the probability of small scale cassava farmer's access to credit at 5%. The Independent t test result indicates that farmers who had access to credit had better farm income (374, 627.90) compared to their counter parts in who had no access to credit (250, 129.87) which implied a significant difference ($P<0.05$). The major constraints of cassava farmers in credit access from formal and informal credit institution is inadequate collateral security (2.9) and high interest rate (2.6) respectively. The study recommended among others that Financial institutions such as Agricultural and microfinance banks, should be established in the rural areas and the procedures for securing loans should also be streamlined in order to make it simple for the farmers.

Keywords: determinant, credit access, small scale cassava farmers, Awka North Local Government Area, Anambra State, Nigeria

INTRODUCTION

Agriculture has always played a pivotal role in the history of Nigerian economic development by providing food security, employment, foreign exchange earnings and poverty reduction. Despite the enormous contributions of agriculture to the Nigerian economy over the years, the sector has slipped into a systemic decline, particularly in the past three decades since the petroleum industry replaced the sector as the main source of government revenue and foreign exchange earnings (Obed, Okpukpara & Ude, 2021). In Nigeria, agricultural credit has for long been identified as a major input in the development of the

agricultural sector. In fact, the lack of adequate, accessible, and affordable credit is among major factors responsible for the systemic decline in the contribution of agriculture to Nigerian economy (Onugu, 2015).

Agricultural credit is very important for sustainable agricultural development to be achieved in any country of the world especially among the small scale farmers. Rural credit has proven to be a powerful instrument against poverty reduction and development in rural areas. Farmers are particularly in need of timely credit because of the seasonal pattern of their activities and the important uncertainty they are facing (Ololade & Olagunju, 2013). The role of agricultural credit is closely related to providing needed resources which farmers cannot source from their own available capital. In respect to this, the provision of agricultural credit has become one of the most important government responsibilities in the promotion of agricultural development in Nigeria (Olagunji & Adeyemo, 2011). One of the reasons for the decline in the contributions of agriculture to the economy is lack of a formal national credit policy and paucity of credit institutions, which can assist farmers.

Farm credit is widely recognized as one of the intermediating factors between adoptions of farm technologies and increased farm income among rural farmers in Nigeria (Omonona *et al*, 2011; Akpan *et al*, 2013). It is one of the fundamental ingredients of sustainable agricultural production; as such its accessibility and demand is among the prerequisites for attaining the national goal of reducing rural poverty and ensuring self-sufficiency in food production in the country (Nwaru *et al*, 2011 & Akpan et al, 2013). Consequently, a general awareness on the significance of credit as a tool for agricultural development has been increasing (Omonona *et al*, 2011). Agricultural credit is seen as an undertaking by individual farmers or farm operators to borrow capital from intermediaries for farm operations (Odoh et al, 2010). According to Ololade and Olagunju (2013) credit determines access to all of the resources on which farmers depend. Consequently, provision of appropriate macroeconomic policies and enabling institutional finance for agricultural development is capable of facilitating agricultural development with a view to enhancing the contribution of the sector in the generation of employment, income and foreign exchange (Olomola, 2011).

According to Olayemi (2012), credit involves all advances released for farmers use to satisfy farm needs at the appropriate time with a view to refunding it later. Thus, credit can be in the form of cash or kind, obtained from either formal, semi-formal or informal sources. Contribution by Lawal *et al*. (2010) showed that a direct relationship exists between social capital, contribution in the associations by the farming households and access to credit. Improving access to credit is often regarded as one of the key elements in raising agricultural productivity and has been widely perceived as an effective strategy to increase smallholder productivity and alleviate poverty (Sharma, 2014; Adugna & Heidhues, 2014). It can relax the liquidity constraints that smallholder farmers face. It can also improve their risk bearing capability, influence adoption of new farm technology, equip them with new skills and create jobs, and encouraging activities that generate dynamic economic growth. This helps smallholder households cope with ex-post risks of negative-income shocks and to smooth income and consumption flows (Khandker, 2013; Parker & Negarajan, 2011; Rosenzweig, 2011; Zeller, 2010). Expanded access to credit has therefore been enthusiastically canvassed in the development of community for its ability and potential to generate sustainable economic growths that favor the poor (Murdoch & Haley, 2012; Coleman, 2012; Robinson, 2011).

The main providers of financial services especially credit, are the commercial banks. Banks target clients with ownership of relatively high value mortgage-able property, people who possess pay slips as proof of employment and collateral for loans, which many poor small holder farmers lack (Okpukpara, Onwuemelie, Ude & Okpukpara, 2021). Collateral for the commercial financial sector plays an important role because it ensures repayment if the client's income is insufficient. In some cases, in addition to collateral are the transaction and administrative costs, interest rates and the costs of acquiring information about the borrower (Baumann, 2011). Furthermore, the financial intermediaries have not been able to serve their rural clientele

easily because it is costly, risky and a difficult task. Local leaders were faced with convenient risks and high transaction costs and therefore became reluctant to lend to the poor (Kuhn et al., 2012).

Lenders frequently demand collateral in order to assess the borrower's creditworthiness and to increase the risk-adjusted return on the loan. In the past researches, collateral requirements have been identified as a major determinant of the lender's decision to ration loan demand (Binswanger et al., 2011). The majority of formal lenders in developed and developing countries require physical collateral such as land. This lending policy is regressive for tenants, wage laborers, smallholders, and small-scale rural enterprises. It has serious implications for growth and equity objectives of development policy. Informal lenders on the other hand, often use collateral substitutes.

Rural credit helps rural poor economy in a variety of ways. Credit access can significantly increase the ability of households with no or few savings to meet their financial needs for agricultural inputs and productive investments. Access to credit could also increase rural poor household's willingness to adopt new technologies that raise both mean levels and riskiness of income (Rosenzweig, 2013). Finally, access to credit allows rural households to smooth their consumption in the case of adverse event. The importance of rural credit in rural economy is also well supported by empirical evidence. Diagne (2011) found positive relationship between credit access and household's welfare. It is sufficing to say that credit access and availability is essential for agricultural productivity. Despite the importance of credit to agricultural productivity, small scale cassava farmers in Awka North Local Government Area still face some challenges in the acquisition of credit which makes most of the farmers discouraged and relent in their effort to contribute to the productivity of farm produce.

Objectives of the Study

The study examined the determinant of access to credit by small scale cassava farmers in Awka North Local Government Area of Anambra State, Nigeria. Specifically, the study seeks to:

1. identify the major sources of credit among the small-scale cassava farmers;
2. estimate the determinants of farmers' access to formal credit;
3. compare the income of the farmers who have access to formal credit and those who had not; and
4. identify constraints to farmer's access to credit.

METHODOLOGY

The study was carried out in Awka North Local Government Area of Anambra State. Awka North local government area is domiciled in Anambra state, Southeast zone of Nigeria. The area lies between Latitude: 6°12.7614? N and Longitude: 7°4.3194? E. The area is home to the Igbo ethnic group and comprises nine (9) Districts which are: Achalla, Awba Ofemili, Amansea, Amanuke, Ebenebe, Isu-Aniocha, Mgbakwu, Ugbene, Ugbu-enu and Urum. The headquarters of the Local Government is situated in Achalla. According to Census (2006) the population of Awka North LGA is put at 112,608 inhabitants with a land mass of 347.5 km^2, with Igbo and English languages spoken extensively within the area. According to Agricultural Development Program (ADP) Awka Zonal Office, there are about 6,554 registered small-scale farmers in Awka north Local Government Area of Anambra State. A simple random sampling method was used in the selection of respondents. Two communities were randomly selected each from three (3) districts (Achalla, Amanuke and Ebenebe), making a total of six communities for the study. This was followed by selecting twenty (20) farmers randomly from each of the six communities, giving a total of one hundred and twenty respondents (120). Also, 120 farmers who had little or no access to credit where used for the comparative test analysis. The data for the study was from primary source through the use of structured questionnaire designed in line with the objectives of the study. Descriptive statistics, binary logistics regression model, t-test and mean score from a three point Likert type of scale were used to achieve the

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stated objectives. Socioeconomic characteristics of small scale farmers (objective 1) and sources of credit to small scale farmers (objective 2) was achieved using descriptive statistics such as frequency counts, mean and percentages.

Model Specification

Binary Logistic Regression Model

Determinants of farmer's access to credit in the area was achieved using binary logistic regression analysis. The dichotomous dependent variable defined as access to formal credit was assigned a value of 1 if the farmer had access to credit from formal institution within last two years or 0 if otherwise (Osuafor, Obiekwe, Obot & Ude, 2020). The implicit logistic regression model used to analyze the determinants of access to formal credit is specified below:

$\text{Log } Pi / (1-Pi) = F (X_{1,} X_{2,} X_{3,} X_{4,} X_{5,} X_{6,} X_{7,} X_{8.} \mu)$

Where, Pi = probability that farmers access formal credit (accessed =1, not accessed =0),

$X_1 - X_8$ = Regression coefficient

X_1 = Sex (1=male, 0 = female)

X_2 = Membership cooperative society (1 = a member, 0 = not a member)

X_3 = Age (years)

X_4 = Farming experience (years)

X_5 = Farm size (hectare)

X_6 = Extension contact (1 = yes, 0 = otherwise)

X_7 = Landownership (owner = 1, 0 = otherwise)

X_8 = Distance to credit source (near =1, 0 = otherwise)

μ = Stochastic error term (assumed to have zero mean and constant variable)

Independent t test

Independent T-test was used to compare farm income of farmers who had access to credit and those who do not have:

$$t = \frac{\bar{X}2 - \bar{X}1}{\sqrt{\frac{S^2_2 + S^2_1}{N_2 + N_1}}}$$

Where:

$\bar{X}2$= Average farm income of farmers with access to credit

$\bar{X}1$= Average farm income of farmers without access to credit

S_2 = Variance of farm income of farmers with access to credit

S_1 = Variance of farm income without access to credit

N = Sample size

Likert scale rating technique

Mean score from Likert type of scale was used to identify constraints to farmer's access to credits. The three-point Likert type of scale was used as specified below:

Opinion	Point
Very Serious (VS)	3
Serious (S)	2
Not Serious (NS)	1

The mean response to each item will be calculated using the following formula:

$$\bar{X} = \frac{\sum FX}{N}$$

Where: **x?** = mean response, $\sum$ = summation, F = number of respondents choosing a particular scale point, X = numerical value of the scale point and N = total number of respondents to the items. The mean response to each item was interpreted using the concepts of real limits of number. The numerical value of the scale points (Response Models) and their respective real limits are as follows:

Not Serious (NS) = 1 point with real limits of 0.5 – 1.49

Serious (S) = 2 points with real limits of 1.50 – 3.49

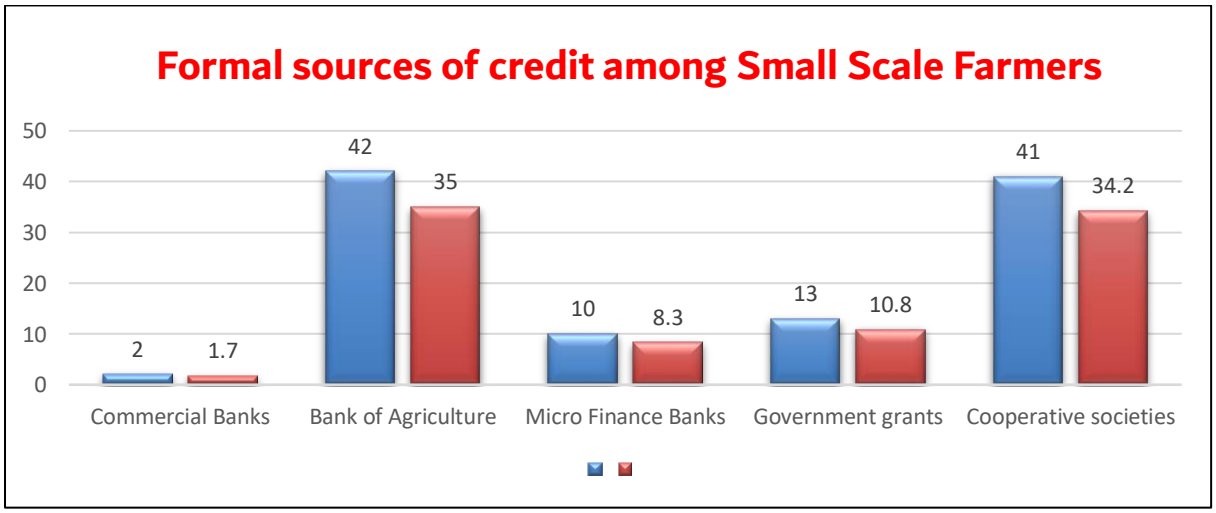
Very Serious (VS) = 3 points with real limits of 2. 50 – 3.49

RESULTS AND DISCUSSION

Major sources of credit among Small Scale Farmers

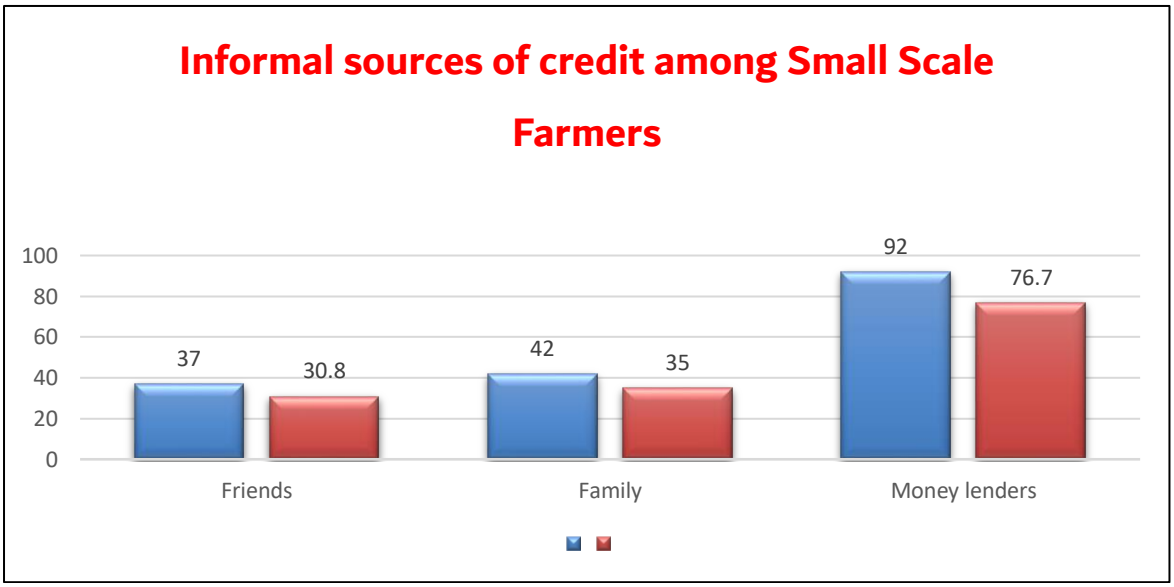
The sources of obtaining credit facility identified by the respondents are presented in Figure 1

Figure 1: Distribution of Respondents according to formal source of Credit (N=120)



Source: Field Survey, 2022*= multiple responses

Figure 2: Distribution of Respondents According to Informal Source of Credit (N=120)



Source: Field Survey, 2022*= multiple responses

The result in figure 1 revealed majority of cassava farmers access to formal credit in Bank of Agriculture (35.0%) followed by cooperative societies (34.2%) and government grants (10.8%). The impressive percentage obtained in Bank of Agriculture (35.0%) could be attributed to recent government intervention in the area of credit disbursement to farmers. However, credit from commercial banks (1.7%) was very low. This means that small scale cassava farmers in the area have not been able to exploit the low interest rate charged by these credit institutions. Pointedly, credit from non-institutional sources are more attractive because there is little or no insistence on collateral security. In the contrary, formal sources of credit (figure 1) had low patronage from the farmers which may be due to lack or limited presence of banks in the study area coupled with delay in approval and disbursement of loan and insistence of collateral security. This agrees with the survey carried out by Krain (2015) who observed that credit from formal financial institutions meet only a small portion of the total credit demanded of the agricultural sector. Krain (2015) found out that credit from the formal financial sources accounted for only 9.9% of the total credit available to the agricultural sector. The remaining 90.1% is from the informal financial sources mainly comprising loans from relatives, friends, rotational savings groups and one's superior at work (boss) and other sources.

Findings from this study could also be that poor farmers in the area lack the title for pieces of land they own and as a result they do not qualify for bank credit where collaterals are mostly required. This was supported by the findings of Steel et al. (2017). With respect to figure 2, cassava farmers obtained loan in informal credit source more from money lenders (76.7%) and family (35.0%). This implies that agricultural practices in such areas suffers setbacks because of insufficient amount of credit since majority of the farmers depend mainly on informal sources.

Determinants of Farmers access to Credit

Estimates of the Logistic Regression on determinants of small scale cassava farmer's access to credit are presented in Table 1.

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Table 1: Estimates of Logistic Regression

Variables	Marginal Effect	Z- Statistic	Probability (Z)
Sex (X_1)	0.552	-0.387	0.534
Membership of Cooperative Society (X_2)	4.971***	2.78	0.005
Age (X_3)	0.30	0.661	0.416
Experience (X_4)	2.134**	2.21	0.027
Farm Size (X_5)	2.772**	2.34	0.029
Extension contact (X_6)	2.669**	2.01	0.044
Land ownership (owner=1, otherwise=0) (X_7)	0.791	1.93	0.053
Distance to credit source (Near=1, 0= far) (X_8)	2.333**	-2.17	0.030
Constant	15.543	-1.86	0.063

Source: Computed from Field Survey, 2022. *= Coefficient significant at 5% level

LR Chi^2 = 60.00; Prob> Chi^2 =0.000; Pseudo R^2 = 0.593

The model's Chi squared value indicate that all variables included in the model significantly influenced the probability of scale cassava farmer's access to credit in the area at 1% confidence level. From the regression, coefficients of membership of cooperative society significantly determine the probability of small scale cassava farmer's access to credit at 1% while the coefficients of experience, farm size, extension contact and distance to credit source significantly determine the probability of small scale cassava farmer's access to credit at 5%. The probability of accessing formal credit was positively and significantly influenced by being a member of cooperative society which by implication means that the more the farmers belong to cooperative society, the more the farmers' access to credit. This is in conformity with apriori expectations and as such farmers' access to credit increases by 4.971 when they are members of cooperative societies. The probability of small scale cassava farmer's access to credit also increased with an increase in farming experience at 5%. The odds in favor of accessing formal credit use increase by 2.13 for an increase in a year of farming experience of the farmers. This was in tandem with apriori expectations where an increase in farmers' experience increases their access to credit by 2.134. The reason behind this is that a farmer having more experience will have more tendencies towards using credit facility effectively and efficiently. This finding agrees with Atieno (2010) that experience was a significant variable to explain the participation in both formal and informal credit markets.

It was also evident from the results that farm size would increase access to formal credit. The odds in favor of access to formal credit use increases by a factor of 2.72 for households, which had large cultivated farm size than those who had lesser farm size. The positive relationship between farm size and access to credit is that farmers who cultivated larger size of land can utilize more capital for labor and other farm inputs and therefore, this will increase the demand for credit and as demand increases there will be a chance of access to credit. Mohiuddin and Write (2010) stated that both supply factor and demand factors explain women's limited access to institutional credit, although supply factors are more important. Extension contact was found to be an important variable in accessing formal credit use at 5% level. The odds favoring access to formal credit use increases by a factor of 2.67 for farmers who had access to extension services. This is consistent with the apriori expectation. Table 1 also indicated that the farmer's distance away from lending institutions had a negative and significant relationship with access to credit. This result with the apriori expectation since long distance to sources of credit is often considered as a

disincentive to borrowing.

Comparism of the farm income of farmers who had access to formal Credit and those who had no Access to formal Credit

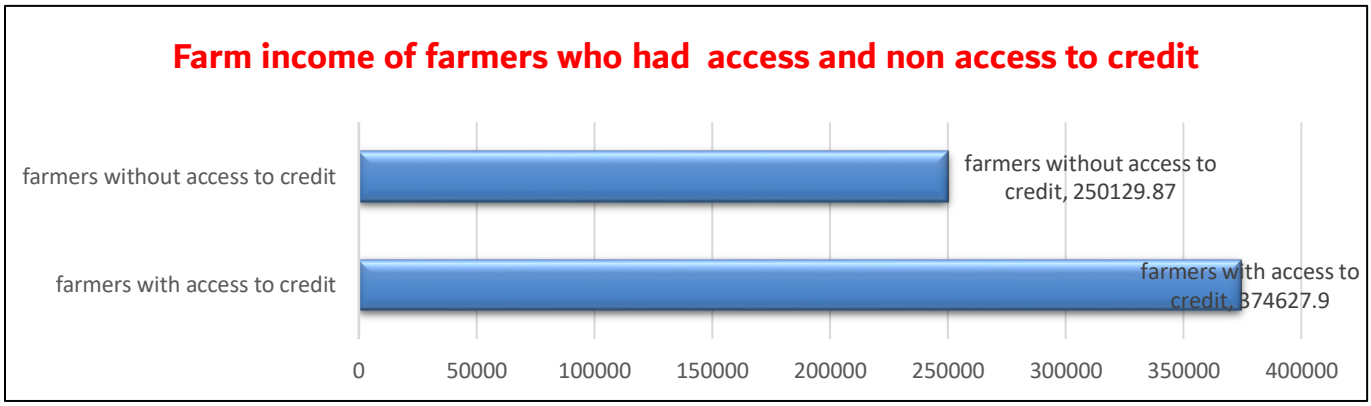
Table 2 depicts Independent t-test result showing comparison of farm income of farmers who had access to formal credit and those who has no access to formal credit.

Table 2: Independent t-test result showing Comparison of farm income of farmers who had access to formal credit and those who has no access to formal credit.

Parameter	Farmers access to credit	N	Mean Income (?)	Std. Deviation	Std. Error Mean
Farm Income	Farmers with credit access	120	374, 627.90	5166	297.283
	Farmers with non-credit access	120	250, 129.87	3379	249.548

The independent samples t-test compares the means between two unrelated groups in this case farmers with access to credit and farmers who had no access to credit. From the result, it was evident that farmers who had access to credit had better farm income (in Naira) compared to their counter parts in who had no access to credit which indicates that access to credit by farmers plays greater role in enhancing farmers income.

Figure 3: Distribution of Farm income of farmers who had access and non-access to credit



Test of hypothesis

Table 3: T-test for Equality of means (Levene's Test for Equality of Variances)

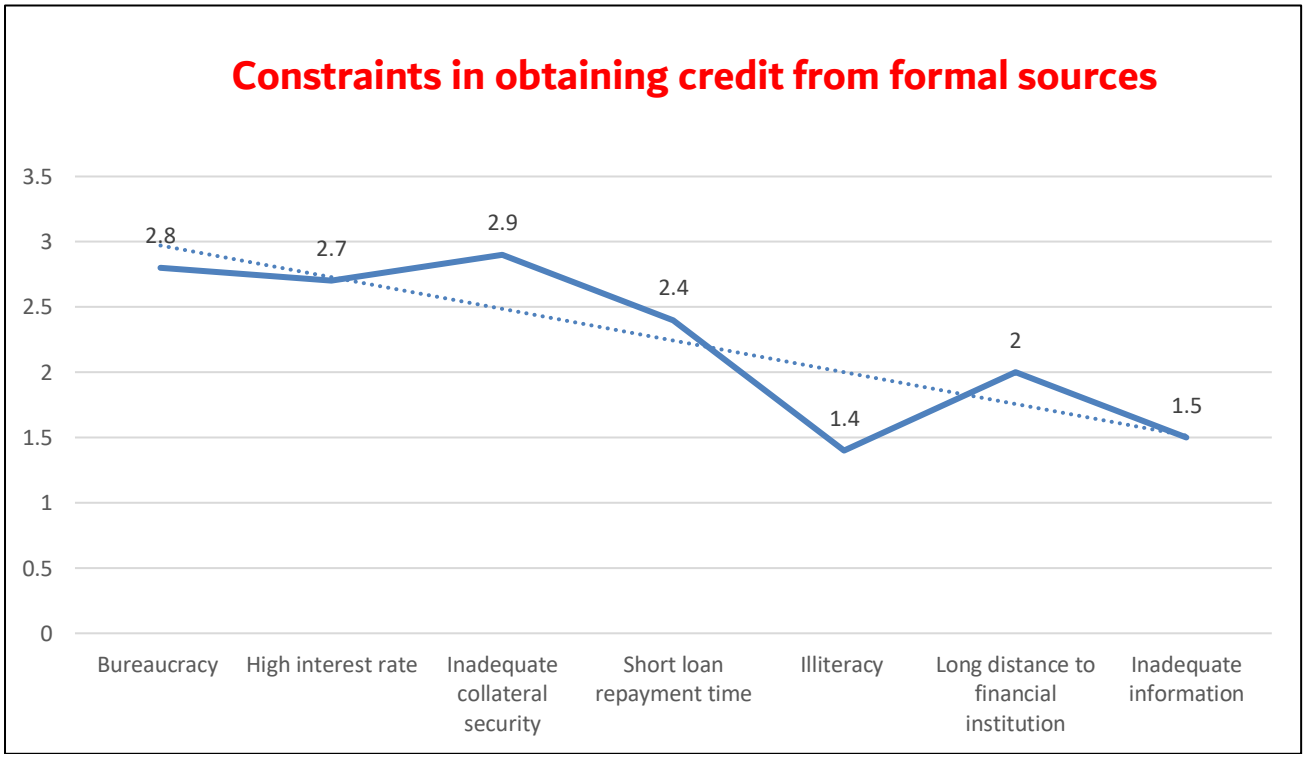
	Designation	Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Diff.	95% CI of the Diff	
									Lower	Upper
Farm Income	**Equal variances assumed**	1.880	0.00	-0.316	58	0.753	-124498.03	297.283	-904.527	658.138
	Equal variances not assumed			-0.317	50	0.752	-124498.03	249.548	-902.644	656.255

From the result, the group means are statistically not similar because the value in the Sig. parameter (2 tailed) column is less than 0.05. Results from Table 2 and figure 3 shows that there was significant difference (t = 0.316; P < 0.05) between the mean of farmers with credit access and (M =374, 627.90; SD = 5166) and farmers without credit access (M = 250, 129.87 ; SD = 3379). The result indicated significant differences. This is in conformity with apriori expectation which revealed a significant difference since it is perceived that farmers with credit access are better equipped farmers in terms of credit facility services, first hand market information and price fluctuations of production inputs and subsidy benefits to mention but a few. The null hypothesis would be rejected and the alternative hypothesis accepted.

Constraints to Farmer's Access to Formal and Informal Credit.

Small scale cassava farmers in the study area encountered some problems which hindered them from access to both formal and informal financial institutions to boost agricultural production. The problems encountered by farmers in obtaining credit from formal and informal financial institution are shown in figure 4 and 5 respectively.

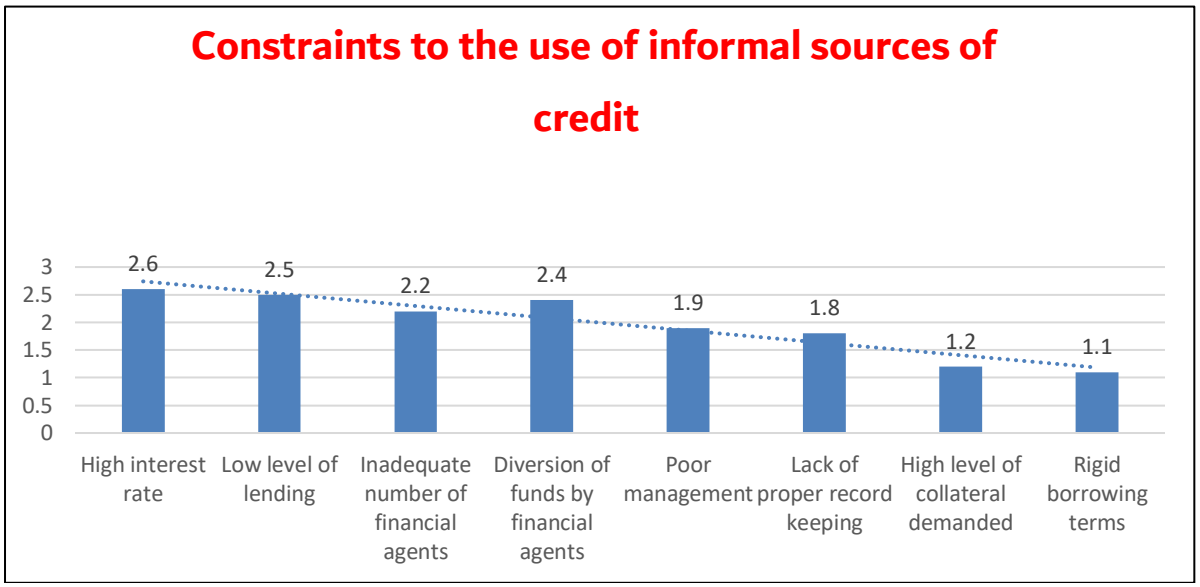
Figure 4: Mean score of respondents on constraints in obtaining credit from formal sources.



Source: Field Survey, 2022

From formal financial institution perspectives, these constraints include the following with means score: inadequate collateral security (2.9), bureaucracy (2.8), high interest rate (2.7), short loan repayment time (2.4) and long distance to financial institution (2.0), Findings on collateral security and interest rate is not surprising as it is a "tradition" with formal institutions. This agrees with Oboh and Kushwaha (2019) who observed that large loan from banks could not be accessed by most smallholders because of lack of collateral and high interest rate. The finding on bureaucracy agrees with Osumba and Omakjolu (2012) who reported that aside its complicated procedures, a lot of time is spent on sourcing credit from formal institutions.

Table 5: Distribution of respondents according to constraints to the use of informal sources of credit



Source: Computed from Field Survey, 2022.

From the informal perspective, the constraints with mean score include: high interest rate (2.6), low level of lending (2.5), diversion of funds by financial agents (2.4), and inadequate number of financial agents (2.2). Findings on high interest rate agree with Adams and Bartholomew (2010) who pointed out that the interest rate charged by money lenders are high, due to the opportunity costs of funds together with the lending risk which is high. Furthermore, the issue of low lending can be attributed to differences in the amount of credit demanded and the actual amount obtained by farmers from informal source of credit. This finding with Oni (2015), who reported that informal source of credit tends to be small in size, hence they can only cater for limited number of trusted client and the volume of lending is very small which may not meet the needs of the borrower.

CONCLUSION AND RECOMMENDATIONS

This study assessed the determinants of farmer's access to formal credit in Awka North Local Government Area of Anambra state. It can be concluded from the findings that farmers in the area had more access to informal source of credit. However, the Bank of Agriculture was identified as the major source of formal credit institution to farmers. Access to formal credit institutions was determined by cooperative society, experience, farm size, extension contact and distance to credit. Based on the findings, the following recommendations were made.

1. There should a deliberate policy to ensure that rural farmers have access to adequate credit facilities. This no doubt, will go a long way to boost the production capacity of the farmers, thereby increasing their farm income.
2. There should be government policy to ensure cassava farmers acquisition of agricultural credit should be put in place. Long term solutions should be provided by government all levels to solve the recurrent problem of high interest rate and absence of collateral as farmer's constraints to production credit.
3. Financial institutions such as Agricultural and microfinance banks, should be established in the rural areas.
4. The procedures for securing loans should also be streamlined in order to make it simple for the farmers.

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