



# Trends in Agricultural Economics

ISSN 1994-7933

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# Research Article

## Socioeconomic Determinants of Small-Scale Crop Farmers' Access to Loan in Benue State, Nigeria

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### Abstract

**Background and Objective:** Access to loan is one of the major challenges limiting small-scale farmers' investment in agriculture in Nigeria. Unfortunately, it is a vital input in the production process. Against this backdrop, the study assessed small-scale crop farmers' access to loan in Benue State, Nigeria. The main objective of this study was to determine if farmers' socio-economic factors significantly influence access to loan. **Materials and Methods:** Benue State has an agricultural development programme (ADP) with an administrative structure for effective extension services. It was divided into zones, blocks and cells. From the cells, 300 farmers were selected through multistage technique while questionnaire was used for data collection. The data were analyzed using Logit regression model. **Results:** The Likelihood Ratio and Chi-square values of 262.06 and 14.62, respectively indicated that the model fitted the dataset well because the overall model was statistically significant ( $p < 0.05$ ). Among the 8 variables predicted to influence access to loan, only ownership of bank account was statistically significant ( $p < 0.05$ ). However, other variables also influenced access to loan but not at 5% probability level. In terms of relationship, marital status, household size, age, years of farming experience and owning of bank account positively influenced access to loan while gender, educational status and farm size were inversely related to loan access. Out of the 300 farmers interviewed, only 106 (35.33%) had access to loan and the average loan requested (₦246650.94) was significantly ( $p < 0.01$ ) higher than what was granted (₦171933.96). **Conclusion:** Some of the crop farmers' socio-economic characteristics could be used to predict access to loan in Benue State, Nigeria.

**Key words:** Access to loan, crop farmers, loan requested, loan granted, logit model, small-scale, agricultural development program

**Citation:** Ajah, J. and S.D. Ameh, 2023. Socioeconomic determinants of small-scale crop farmers' access to loan in Benue State, Nigeria. Trends Agric. Econ., 16: 25-30.

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**Competing Interest:** The authors have declared that no competing interest exists.

**Data Availability:** All relevant data are within the paper and its supporting information files.

## INTRODUCTION

An agricultural loan is a financial service rendered to farmers for the purpose of production, processing, marketing and the like<sup>1</sup>. It includes institutional (formal) and non-institutional (informal) sources and the duration can be short, medium or long-term. The informal type of agricultural credit refers to those ones from local lenders, friends, relatives and the likes. The formal sources (in Nigeria) include microfinance banks, commercial banks and other specialized financial agencies that are accredited and authorised to provide loan to the farmers. Whether formal or informal, Chandio *et al.*<sup>2</sup> stated that credit is a capital injection that increases investment capacity of beneficiaries. In other words, it is the process of having control over the use of services, goods and money in the present in return for a promise to payback an agreed sum of money in the future<sup>3</sup>. It is a process that consists of granting financial resources for the purpose of carrying out socio-economic and cultural activities. In rural agricultural transformation, funding is very vital because it encourages farm modernisation and economic empowerment. It also creates and sustains the flow of farm inputs thus increasing efficiency in farm production process. The acquisition and utilization of credit for agricultural purposes according to Yomi-Alfred<sup>4</sup> promotes productivity and in turn improves food security. Chivandire<sup>5</sup> stated that one of the most crucial factors constraining smallholder farmers in developing countries is limited access to credit especially from the formal lending institutions. A report by the Food and Agriculture Organization (FAO) and African Development Bank also indicated that the agricultural sector in West Africa presented a combination of old and emerging constraints among which is the difficulty of accessing loans for agricultural production by farmers<sup>6</sup>.

Although there are medium and large-scale farms that are scattered all over the country, small-scale farmers are predominant. The small-scale farmers control, to a very large extent, the agricultural sector and can be regarded as the backbone of Nigeria food security. However, their counterparts who are operating medium and large-scale farms with recognised organizational structures and fixed assets have more chances of getting loans with their assets as collaterals. On the contrary, the small-scale farmers do not have assets to present as collaterals<sup>7</sup> hence, their socio-economic characteristics are thoroughly scrutinized before they are granted loans from formal and informal sources. Another factor affecting farmers' access to loan is that most lending institutions are rarely located in the rural communities where most of the farmers live. That is, proximity

or distance between lenders and borrowers (farmers) is a challenge<sup>8</sup>. Because of poor access to loan, small-scale farmers are forced to produce less<sup>9,10</sup>. This calls for serious attention because the decline in agricultural productivity portrays a serious danger to food security in Nigeria.

Similar studies have been conducted to verify if the socio-economic characteristics of small-scale farmers influence their access to loans. For example, in their study, Taremwa *et al.*<sup>11</sup> identified and assessed the determinants of smallholder rice and maize farmers' access to agricultural credit in Rwanda. The data were analysed using a binary logistic regression model. The results indicated that some of the factors that influenced access to credit included saving of money in commercial banks, owning a size of land that is less than 1 ha (0-0.1 ha) and knowledge of the repayment terms of the loan. Julien *et al.*<sup>12</sup> assessed the factors influencing access to credit for vegetable farmers in the Gulf Prefecture of Togo using a Logit regression model. The findings indicated that beyond structural constraints, the socio-economic attributes of the market gardeners played significant roles in accessing credit. Also, Denkyirah *et al.*<sup>13</sup> analysed the factors influencing smallholder rice farmers' access to credit in the Upper East Region of Ghana using Probit model. The findings indicated that the age of farmers, marital status, farm income, extension visits to farmers, membership of farmer-based organisations and farm record keeping were the variables that significantly influenced access to credit. Again, the determinants of rural farmers' access to credit in Oyo State was analysed using a binomial Logit regression model<sup>14</sup>. The findings showed that marital status, gender, interest rates and provision of guarantor significantly influenced rural farmers' access to credit. The implication of the findings is that socio-economic characteristics of the farmers could be used to predict access to loans. Other studies<sup>15-18</sup> also attested to the fact that socio-economic characteristics influence farmers' access to credit in different parts of the world.

The above references suggested the fact that there are many studies on the effect of socio-economic factors on farmers' access to loan in different parts of the world including Nigeria. In this study, apart from ownership of bank accounts, the variables included and the method of analysis are not new. However, because socio-economic characteristics are human attributes that are dynamic and difficult to predict, it needs research updates in different locations. Hardly you will find such current studies in Benue State hence, the need for the study. Again, until a new approach that guarantees access to credit by small-scale farmers who do not have collaterals is developed, research on the effect of socio-economic or demographic characteristics on loan access will linger. Hence,

the specific objectives of the study are: (1) Compare the loan requested and granted to the small-scale crop farmers, (2) Analyse socio-economic factors that significantly affect small-scale farmers' access to loans, (3) Identify small-scale farmers sources of loan and (4) Determine the farmers' challenges in accessing loan in Benue State, Nigeria.

## MATERIALS AND METHODS

**Study area:** The study was conducted in Benue State by December, 2022 when the crop farmers were harvesting their produce from the farm. Benue State lies in the North-Central Nigeria between longitude 6°35'E and 8°10'E of the Greenwich Meridian and latitude 6°30'N and 8°10'N of the Equator at an elevation of 97 m above sea level in Southern Guinea Savannah Agro-ecological Zone. Benue State shares boundaries with Enugu State to the Southeast, Cross-River State to the South, Nasarawa State to the North, Taraba State to the East and Kogi State to the West. It also shares a common boundary with the Republic of Cameroon in the South-Eastern part of Nigeria. The population is predominantly agrarian with most of them actively involved in the farming of rice, yam, beniseed, sorghum, melon, cassava, cowpea and maize<sup>19</sup>.

**Population and sample size selection:** The population for the study includes all small-scale crop farmers in Benue State. For easy of agricultural extension services, the state was divided into three Agricultural Zones-Northern, Central and Eastern Zones with headquarters at Gboko, Otukpo and Adikpo, respectively. With the help of the Zonal Agricultural Officers, a multi-stage sampling technique was used for sample selection. In the 1st stage, the entire three agricultural zones were selected purposively. In the 2nd stage, four extension blocks were purposively selected from each zone while, in 3rd stage 5 cells were purposively selected from each of the twelve agricultural extension blocks. Finally, in the 4th stage, 5 farmers were randomly selected from each of the 60 cells giving a total of 300 small-scale farmers (3 zones × 4 blocks × 5 cells × 5 farmers = 300). The blocks and cells were purposively selected because of security challenges in the state.

**Methods of data collection:** Both primary and secondary data were collected for the study. The data were collected using a semi-structured questionnaire. The Benue State agricultural development programme (ADP) staff were used as enumerators because of language and security challenges. A

total of 300 questionnaires were administered across the three zones in the state. The researcher trained the enumerators on the objectives of the study and mobilized them for the job.

### Statement of hypothesis:

- H01 :** The socio-economic characteristics of farmers do not significantly affect access to loan  
**H02 :** There is no significant difference in the amount of loan requested by the farmers and the amount granted

### Statistical analysis

**Model specification:** In line with Saqib *et al.*<sup>20</sup> a logistic regression model was used to determine factors influencing crop farmers' access to loan. The model is similar to a linear regression model but used where the dependent variable is dichotomous. Let  $Y_i$  be a random variable (dichotomous) then,  $Y_i$  takes the value 0 or 1. Here, 0 denotes non-access to loan by the small-scale crop farmers while 1 denotes access to loan. The logistic model indicates that the probability of an event ( $Y = 1$ ) given the value  $X_1, \dots, X_n$  is:

$$P(Y) = \frac{1}{1 + \exp(-(\alpha - \sum \beta_i X_i))} \quad (1)$$

Taking logarithm of both sides of the equation, we have:

$$\text{Logit } P(Y) = \alpha + \sum \beta_i X_i \quad (2)$$

Where:

- $Y_i = 1$  if respondent has access to a loan for crop production  
 $Y_i = 0$  if respondent did not have access to a loan for crop production  
 $B_i$  = Coefficients for the independent variables studied  
 $\alpha$  = Constant term  
 $X_i$  = Vector of independent variables

## RESULTS AND DISCUSSION

**Socio-demographic variables influencing farmers' access to loans in Benue state:** The Likelihood Ratio (262.06) and Chi-square value (14.62) indicated that the model fitted the dataset well because the overall model is statistically significant ( $p < 0.05$ ) (Table 1). From the model's summary, a Nagelkerke R square of 7.9% implied that 7.9% of the variance in accessing a loan was explained by all variables studied. Among the variables predicted to influence small-scale

Table 1: Binary logistics result, showing socioeconomic determinants of loan access

Variable/measurement	B	SE	Wald	Significant	Exp(B)
Gender (1 if male, 0 otherwise)	-0.359	0.338	1.128	0.288	0.698
Marital status (1 if married, 0 otherwise)	0.450	0.384	1.371	0.242	1.568
Household size (No. of persons per household)	0.028	0.030	0.862	0.353	1.029
Age (years)	0.006	0.020	0.090	0.765	1.006
Years of farming experience (years)	0.024	0.019	1.557	0.212	1.025
Educational status (1 if formal education, 0 if no formal education)	-0.151	0.407	0.137	0.711	0.860
Farm size (hectare)	-0.010	0.035	0.079	0.778	0.990
Opening bank account (1 if yes, 0 otherwise)	0.701	0.329	4.541	0.033	2.016
Constant	-2.904	0.797	13.293	0.000	0.055
Nagelkerke's R <sup>2</sup>	7.9%				
Chi square	14.62				
-2 log Likelihood	262.06				

farmers' access to loans, ownership of a bank account had a positive and significant ( $p < 0.05$ ) effect on the likelihood of accessing a loan. Ownership of a bank account increased the odds of accessing a loan by a factor of 2.016. On the other hand, gender, marital status, household size, years of farming experience, educational status, farm size and age did not significantly ( $p > 0.05$ ) affect farmers' access to loans. This disagrees with the findings of Oludayo and Mbina<sup>21</sup> which showed that gender, marital status, household size, farming experience and level of education positively affected farmers' access to loans.

#### Differences between amount of loan requested and granted to farmers in Benue State:

An independent t-test was conducted to compare the amount of loan requested and granted to the farmers. There was a significant difference in the mean loan requested (mean = ₦246650.94, Sd = 273823.65) and granted (mean = ₦171933.96, Sd = 149329.560) to the farmers. This suggests that there was a significant reduction in the amount of loan granted to farmers when requests were made. This difference amounts to ₦74,716.98 (30.2%) when computed. This finding was corroborated by Anigbogu *et al.*<sup>22</sup>, who showed that a significant difference existed between the amount of loan applied for and disbursed by microfinance banks to cooperative farmers. There is, therefore, the need to bridge the gap between the amount of loan applied for and granted to farmer in order to allow for continuous productivity and improvement in the farmers' living standard. Furthermore, this also justified the finding that small-scale farmers were granted lower amounts of loan than they applied for<sup>23</sup>.

**Sources of Loan by the Farmers in Benue:** All the possible sources of loan as shown in Table 2 were explored by the farmers in Benue State but the dominant source of loan was cooperative societies (9.0%). This supports the finding of Abraham<sup>24</sup> which showed that access to financial services by using formal financial institutions and farmer savings clubs

benefited vulnerable farmers especially women. The percentage of farmers that accessed loan through microfinance and commercial banks were 6.7% and 0.3%, respectively. Majority (81.6%) of the farmers did not respond to this question probably because of the frustrations they encountered over the years in accessing loan from these sources.

#### Farmers' challenges in accessing loan in Benue State:

The major challenges encountered by farmers in Benue State is long loan procedure (38.7%) and inadequate loan information (15.0%), lack of collateral (14.6%) and high interest rate (12.3%) as shown in Table 3. This finding was similar to that of Bigsten *et al.*<sup>25</sup> and Asogwa *et al.*<sup>26</sup>, who observed that a lack of collateral requirements hindered the farmers from accessing loans. While high-interest rate heightens farmers' fear of uncertainty, provision of collateral further discourages them from applying for a loan. This implies that the solutions to the challenges in loan acquisition in Benue State involves non-request for collateral by passing the loan through cooperative societies, provision of adequate loan information and simplified loan procedure. Most farmers lack the patience and time required for the bureaucratic procedures involved in loan application. Hence, adjusting the lending terms, conditions and making micro finance banks more responsive to the needs of farmers in rural areas will greatly enhance access to loan<sup>27</sup>.

#### Farmers' ownership and types of bank account in Benue State:

About 50% of the farmers in Benue State owned bank accounts (Table 4). Of this number, 40.7% had savings account while (8.6%) had current accounts. Half (50.0%) did not respond to the question probability because they did not have any form of account. The result showed a lesser ownership of bank account by farmers in Benue State. Since ownership of account was a significant factor in accessing loan, it therefore, showed that only farmers who had bank accounts accessed loan in the state.

Table 2: Sources of loan by the farmers in Benue

Sources of loan	Frequency	Percentage
Cooperative societies	27	9.0
Microfinance banks	20	6.7
Commercial banks	1	0.3
Religious organizations	2	0.7
Family and friends	5	1.7
No response	245	81.6
Total	300	100.0

Table 3: Farmers challenges in accessing loan in Benue State

Challenges	Frequency	Percentage
Lack of collateral	44	14.6
Long loan procedure	116	38.7
Lack of confidence	35	11.7
High interest rate	37	12.3
Inadequate loan information	45	15.0
No response	23	7.7
Total	300	100.0

Table 4: Farmers' Ownership and types of bank account in Benue State

Loan status	Frequency	Percentage
<b>Bank account ownership</b>		
I have bank account	150	50.0
I do not have bank account	150	50.0
<b>Type of account</b>		
Savings account	122	40.7
Current account	26	8.6
Others	2	0.7
No response	150	50.0
Total	300	100.0

## CONCLUSION

In Nigeria, evidence from literature revealed that one of the challenges influencing farmers' productivity, especially small-scale farmers, was poor access to loan. In view of this, the study assessed small-scale crop farmers' access to loan in Benue State. The finding suggested that some socio-economic characteristics of the farmers could be used to predict access to loan in the study area. The paper, therefore, recommends that similar studies should be conducted in other areas since farmers' behaviour and socio-economic attributes are dynamic in nature.

## SIGNIFICANCE STATEMENT

The aim of the study is to determine if the socio-economic characteristics of small-scale crop farmers in Benue State, Nigeria significantly influenced their access to loan. Findings showed that, among the variables (gender, educational status, farm size, marital status, household size, age, years of farming experience and ownership of bank account) predicted to influence access to loan, only ownership of bank account was statistically significant ( $p < 0.05$ ). However, it should be noted

that other variables also influenced the farmers' access to loan but not at 5% probability level. The paper concluded that access to loan by the small-scale farmers was poor because the average loan requested was significantly higher than what was granted. The negative implication of this is that there may not be expansion in the farmers' production possibility boundaries since loan is needed to purchase or acquire other inputs in the production process.

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