

# Determinants of Institutional Credit Demand by Small Scale Food Crop Farmers in Owerri Agricultural Zone of Imo State, South East Nigeria

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## Abstract

The study was designed to investigate the determinants of institutional credit demand by small scale food crop farmers in Owerri Agricultural Zone. A total of one hundred and twenty food crops farmers were selected using multistage random sampling technique. Data were collected from the selected farmers with well structured and validated questionnaire. Data were analysed using descriptive statistics and ordinary least square regression model. Results showed that loan transaction cost, interest on loan, age, household size, educational level, farming experience, farm size, collateral and farm income were important factors that influenced the demand for credit in the study area. It was concluded that farmers in the area would demand for more credit facilities if the interest rate charges, loan transaction costs and other obstacles that delay loan processing and disbursement to the farmers were reduced. Government should ensure that institutional credits are disbursed to farmers at a minimal interest rate in order to enhance food crop production in the area.

**Keywords:** Determinants, Credit demand and Small scale farmers.

## Introduction

Agriculture is the economic mainstay of majority of households in Nigeria (Udoh, 2000) and is a significant sector in Nigeria's economy (Amaza, 2000). The important benefit of the agricultural sector to Nigeria's economy include the provision of food, contribution to gross domestic product, provision of employment, provision of raw materials for agro-allied industries and generation of foreign earnings.

However, the sector is characterized by a multitude of small scale farmers scattered over wide expanse of land area with small holdings ranging from 0.05 to 3.0 hectares per farmland (Ogundari and Ojo, 2007). These farmers have always played dominant roles in agricultural productivity in Nigeria (Rahji and Fakayode, 2009) but their productivity and growth are hindered by limited access to credit facilities (Odoemenem and Obinne, 2010). In Nigeria, empirical evidence has established a positive link between the declining agricultural productivity and limited credit facilities (Essien, 2009; Nwankwo, 1983; Nwaru, 2004). Majority of poor farmers have continued to face limited access to credit facilities and where these facilities are made available, they are often at a very high cost (Okojie, *et.al*, 2010, Philip *et.al*, 2009). Credit has for a long time been considered as a primary means of rekindling and enhancing the growth potential of the rural economy, especially farming activities (Eborieme, 2008). Credit is not only needed for farming purpose, but also for family and consumption expenses especially during the off season period. Eborieme, (1999) found that the provision of credit to small scale rural farmers actually led to output growth and increase in gross incomes. He further observed that the trend can effectively checkmate poverty as increased income is expected to generate increased saving, investment and capital formation and eventually bring about increased productivity.

Agricultural credit is necessary to enable farmers take advantage of new technologies and to pay for such items as farm machineries, improved varieties of seeds, livestock, herbicides, labour and other running costs (Ijere and Miller, 1978). The inability of the rural farmers to get the needed credit from the formal lending institutions has been identified as an important constraint to the modernization of agricultural production and development of the rural areas in Nigeria (Ojo, 1989).

Therefore, it becomes imperative to investigate the determinants of Institutional credit demand of small scale farmers in the rural areas of Owerri agricultural zone. The specific objectives are to; Identify the socio-economic characteristics of the small scale food crop farmers, determine the amount of credit demanded and obtained by the food crop farmers and determine the factors influencing the amount of institutional credit demanded by the farmers in the study area.

## Materials and Methods

The study was carried out in Owerri Agricultural zone of Imo State. Owerri Agricultural zone is one of the three agricultural zones in Imo state. It is located between Latitude  $4^{\circ}45'$  and  $7^{\circ}25'$  north of the equator and Longitude  $6^{\circ}50'$  and  $7^{\circ}25'$  east of the meridian. The zone is made up of eleven Local Government Areas out of the twenty-seven Local Government Areas in the state. The population is about 1,480,853 which is about 38% of the total

population of 3,934,879 of the state (NPC, 2006). There are two main seasons in the zone, dry and rainy seasons. The zone experiences an average annual temperature, rainfall, relative humidity, number of rain-days and hours of sunshine per day, of 27°C, 1800mm, 72%, 4.4hours and 142days respectively (Nwaiwuet.al, 2013). Despite the observed erratic nature of both rainfall and dry spells, the location of the zone within the tropical rainforest belt of the country encourages and allows the growth and survival of most tropical food crops like yam, cassava, vegetables, rice etc, and livestock production. Hence about 60-70% of the inhabitants of this zone are observed to engage in agriculture, mainly crop farming and animal rearing (Okoyeet al, 2010).

Owerri Agricultural zone was chosen purposively for the study because of the dominance of food crop farmers who use institutional credit in their farming activities in the area, relative to others.

The multi stage sampling technique was employed in selecting the sample size. In the first stage, three local government areas out of the eleven local government areas were randomly selected for the study and they include Owerri North, Ikeduru and OhajiEgbema LGAs. Secondly, from each of these LGAs, two rural communities were randomly selected making a total of six rural communities.

The sampling frame was the list of food crops farmers in the selected communities that used institutional credit compiled with the assistance of extension agents and community leaders. Thirdly, from this sample frame, 20 food crop farmers were randomly selected from each community giving a sample size of one hundred and twenty (120) farmers.

Data were collected from primary and secondary sources. The primary data were collected with the use of structured and validated questionnaire supplemented with personal observation, while secondary sources of information were collected from journals, research reports, conference proceedings and other relevant literature.

### Analytical Procedure

Data were analysed using descriptive statistics and ordinary least squared multiple regression techniques. The descriptive statistics was used to analyse the socio economic characteristics while the ordinary least square multiple regression technique was used to analyse the factors influencing the amount of credit demanded.

The implicit form of the multiple regression model is expressed as;

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11}, e)$$

Where

Y = Amount of credit demanded (□)

X<sub>1</sub> = Loan transaction cost (□)

X<sub>2</sub> = Interest on loan (□)

X<sub>3</sub> = Age of the farmers (years)

X<sub>4</sub> = Sex (1 male, 0 female)

X<sub>5</sub> = Household size (number of persons)

X<sub>6</sub> = Educational attainment (years)

X<sub>7</sub> = Occupation (farming = 1, others = 0)

X<sub>8</sub> = Farming experience (years)

X<sub>9</sub> = Farmsize(ha)

X<sub>10</sub> = Collateral (measured on a four point scale)

X<sub>11</sub> = Annual farm income (□)

e = Error term

It is expected apriori that;

$$X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11} > 0; X_1, X_2, X_3 < 0$$

## RESULTS AND DISCUSSION

### Socio economic characteristics of farmers in the area.

Table 1 shows the distribution of respondents according to their socio economic characteristics

**Table1.** Distribution of the respondents according to their socio-economic characteristics

Variables	Frequency	Percentage
<b>Age</b>		
31 – 40	22	18.33
41 – 50	33	27.50
51 – 60	45	37.50
61 and above	20	16.67
Mean	51	
<b>Educational level</b>		
0	4	3.33
1 - 6	56	46.67
7 – 12	36	30.00
13 and above	24	20.00
Mean	8	
<b>Farm size</b>		
1 – 3	86	71.67
4 – 6	26	21.67
7 – 9	8	6.66
Mean	3	
<b>Sex</b>		
Male	87	72.50
Female	33	27.50
<b>Farming experience</b>		
1 – 5	16	13.33
6 – 10	55	45.84
11 – 15	21	17.50
16 and above	28	23.33
mean	11	
<b>Household size</b>		
1 – 3	14	11.67
4 – 6	62	51.67
7 – 9	44	36.66
Mean	6	
<b>Occupation</b>		
Farming	65	54.16
Others	55	45.84
Total	120	100

**Source;** field survey data, 2011

According to Table 1, the mean age of the respondents was 51years, indicating that majority of the respondents were middle aged farmers who are still at the active and productive stage of their life and have the ability to withstand the stress of most farming operations. This finding is consistent with that of (Onyeagocha, *et.al* 2008) that middle aged farmers are active, vibrant and dynamic and that they are more likely to adapt to innovations faster. The mean number of years spent in school was 8years, indicating that the respondents in the area are moderately educated. Education is an investment in human capital which is able to raise the quality of skill of man, narrow his information gaps and increase his allocative abilities thereby leading to more productive performance (Orebiyi, 2000). The table further showed that the respondents were well experienced, this is indicated in their mean years of experience which was found to be 11 years. The implication is that they are well experienced in farming and can therefore understand the need for credit and access it. This is consistent with the findings of (Orebiyi, 2012) that the higher the farmers farming experience, the higher his knowledge to tackle farm production problems and the higher his output. The mean household size of the respondents was 6 persons and this implies that the relatively large household size is an advantage in the area of provision of labour force for agricultural production in the area, this is in agreement with Henri-Ukoha *et.al* (2012) who opined that larger household size impacts on output positively. Majority (68%) of the respondents were male and this shows that

men have access to credit facilities more than women. This is consistent with the findings of (Tanko, 1994) that women do not get the same as men in their access to critical farm resources due to cultural and sociological factors, also majority of the respondents were farmers and their mean farm size was 3 hectares and this shows that the farmers are small scale.

Table 2 shows the distribution of the respondents according to the amount of credit demanded

**Table 2:** Distribution of the Respondents by the amount of credit demanded in the study area

Credit demanded (₦)	Frequency	Percentage
100000 – 150000	39	32.50
151000 – 200000	29	24.17
201000 – 250000	24	20.00
251000 – 300000	13	10.83
301000 – 350000	15	12.50
Total	120	100
Mean	₦198,670.83	

**Source;** field survey data, 2011

According to Table 2, majority (32.50%) of the farmers demanded for credit ranging from ₦100,000 - ₦150000, (24.2%) of the farmers demanded for credit between ₦151000 - ₦200000, (20%) of the farmers demanded for credit between ₦201000 - ₦250000, while (10.83%) and (12.5%) of the farmers demanded for credit ranging from ₦251000 – ₦300000 and ₦301000 – ₦350000 respectively. The table shows that the mean amount of credit demanded was ₦198,670.83, implying that the amount of credit demanded is low, hence it represents the scale of production which is small scaled. This is consistent with the findings of (Amao, 2013).

Table 3 shows the distribution of the respondents according to the amount of credit obtained

**Table 3:** Distribution of the Respondents by the amount of credit obtained in the study area

Credit demanded (₦)	Frequency	Percentage
100000 – 150000	52	43.33
151000 – 200000	31	25.83
201000 – 250000	21	17.50
251000 – 300000	10	8.34
301000 – 350000	6	5.00
Total	120	100
Mean	₦178,200	

**Source;** field survey data, 2011

According to Table 3, majority (43.3%) of the farmers obtained loan between the range of ₦100000 - ₦150000. (25.8%) of the farmers were given loan between ₦151000 - ₦200000, (17.5%) of the farmers were given loan between ₦201,000 - ₦250000, while (8.34%) and (5%) of the farmers were given loan ranging from ₦251000 - ₦300000 and ₦301000 - ₦350000 respectively. The table shows that the mean amount of loan granted to farmers was ₦178,200. This implies that with respect to the amount of credit demanded by the farmers, the amount of credit granted to the farmers was very close to the amount of credit demanded.

Table 4 shows the multiple regression result of the relationship between the amount of credit demanded by farmers and some selected variables

**Table 4:** Multiple regression results between amount of credit demanded and selected variables

Variables	Linear Form	Semi log Form	Double log form	Exponential form
Loan transaction cost ( $X_1$ )	-13.0391 (-6.1893)**	-1.3712 (-1.1171)	-0.0926 (-5.3526)**	-0.0091 (-7.5833)
Interest on loan ( $X_2$ )	-10.8012 (-1.1765)	-1.6659 (-1.3166)	-0.0717 (-5.0492)**	-0.0068 (-1.1929)
Age ( $X_3$ )	-11.0847 (-1.0742)	-2.7091 (-1.2511)	-0.0513 (-5.8965)**	-0.0093 (-1.1481)
Sex ( $X_4$ )	14.3314 (1.0936)	3.1106 (1.2839)	0.0321 (1.0844)	0.0072 (1.1076)
Household size ( $X_5$ )	9.0821 (4.3159)**	1.7165 (5.695)**	0.0833 (7.1196)**	0.0064 (4.923)**
Education ( $X_6$ )	14.2005 (1.0762)	1.6091 (1.557)	0.0641 (6.1634)**	0.0074 (1.1746)
Occupation ( $X_7$ )	10.9211 (1.1579)	3.1167 (1.0969)	0.0921 (1.1043)	0.0072 (1.0434)
Farming experience ( $X_8$ )	10.4913 (5.2081)**	2.5044 (1.2149)	0.0831 (5.8521)**	0.0065 (4.6428)**
Farm size ( $X_9$ )	19.5019 (2.7469)**	2.5923 (3.4991)**	0.0914 (6.8721)**	0.0076 (5.4285)**
Collateral ( $X_{10}$ )	10.2271 (1.086)	3.1709 (1.0699)	0.0943 (6.9851)**	0.0073 (1.1406)
Annual farm income ( $X_{11}$ )	17.1204 (5.5304)**	1.8217 (1.4909)	0.0726 (4.8079)**	0.0091 (3.9565)**
Constant	18.2908	15.4209	38.9126	29.0422
R <sup>2</sup>	0.4928	0.4013	0.8869	0.5924
F-ratio	4.2264	2.9185	16.1118**	6.3358
N	120	120	120	120

\* significant at 5%

\*\* significant at 1%

**Source:** field survey data, 2011

According to table 4, the double log functional form produced the best fit and hence it was chosen as the lead equation. The choice is based on the premise that it has the highest value of coefficient of multiple determination ( $R^2$ ), highest number of significant variables and conformity to apriori expectation. The F-ratio was statistically significant at 1%, this implies that the sample data fit the model and that the independent variables are important explanatory factors of the variations in the dependent variable. The  $R^2$  was 0.8869 indicating that about 89% of the variation in the dependent variable is explained by the variations in the independent variables. The table also shows that the coefficient for loan transaction cost, interest on loan, age, household size, educational level, farming experience, farm size, collateral and farm income were all significant at 1%. This shows that they are important determinants of credit demand in the study area. However, the coefficients for sex and occupation were not significant even at 5% level.

The coefficient for loan transaction cost and interest on loan were both significant and negatively signed, implying that the higher the magnitude of these variables, the lower the amount of credit demands. The coefficient for age was significant and negatively signed, implying that the age of farmers had an inverse relationship with credit demand and that the older one gets, the lesser the amount of credit that will be demanded, this is consistent with the findings of (Mbah, 2009) who found age of farmers insignificant to the amount of credit demanded.

The coefficients for household size, level of education and farming experience were all significant and positively signed, implying that the higher the magnitude of these variables, the higher the amount of credit that will be demanded. This findings agrees with those of Ohajianya and Onyeweaku (2003) who found a positive relationship between level of education, household size and farming experience and amount of credit demanded. The coefficient for farm size is significant and positive, implying that it had a positive influence on credit demand by farmers, this result agrees with the findings of Amanze, et.al (2010). Collateral also was significant and positively related to credit demand, implying that the higher the value of collateral, the higher the amount of credit that will be demanded. The coefficient for farm income was significant and positively signed, implying that as the income of the farmer increases, the demand for credit will also increase, this result agrees with the

findings of Nwagbo, (2004) who found a positive relationship between farm income and credit demanded

## CONCLUSION AND RECOMMENDATIONS

The findings revealed that majority of the respondents are still at the active and productive stage of their life, while male farmers dominated food crop production in the area. Majority of the respondents have acquired formal education and have reasonable household sizes with means of 8 years and 6 persons respectively. Majority of the respondents had small farm size and were reasonably experienced in their profession. The study revealed that the mean amount of loan demanded was ₦198,670.83 while the mean amount of loan obtained was ₦178,200. The study concluded that household size, education, farming experience, farm size, collateral and income had direct relationship with credit demand while loan transaction cost, interest on loan and age had an inverse relationship with credit demand.

Based on the findings of this study, the following recommendations are proffered;

Education is an important factor influencing credit demand, government should review credit policies that will improve the level of education in the rural areas thereby enhancing the level of awareness of agricultural credit.

The income of farmers should be considered when giving out credit in order to ensure good repayment. Government, stakeholders and financial institutions should ensure that steps for reducing high interest rate and loan transaction cost should be embarked upon.

## REFERENCES:

- Amanze, B., C.C Eze, (2010): Factors influencing the use of fertilizer in arable crop production among smallholder farmers in Owerri agricultural zone of Imo State, *Academia Arena*, 2 (6): 60 – 90.
- Amao, J.O (2013): Determinants of credit demand among arable crop farmers in Odo-otin Local Government Area of Osun State, Nigeria. *American-Eurasian Journal of Agriculture and Environmental Sciences.*, 13 (10): 1382-1389.
- Amaza, P.S, Onu, J.I and Okunmadewa, F.Y (2000): Determinants of credit production and economic efficiency in Nigeria. *African Journal of Business and Economic Research*, vol 112, Pp 34-40.
- Eboreime, M.I (1999): Development prospect of sustainable Microfinance. A study of Africa group lending model in South Eastern Nigeria; M.sc degree thesis. Department of Economics, University of Port-Harcourt.
- Eboreime, M.I (2008): Approaches to micro finance in developing countries; Lessons for rural poverty reduction in Nigeria. In Igbozurike et al (eds). *Rural Poverty in Nigeria*. Cape Publishers International Limited Abuja, Nigeria. Pp 343-354.
- Essien, U.A. (2009): Gender, informal credit markets and determinants of credit use by food crop farmers in Akwalbom State of Nigeria. M.sc thesis, Micheal Okpara University of agriculture Umudike, Nigeria
- Henri-Ukoha, A, Orebiyi, J.S, Obasi P.C, Oguoma N.N, Ohajianya, D.O, Ibekwe, U.C and Ukoha I.I (2012); Determinants of Loan acquisition From Financial Institutions by Small Scale Farmers In Ohafia, Agricultural Zone of Abia State, South East Nigeria. *Journal of Development of Agricultural Economics* 3 (2) 69-74
- Ijere, M.O and Miller, L.F. (1973): Group savings in some eastern villages, Department of Agricultural Economics, University of Nigeria Nsukka.
- Mbah, S.O (2009): The state of financing agricultural development in Enugu, State Nigeria. Proceedings of the 45<sup>th</sup> annual conference of the Agricultural Society of Nigeria, held at Abuja, 2009.
- NPC (2006): Provisional Census Figures, Abuja Nigeria, National Population Commission.
- Nwagbo, E.C (2004): Impact of Institutional credit on agriculture in Funta Local Government Area of Kastina State, Nigeria. *Sumaru Journal Of Agricultural Research*, 6 (5); 79-86.
- Nwaiwu, I.U, Ohajianya, D.O, Orebiyi, J.S, Ibekwe, U.C and Eze, C.C. Effects of climate change on labour time allocation to food crop production- A case study of Southeast, Nigeria. *Global Journal of Current Research Vol 1 No. 4 (2013) pp 108-115*
- Nwankwo, G.O (1983): The impact of government policies on the financial system. *Bullion* 2, 33-36.
- Nwaru, J.C (2004): Rural credit market and resource use in arable crop production in Imo State, Nigeria. Ph.D Dissertation, Micheal Okpara University of agriculture Umudike, Nigeria.
- Odoemenem, I.U, Obinne, C.P.O (2010): Assessing the factors influencing the utilization of improved cereal crop production technologies by small scale Farmers in Nigeria.
- Ogundari, K, Ojo, S.O (2007): Economic efficiency of small scale food crop production in Nigeria; A Stochastic Frontier Approach. *Journal of Social sciences*, 14(2), 123-130.
- Ohajianya, D.O and Onyeweaku, C.E (2003): Demand for Community Bank Credit by Small holder Farmers in Imo State, Nigeria. *Journal of Sustainable Tropical Agricultural Research*, Vol 7, pp 26-32.

- Ojo, M.O (1989): 'Agricultural credit policies and programmes, problems and prospects' Central Bank Economic and Financial Review 4(3) 12672-285.
- Okojie, C.A, Monye-Emina, K.Eghafona, G.Osugha and J.O Ehiakhamen, (2010): Institutional environment and access to microfinance by self-employed women in the rural areas of Edo State.NSSP. Brief No14 Washington.International Food Policy Research Institutespp8.
- Okoye,B.C; Onyeweaku, C.E and Ukoha O.O (2010) An ordered probit analysis of transaction cost and market participation by small-holder cassava farmers in south eastern Nigeria. In Nigerian Agricultural Journal Vol.41 No. 2 October, 2010
- Onyeagocha, S.U.O., Chidebelu, S.A.N.D, Okorji, E.C, Nwosu, F.O and Ehirim, N.C (2012), Loan Operational Method as Critical Factor in Repayment Performance of Microfinance Institution in south East States of Nigeria. *International Journal of Applied Research and Technology. 1(4);158-169*
- Orebiyi, J.S (2000): The performance of rural credit markets in Imo State, Nigeria. Unpublished Ph.D thesis, Federal University of Technology, Owerri.
- Orebiyi, J.S; Henri-Ukoha, A, Ben-Chendo N.G, Tasie C.M and Ekine D.I (2012):Determinants of credit supplied by IFAD to rural farmersbeneficiaries in Rivers State, Nigeria. *International Journal of Agricultural Economics, Management and Development (IJAMD)2;84-76.*
- Philip, D.E, P.J Nkonya and O.A Oni (2009): Constraints to increasing agricultural productivity in Nigeria. A review Nigeria Strategy Support Program (NSSP) Background paper No. NSSP 006.
- Tanko, N.M (1994):Contribution of rural women to agricultural planning and economic development in Nigeria. In; Ikpi, A.E and Olayemi, J.K (eds) Winrock,*International Journal for Agricultural Development. Pp 5-6.*
- Rahji, M.A.Y and S.B.Fakayode, (2009):A Multinomial logit analysis of agricultural credit rationing by commercial banks in Nigeria. *International Research Journal of Finances and Economics, 5(1); 24-91.*
- Udoh, E.J (2000): Demand and control of credit from Informal sources by rice producing farmers of Akwalbom State, Nigeria. *Journal of Agriculture and Social Sciences.1(2).152-15*

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