

## FACTORS AFFECTING CASSAVA FARMERS' DEMAND AND PARTICIPATION IN CREDIT MARKET: STUDY OF BENDE LOCAL GOVERNMENT AREA OF ABIA STATE, NIGERIA

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### Abstract

*The study was conducted to ascertain the factors affecting participation of cassava farmers in credit market (study of Bende local government area) Abia State. The broad objective was to determine factors that affect cassava farmer's participation in credit market. The data were collected from cassava farmers of the sampled area through a well-structured questionnaire. In this study, the Multinomial logit model was used to determine the factors that affect cassava farmer's participation in credit market, be it formal, informal, or both institutions. Socio-economic and enterprise characteristics such as sex, age, household size, training and cooperative membership were found to be significant factors that affect farmers demand and participation in credit market (i.e informal, formal and both informal and formal sources in the study area). Farmers should be encouraged to participate in both credit markets via easy access to credits from formal and informal lenders which will significantly improve productivity and welfare of cassava farmers.*

**Key words:** cassava, demand, credit market, participation, Nigeria

### INTRODUCTION

Credit is described as an input used in production as well as a facilitator of the efficiency of other production input. The realization of this, have necessitated government efforts at providing credit facilities through financial intermediaries like commercial banks to ensure access to credit by farm and non-farm small holder.

In an economy whose credit market is characterized by segmentation and with borrowers' inability to keep loaning terms and agreement may lead to credit rationing. Also, access to financial services by smallholders is normally seen as one of the constraints limiting their benefit from credit facilities. However, in most cases the access problem, especially among formal financial institutions is one created by the institutions mainly through their lending policies. This is displayed in the form of prescribed minimum loan amounts, complicated application procedures and restrictions on credit for specific purposes [7]. Credit enhances productivity and promotes standard of living

by breaking vicious cycle of poverty of small scale farmers. [2], described agricultural credit as the process of obtaining control over the use of money, goods and services in the present in exchange for a promise to repay at a future date. The crucial role of credit in cassava production can also be appraised from the perspective of the quantity of problems emanating from the lack of it. In modern farming business in Nigeria, provision of agricultural credit is not enough but efficient use of such credit has become an important factor in order to increase productivity. Credit has also been discovered to be a major factor on the intensification of both large and small scale farming [5]. The absence of rural banks or their unwillingness to meet credit need of rural farmers largely account for the wide influence of informal lending institutions on agricultural production in the rural areas. [1] reported that non-institutional creditors accounts for 70% of the total credits received by Nigerian farming population. However, with the present situation in Nigeria, these sources could hardly meet the increasing demand for credit by farmers. Also according

to [8], micro credits are used for two purposes, which are for investment and generation of wealth or for consumption smoothing. In other words credit for small and medium enterprise (SMEs) can be put into production use or consumption use. For the purpose of this work, credit for productive use which appears to be more documented will be given more attention.

The emergence of demand for short-term credit especially among traders and farmers will most likely lead to the development of an informal unit to meet that demand, [3]. In other words, the inability of the formal credit sources to satisfy existing credit demand gave greater prominence to informal institutions that could meet the demand of short term credit that small and micro entrepreneurs usually need to enhance their production efficiencies. Interestingly, most of the small and micro entrepreneurs and especially the agro-allied ones are rural-based with low level of education and poor access to useful information. This information has caused increased poverty level among the rural poor, instead of sustainable development for this vulnerable group of people. The need therefore to investigate the institutions lending policy, access to credit facilities and how it affects significantly or otherwise, the production efficiencies of small and micro enterprise becomes pertinent. Again one needs to wonder why some participants prefer one credit source to another (i.e. formal or informal). The [4] reports that in Nigeria, the formal financial system provides services to about 35% of the economically active population while the remaining 65% are excluded from access and often served by the informal financial sector, through the Non-Governmental Organization (NGO), micro finance institution, money lenders, friends, relatives and credit unions. This level of service disparity between the two sources of credit to meet credit needs of small and medium enterprise may have underlined the importance of need oriented financial system for rural development and by implication economic development. This work is designed to investigate the factors that affect the demand for credit in the credit market and the

lending policies of formal and informal credit institutions, in a view to understanding its link with credit access and productivity of small and medium enterprise, specified in this study as cassava production in Bende Local Government.

The aim of the research presented in this article is to evaluate the factors affecting the demand and participation by cassava farmers in credit market. The study looked at how this credit markets can affect the demand and participation of cassava farmers either in a positive or negative way.

## MATERIALS AND METHODS

**Study Area.** The study was conducted in Bende Local Government Area in Abia State; Nigeria. Bende is under Ohafia agricultural zone which is one of the three agricultural zones in Abia State. Bende local Government is made up five communities - Uzuakoli, Mkpa, Igbere, Akoli and Lodu. They are predominantly farmers.

**Sampling procedures and techniques.** Simple random technique was used in carrying out the research work. Particularly, data was collected from respondent in five communities viz Uzuakoli, Mkpa, Igbere, Akoli and Lodu through a random sampling process. The study employed multi-stage sampling techniques. In stage one; it involves purposive selection of Ohafia Agricultural zone in Abia State, in which we have Arochukwu Local Government, Bende Local Government, and Ohafia Local Government. Bende Local Government area was chosen for the study, because of its predominance of cassava farmers in the area. The second stage involved a random selection of 100 cassava farmers, which was gotten from 5 communities that make-up Bende Local Government Area. (i.e. 20 farmers from each community) Uzuakoli (20), Lodu (20), Mkpa (20), Igbere (20) and Akoli (20).

**Data Collection and Procedures.** The data for this research study were obtained mainly from primary source through field survey using a well-structured questionnaire based on the objective of the study. Data were collected from each of the farmers in each of the five

communities based on their socio-economic characteristics and their enterprise characteristics.

**Model specification.** Multinomial logit model are used for model relationships between a polychotomous response variable and a set of variables. This model is based on the random utility model [6]. The utility to a farmer is a linear function of factors characterized into socio-economic characteristics, enterprise characteristics, credit status and institutional factors. The essence is to ascertain the relative choice between formal and informal institutions or both by farmers.

Thus,  $U$  (alternative 0)  $= \beta_j X_0 + e^j$ ,  $U$  (alternative 1)  $= \beta_j X_0 + e^j$ ,  $U$  (alternative 2)  $= \beta_j X_0 + e^k$ .

The probability of a participant choosing an alternative is capital to the probability that the utility of that particular alternative is greater than the choice set that is given (0 dependent variable) = choice 1, if  $U(\text{alternative 1}) > U(\text{alternative 2})$ ,

Where  $1 \neq 2$ , then  $B_1 X_1 + e_j > B_2 X_2 + e_k$ .

$P_{0i} = a_0 + \beta_0 X^i$ ,  $P_{1i} = a_1 + \beta_1 X^i$ ,  $P_{2i} = a_2 + \beta_2 X^i$ ,  $P_{3i} = a_3 + \beta_3 X^i$ , Where  $P_0$ ,  $P_1$ ,  $P_2$  and  $P_3$  = probability of no credit, formal credit, informal credit or both formal and informal credit respectively. Thus,  $P_{0i}$  = Probability that individual  $i$  will demand no credit,  $P_{1i}$  = Probability that individual  $i$  will demand from formal sources,  $P_{2i}$  = Probability that individual  $i$  will demand from informal sources,  $P_{3i}$  = Probability that individual  $i$  will demand from both formal and informal sources,  $X_i$  = Value of  $X$  for the  $i$ th individual (independent variables),  $a$  = Intercept,  $\beta$  = Coefficient. In addition the, objective of using the multinomial model will be to test the relationship between the probabilities of determining factors and to use the estimated coefficient to generate the probabilities of the respondents falling into one of the credit markets.

The variables which affect farmer's participation are determined quantitatively in a model implicitly specified as the follows:

$$Y = (X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11}, X_{12}, X_{13}, X_{14}, X_{15}, X_{16}, e_1) \dots (1)$$

Where  $Y$  = credit source measured as a polychotomous variable with values reflecting

farmers credit status. It takes the values of 0, 1, 2 and 3 for cases where a farmer did not obtain credit at all; obtain credit from formal institution, informal institutions, or both formal and informal institutions respectively.

- $X_1$  = Sex (male = 1, female = 0)
- $X_2$  = Educational level (above primary school = 1, otherwise = 0)
- $X_3$  = Household size (numbers)
- $X_4$  = Farming experience (years)
- $X_5$  = House hold asset (₦)
- $X_6$  = Farm size (hectares)
- $X_7$  = Distance from lending institution to farm (km)
- $X_8$  = Output (₦)
- $X_9$  = Outstanding loans (Yes = 1, No = 0)
- $X_{10}$  = Deprived of loans (Yes = 1, No = 0)
- $X_{11}$  = Membership of cooperative association (Yes = 1, No = 0)
- $X_{12}$  = Cassava training (Yes = 1, No = 0)
- $X_{13}$  = Easier formalities (Yes = 1, No = 0)
- $X_{14}$  = Flexible payback (Yes = 1, No = 0)
- $X_{15}$  = Interest rate charged (Yes = 1, No = 0)
- $X_{16}$  = More favorable terms (Yes = 1, No = 0)
- $e_1$  = error term

## RESULTS AND DISCUSSIONS

The result of the multi logit model is given in Table 1. The coefficients of the probabilities of the informal and formal were estimated with respect to no credit demand. A positive coefficient shows that the probability of a respondent falling in the numerator category is greater than the probability of falling in the denominator category. A negative coefficient gives the opposite.

**Formal Sources.** In the model, four variables were found to have significantly affected the demand for formal credit. These include farm size, outstanding loan, training and co-operative.

Farm size was significant at 10% and positively related. The positive sign means larger farm size, attracts higher demand for credit in formal sources. It further means that farm size is statistically affecting credit demand.

Outstanding loan was statistically significant at 1%. This reveals that the outstanding loan of the respondent significantly affects the credit demand from formal sources. It further shows by its positive sign that there is higher probability of demanding for credit from formal sources by farmers with outstanding

loans than not to demand at all, notwithstanding their inability to clear the old debt, because they belong to cooperatives, which creates easy access to credit.

Table 1. Multinomial logit model result

Independent Variables	Dependent Variable		
	$\frac{P1}{P0}$	$\frac{P2}{P0}$	$\frac{P3}{P0}$
Constant	877.957 (1.490)***	-16.232 (1.928)	-1.195 (2.736)
Sex	-0.884 (0.472)	-1.101 (0.505)	2.190 (0.626)**
Age	0.129 (0.020)	0.175 (0.024)	-1.287 (1.313)
Education	0.066 (0.023)	0.20 (0.25)	0.121 (0.067)
Household size	0.548 (0.135)	1.516 (0.159)	-12.821 (29.819)***
Experience	0.231 (0.060)	0.415 (0.069)	0.188 (0.066)
Household asset	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Farm size	1.723 (0.303)*	-1.124 (0.311)	0.053 (0.030)
Distance	-0.494 (0.156)	-1.168 (0.198)	0.644 (0.215)
Outstanding loan	4.009 (0.665)***	2.411 (0.624)**	68.097 (100.923)***
Output	0.000 (0.000)	0.000 (0.000)	1.542 (0.183)
Training	20.489 (10.000)***	3.664 (0.788)***	1.487 (0.715)
Cooperative	1.652 (0.421)*	1.004 (0.489)	1.248 (0.570)
Easier formalities	0.273 (0.500)	1.067 (0.464)	-638.757 (566.754)***

Source: Field Survey (2013)

Note: \*\*\*, \*\* and \* significant at 1%, 5% and 10% respectively.

Log likelihood: 608.555 LR Chi2 = 1152.962 df : 39

Training was positively related, and statistically significant at 1%. The implication is that respondents who had one or more trainings will most likely demand for credit. It further reveals that training is one of the determining factors of credit in formal sources.

Cooperative significantly affects the demand for credit at 10% and positively. This implies that the possibility of demanding for credit is easier for those that belong to cooperatives. It is a priori expected since membership of cooperative makes for easy access to credit especially from formal sources.

**Informal Sources.** From the result in the model, for demand from informal source, only two variables were statistically significant at 5% and 1% levels respectively. They are outstanding loans and training.

Outstanding loan was significant at 5% and positively related. The implication is that outstanding loan affects the demand for credit from informal sources. The positive sign indicates that a farmer with outstanding loan has higher probability of demanding for credit from informal sources, than not to demand at all.

Training was statistically significant at 1% and positively related in the informal sources. This implies that training is the determining factor that affects farmers demand for credit in the informal source. The positive sign implies that farmers, who had one form of training, will most, likely demand for credit.

**Both Formal and Informal Sources.** In the model, four variables were found to have significantly affected credit demand in both formal and informal sources. These include sex, household size, outstanding loan and easier formalities.

Sex was statistically significant at 1%. The implication is that sex significantly affects the respondents demand for credit in both formal and informal sources. The negative sign of the coefficient reveals that the probability for male demand for credit is low, than the female.

Household size was significant at 10% and positively related. This implies that household size of the respondent in both formal and informal sources affect the demand for credit. The positive coefficient shows that respondents with larger household size have greater probability for credit demand in both sources.

Outstanding loan was statistically significant at 1%. This reveals that the outstanding loan of the respondent significantly affects the credit demand from both formal and informal sources. It further shows by its positive sign that there is higher probability of demanding credit from both formal and informal sources by farmers. Institutional factor like easier to get a credit was statistically significant in all three markets.

Easier formalities were found to be significant at 1% and negatively affect credit demand and participation in both formal and informal sources. The implication is that easier formalities from lending sources is a

determining factor in obtaining credit from both formal and informal sources.

In summary, three categories of credit markets were identified. These include the formal institution, informal institution and both formal and informal institutions. The coefficient of the probabilities of the formal, informal and both formal and informal institutions were estimated with respect to no credit demand (i.e. the probability that the farmer did not demand at all).

## CONCLUSIONS

According to the data analyzed, sex, age, household size, outstanding loan, training and cooperative membership were found to be significant factors that affect farmers demand for credit, from informal, formal and both informal and formal sources in the study area. The positive sign associated with them indicates that, as they increase, there probability of demand for credit will also increase, vice versa.

Against this background and from the results of the research, the following policy recommendations were made:

Credit institutions should give due consideration to policy conditions as more favorable terms and interest rate during policy formulation in such a way that it will be easier to get a loan while maintaining mutual benefit between farmers and the institutions.

Farmers should be encouraged to create social capital through their membership of association relevant to their businesses. The business progress of one member could encourage others to participate and thus improve productivity and welfare.

## REFERENCES

- [1]Abe, S.T., 1982, Nigerian farmers and their finance problems. Bullion Magazine, 7: 4.
- [2]Adegeye, A.J., Dittoh, J.S., 1985, Essentials of Agricultural Economics. Impact Publishers Economics Nigeria, Limited, Ibadan.
- [3]Atieno, R., 2001, Formal and Informal institutions lending policies and access to credit by Small-Scale enterprises in Kenya: an empirical assessment, AERC Research paper 111, African economic Research.
- [4]Central Bank of Nigeria(CBN), (2005).

Microfinance Policy, Regulatory and Supervisory framework for Nigeria, web-posted May, 2007.

[5]Henri-Ukoha A., 2011, Determinants of Loan Acquisition from the Financial Institution by Small-Scale Farmers in Ohafia Agricultural Zone of Abia State, South East, Nigeria, Journal of Development and Agricultural Economics, 3(2), 69-74.

[6]Olouch-Kosura, W.A., Marenny, P., Nzuma, M.J., 2001, Soil Fertility and Management in Maize-based production systems in Kenya: Current options and future strategies. Seventh Eastern and Southern African Regional Maize Conference 11<sup>th</sup> – 15<sup>th</sup> Febuary, 2001 pp.350-355.

[7]Schmidt, R.H., Kropp, E., 1987, Rural Finance Guiding Principle (GTC Eschborn)

[8]Semboja, J., 2004, Rural Credit and Poverty Reduction, paper presented at the 3<sup>rd</sup> Annual Conference on Micro finance held at AIIC Arusha.

