



Determinants of Credit Access by Small Scale Farmers in Dekina Local Government Area of Kogi State, Nigeria

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Abstract

This study is on the determinants of credit access by small scale farmers in Dekina Local Government Area of Kogi State, Nigeria. The specific objectives are to; identify the major source of credit among the small scale farmers; estimate the determinants of farmers' access to formal credit; compare the farm income of farmers who have access to formal credit and those who have not and identify constraints to farmers' access to credit. A total of 120 respondents were selected through random sampling technique. Primary data obtained through questionnaire administration were analyzed using descriptive statistics, binary logistic regression model, t-test and mean score. Findings of this study revealed that the major source of credit to finance agricultural production was the informal credit source-money lenders (76.7%). Estimates of the binary logit regression model revealed a significant chi-squared value at 1%. The marginal effect of membership of cooperative society, experience, farm size, extension contact and distance to credit source significantly determined the probability of small scale farmers' access to credit at 5%. Expectedly, farmers who had access to formal credit recorded significant increase in farm income to those who had not. Constraints to farmers' access to formal credit source include inadequate collateral security (mean score=2.9), bureaucracy (mean score=2.8), high interest rate (mean score=2.7). That of informal credit source included high interest rate (mean score=2.6) and low level of lending (mean score=2.5). The study recommended deliberate policy to ensure that rural farmers have access to adequate credit facilities for improved agricultural production.

Keywords:

Income,
Formal,
Informal,
Logit

1. Introduction

Agricultural credit is indispensable for sustainable agricultural development to be achieved in any country of the world (Olalade and Olagunju, 2013). It is no doubt that Nigerian agriculture is essentially a function of weather variables and subsistence in nature. To this end, Ibitoye et al., (2016) posited that commercializing agriculture sector to meet the current food challenges require credit. This is as a result of the fact that most farming households hardly have savings to plough back into production due to their pattern of income and expenditures. Furthermore, limited access to credit facilities has been pointed out as a bane to the growth

of agricultural output (Ammani et al., 2011). Thus, the need arises for the provision of credit to the majority of Nigerian farmers.

According to Dayo et al., (2009), 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 either from formal, semi-formal or informal sources. Contribution by Lawal et al., (2009) 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, 2000; Adugna & Heidhues, 2000).

Previous empirical studies by Rahaman & Marcus, (2004), Abu et al., (2010), and Ugbajah, (2011) linked credit access to agricultural productivity in Nigeria. However, some empirical studies have also revealed cases of credit insufficiency among rural farmers in the country (Deaton 1997; Udry 1990; Zeller 2004; Idachaba 2006; Adebayo and Adeola). In a similar way, several studies have identified reasons for poor credit access among rural farmers in Nigeria. 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, 2007).

Despite the importance of credit to agricultural productivity, small scale farmers in rural areas such as Dekina Local Government Area still face some challenges in its acquisition which make most of them get discouraged and relent in their effort to contribute to the productivity of farm produce, hence, this study seeks to ascertain the determinants of access to formal and informal sources of agricultural credit by small scale farmers in Dekina Local Government Area. To address this general objective, the following specific objectives were set out: identify the major source of credit among the small scale farmers; estimate the determinants of farmers' access to formal credit; compare the farm income of farmers who had access to formal credit and those who had not; and identify constraints to farmers' access to credit.

2. Materials and methods

The study was carried out in Dekina Local Government Area of Kogi State. The area falls between latitude 6°.33' and 8°.44', and longitude 5°.2' and 7°.49' (Ibitoye et al. 2016). The study area has a land mass of 2,461 km² and a population of 260,312 heads at the 2006 census. The area is made up of 3 districts namely: Dekina, Okura and Braidu and share borders with Dekina local government to the North Omala and Ankpa to the South, Ofu to the East and Ajaokuta to the West. The inhabitants of this area are predominantly Igala with few migrant tribes like Bassa-Komo, Bassa-Nge, Hausa, Yoruba and the Igbo. Majority of the people are small scale farmers

growing crops such as yams, cassava, maize, guinea corn, millet, vegetables, and cowpea.

A three staged random sampling method was used in the selection of respondents. First, all the three districts in the Local Government Area were selected as targeted area. On second stage, two farming communities (a small group of farmer with similar characteristics) were randomly selected from each of the districts, making a total of six communities for the study. Finally, twenty (20) farmers were randomly selected from each of the communities giving rise to a total of one hundred and twenty (120) respondents for the study.

Questionnaire administration was used for the field survey. The questionnaire was validated by experts in the field of Agricultural Economics. Test rest method was used for reliability test. This was done by administering the questionnaire to the same group of respondents two times on different occasion so as to reduce error within a short time and also ensure consistency. Data gathered were subjected to correlation analysis to determine the degree of reliability. A positive of 0.75 was obtained, which confirm that the questionnaire is reliable for the study. Primary data obtained through the administration of structured were analysed using descriptive statistics, binary logit regression model, t-statistics and mean score from a three point Likert type of scale.

2.1 Model Specification

Binary Logit Regression Model

Determinants of small scale farmers' access to credit in the area was ascertained using binary logistic regression analysis. The dichotomous dependent variable defined as access to credit is assigned a value of 1 if the farmer had access to credit from formal institution within last two years or 0 if otherwise. The implicit logistic regression model used to analyze the determinants of access to formal credit is specified below:

$$\text{Log } \frac{P_i}{1 - P_i} = F(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, \mu)$$

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

$X_1 - X_8$ = Regression coefficients,

X_1 = Gender (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 (hectares)

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

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

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

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

T-Statistic

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

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{s_1^2}{N_1} + \frac{s_2^2}{N_2}}}$$

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 of farmers without access to credit

N = Sample size

Mean Score

Mean score from a three point Likert type of scale was used to identify constraints to farmers' 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 was calculated using the following formula:

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

Where: \bar{X} = means 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 item.

The mean response to each item was interpreted using the concept of real limits of numbers. The numerical value of the scale points (Response Modes) 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 1.50-2.49

Very Serious (VS) = 3 points with real limits of 2.50-3.49

3. Results and discussion

3.1 Major Source of Credit among Small Scale Farmers

The sources of obtaining credit facilities identified by the respondents are presented in Table 1.

It is evident from Table 1 that most of the small scale farmers in the study area depended on money lenders to fund their farming activities. The impressive percentage obtained in Bank of Agriculture under the formal source could be attributed to recent government intervention in the area of credit disbursement to farmers.

Pointedly, credit from non-institutional sources is more attractive, because there is little or no insistence on collateral security. Contrariwise, formal sources of credit 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 on collateral security. This agrees with the survey carried out by Ibitoye et al., (2012) who reported that credit from formal financial institutions meet only a small portion of the total credit demand of the agricultural sector. They found out that most farmers in Kogi state obtained credit from the informal financial sources mainly comprising loans from relatives, friends, rotational savings groups and other sources.

3.2 Determinants of Farmers Access to Credit

The model's χ^2 value indicates that all variables included in the model significantly influenced the probability of small scale farmers' access to credit in the area at 1% except for sex, age and land ownership. From the regression, coefficients of membership of cooperative society, experience, farm size, extension contact and distance to credit source significantly determined the probability of small scale farmers' access to credit at 5%.

The probability of accessing formal credit was positively and significantly influenced by being a member of cooperative society. This is due to the fact that cooperatives, especially agricultural cooperative societies provide agricultural credit (other than input credit) from their own source for members only. While for non-members except input credit no other type of credit was provided. The odds ratio favouring access to formal credit increases by a factor of 4.97 for small scale farmers who are members of a cooperative society.

The probability of formal farmers' access to credit also increased with an increase in farming experience at 5%. The odds in favour of accessing formal credit use increases by 2.13 for an increase in a year of farming experience of the farmer. 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 (2001), 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 use. The odds in favour of access to formal credit use increases by a factor of 2.72 for households, which had larger 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 labour and other farm inputs and therefore, this will increase the demand for credit and therefore, as demand increase there will be a chance of access to credit. Mohiuddin & Write (2000) stated that both supply 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 favouring 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. The result also indicated that the farmers' distance away from lending institutions had a negative and significant relationship with access to credit. This result agrees with the apriori expectation since long distance to sources of credit is often considered as a disincentive to borrowing.

3.3 Comparing the Farm Income of Farmers

The effect of formal credit on the farm income of small scale farmers in the area was determined using the T-test statistic model. The following data obtained were fitted into the model in order to compare the income of small farmers who had access to credit and those who had not:

Mean annual income of farmers with access to formal credit (X_2) = 374, 627.90

Mean annual income of farmers with no access to formal credit (X_1) = 350, 129.87

Income variance of small scale farmers with formal credit (S_2^2) = 5166

Income variance of small scale farmers with no access to formal credit (S_1^2) = 3379

Number of small scale farmers with access to formal credit (n_2) = 43

Number of small scale farmers with no access to formal credit (n_1) = 77

The t – test analysis on the effect access to credit on small scale farm income gave a t – calculated value of 2902.61. At 1% level of significance, t calculated value is greater than the tabulated, it is therefore inferred that at this level of

significance, small scale farmers with access to formal credit services had increased income level.

3.4 Constraints to Farmers' Access to Formal and Informal Credit

Small scale farmers in the 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 Table 3 and Table 4 respectively.

From formal financial institution perspectives, these constraints include the following with mean score: inadequate collateral security (2.9), involvement of bureaucracy (2.8), high interest rate (2.7), short loan repayment time (2.4) and long distance to financial institution (2.0). Finding on collateral security and interest rate is not surprising as it a "tradition" with formal institutions. This agrees with Oboh & Kushwaha (2009) who observed that large loan from banks could not be accessed by most smallholders because of lack of collateral and high interest rate.

From the informal perspective, the constraints with mean score include: high interest rate (2.6), low level of lending (2.5), division of funds by financial agents (2.4), and inadequate number of financial agents (2.2).

Finding on high interest rate agrees with Adams & Batholomew (2010) who pointed out that the interest rate charged by money lenders are high, due to the opportunity costs or 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 agrees with Oni, et al., (2011), who reported that informal source of credit tend 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.

Table 1. Distribution of Respondents According to Source of Credit N=120

Sources	Frequency*	Percentage
Formal		
Commercial banks	2	1.7
Bank of Agriculture	42	35.0
Micro finance banks	0	0
Government Grants	13	10.8
Cooperative societies	41	34.2
Informal		
Friends	37	30.8
Family Members	42	35.0
Money lenders	92	76.7

* = multiple responses

Table 2. Estimates of Logistic Regression

Variables	Marginal Effect	Z-Statistics	Prob. (Z).
Jender (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)	2.722	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

* = Coefficient significant @ 5% level

LR chi2 = 60.00; Prob> chi2 = 0.000; Pseudo R2 = 0.593

Table 3. Mean Score of Respondents on Constraints to Obtaining Credit from Formal Sources

Constraints	Mean Score
Involvement of Bureaucracy	2.8
High interest rate	2.7
Inadequate collateral security	2.9
Short loan repayment time	2.4
Illiteracy	1.4
Long distance to financial institution	2.0
Inadequate information	1.5

Source: Field Survey, 2016

Table 4. Distribution of Respondents According to Constraints to the Use of Informal Sources of Credit

Constraints	Mean score
High interest rate	2.6
Low level of lending	2.5
Inadequate number of financial agents	2.2
Diversion of funds by financial agents	2.4
Poor management	1.9
Lack of proper record keeping	1.8
High level of collateral demanded	1.2
Rigid borrowing terms	1.1

4. Conclusion and recommendations

This study assessed the determinants of credit access by small scale farmers in Dekina LGA, Kogi 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 credit was determined by cooperative society, experience, farm size, extension contact and distance to credit source. Findings from the study further revealed that farmers who had access to credit have more farm income than farmers who had not. This underscores the role of credit in agricultural production. Despite the role of informal credit source, farmers' access to this source of credit was constrained by high interest rate and low level of lending.

Based on the findings, the following recommendations are made:

There should be concerted efforts by government and other relevant authorities to put in place, policies that will 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

Cooperative membership was observed to positively determined credit access. Therefore, small farmers should be encouraged to for themselves into cooperative societies for easy access to credit from financial institutions.

The result also indicated that farmers who are closer to credit sources were likely to have more access to credit. Hence, financial institutions, such as agricultural and micro finance banks in rural areas should be strengthened.

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