



Determinants of Credit Accessibility by Farmers in Owerri Agricultural Zone, Imo State, Nigeria

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Authors' contributions

This work was carried out in collaboration between all authors. Author IUON designed the study, wrote the protocol and supervised the work. Author EI performed the statistical analysis. Author SO wrote the first draft of the manuscript. Author EI managed the literature searches and edited the manuscript. All authors read and approved the final manuscript.

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ABSTRACT

This study investigated the factors affecting credit accessibility in Owerri agricultural zone of Imo state. Multi-stage sampling technique was used for sample selection. Data were collected with the use of structured and validated questionnaire from 7 purposively selected institutionalized credit sources and 60 randomly selected credit beneficiaries, comprising 20 farmers from each of the 3 purposively selected LGAs in the study area. Data were analyzed with descriptive statistics and Multinomial Logistic Regression (MLR). The result showed that (78%) of the farmers were in their active working age (40years) and majority (92%) of them were married; with a mean family size of 8 persons. This study has identified interest rate, lack of collateral and guarantor as major factors that negatively affected credit accessibility in the study area. The study recommended that the farmers should take advantage of the various credit facilitates offered by institutionalized sources in order to expand their production. The institutionalized credit sources should also put in place a comprehensive credit risk management process to identify, measure, monitor/control credit risk and where appropriate, hold capital against these risks in order to reduce risk of delinquencies and defaults.

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1. INTRODUCTION

Agriculture is the science, art and business of cultivating the soil, producing crops and raising livestock and in varying degrees and the preparation and marketing of the resulting products. It embraces all activities involved in the primary and controlled production of plants and animals, such as fishing, forestry, farming, livestock, poultry and small scale industries connected with processing of agricultural products [1-3]. Agriculture is one of the most important sectors of Nigerian economy. This is because it contributes more than 30% of the total Gross Domestic Products (GDP), employs about 70% of the labour force, accounts for 70% of the non-oil exports and perhaps most importantly provides over 80% of the food needs of the country [4,5] and [6].

Agricultural production in Nigeria, has suffered numerous challenges, one of which is financing. Finance has been one of the most significant problems in the expansion of agricultural production; hence successive Nigerian government has shown concern through policies and programmes aimed at adequate provision of finance and credits to farmers [7,8] and [9]. Agricultural credit is often seen as any of several credit vehicles used to finance agricultural transactions, including loans, notes, bill of exchange and bankers' acceptance. [10,11] 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. Agricultural credit is necessary to enable farmers take advantage of new technologies in the form of machinery, pay for such items as improved varieties of seeds and livestock, fertilizers, pesticides, labour and other running cost [12,13]. The role of agricultural credit in economic growth and development cannot be overemphasized, hence government has made concerted efforts to encourage the institutionalized credit sources (Commercial Banks/Deposit Money Banks, Microfinance Banks and Bank of Agriculture etc), through various policies and programmes to guarantee for loan default for farmers, due to the high risk and uncertainty in agricultural production [14] and [15].

Agriculture is an inherently risky economic activity. A large array of uncontrollable elements can affect output production and prices, resulting

in highly variable economic returns to farm households, which may result to default or delinquency in payment of agricultural credit [16,17,18]. Institutionalized credit sources avoids lending to finance agriculture for a host of reasons: High cost of service delivery, information asymmetries, lack of collateral, lack of branch network, high level of rural poverty, low level of farmers' education and financial literacy. But predominantly, bank managers around the world say, they will not finance agriculture because of high degree of uncontrolled production risk, price risk, and credit and default risk [19,20].

[7], [21] and [22], identified lack of collateral security (73%), lack of guarantor (54%), high interest rate (52%), mode of repayment (29%) and lack of information about the credit availability (23%) as factors affecting rural farmers access to credit.

[8] and [23] opined that access to bank credit is positively and significantly influenced by age, being male, household size, education level, household per capita expenditure and race (being Coloured, Indian or White); access to semi-formal credits is influenced by household size, per capita expenditure and provincial location.

This paper seemed to address the following specific objectives:

- i. To determine the socio-economic characteristics of the credit beneficiaries
- ii. To determine the factors affecting credit accessibility in the study area.

Therefore, an understanding of the factors affecting credit accessibility will help relevant policy makers to make legislations that will ease access to agricultural credit by farmers in the study area.

2. METHODOLOGY

Imo state is one of the five States of Southeastern Nigeria. It covers an area of 5100.10 Square Kilometer [9,24]. Imo is divided into three (3) agricultural zones, namely; Owerri, Orlu and Okigwe agricultural zone. Owerri agricultural zone of Imo State is one of the three agricultural zone of Imo state [25,26]. It is located at the south western part of Imo State. It is

bounded on the East by Abia, on the North by Isu and Isiala Mbanjo Local Government Area of Imo State and the South by Abia and Rivers states [27-29].

It comprises eleven (11) Local Government Areas; Aboh Mbaise, Ahiazu Mbaise, Ezinihitte Mbaise, Ikeduru, Mbaitolu, Ngor-Okpala, Ohaji/Egbema, Owerri Municipal, Oguta, Owerri north and Owerri west [30,31]. There are two main seasons in the zone: Dry and rainy seasons. The annual rainfall is between 2000 mm and 2500 mm, while the mean annual temperature is between 26-28 degree Celsius, with a relative humidity of 98% during the wet season [32,33]. The zone is richly endowed with fertile land suitable for growth of arable crops like yam, cassava, cocoyam, melon, maize etc [34,35]. In terms of infrastructural development, over 80% of the area is connected to the National Electric power grid. The major occupations of the people are farming and civil service [36-38].

Multi-stage sampling technique was used to select 7 institutionalized credit sources and 60 credit beneficiary farmers in Owerri agricultural zone. This technique was used in order to get a true representation of the institutionalized credit sources and credit beneficiary farmers from Owerri agricultural zone. In stage one, purposive sampling technique was used to select three (3) Local Government Areas (Ohaji/Egbema, Ngor-Okpala and Oguta) from Owerri agricultural zone. These Local Government Areas were purposively selected from the zone because they are predominantly involved in agricultural production. In stage two, the list of all the institutionalized credit sources (Deposit Money Banks, Microfinance Banks and the Bank of Agriculture), which gave credit to farmers and the list of credit beneficiary farmers in Owerri agricultural zone, was collected from the Development Finance Office (DFO) of the Central Bank of Nigeria (CBN), Owerri branch. This is because the agricultural credits supplied to farmers in Imo state are guaranteed by the Central Bank of Nigeria. In stage three, simple random sampling technique was used to select 60 credit beneficiary farmers from the list gotten from the CBN. This technique of equal number of 20 beneficiaries across the zone was used because there was no significance difference between the numbers of credit beneficiaries from the 3 purposively selected LGAs in the study area. Hence, 20 beneficiaries were selected from each of the three (3) Local Government Areas (Ohaji/Egbema, Oguta and Ngor-Okpala).

Finally, in stage four, purposive sampling technique was also used to select 7 institutionalized credit sources (First Bank, Diamond Bank, Union Bank, FUTO Microfinance Bank, All Workers Microfinance Bank, IMSU Microfinance Bank and Bank of Agriculture), comprising 3 Deposit Money Banks (Commercial Banks), 3 Microfinance Banks and one Bank of Agriculture in Owerri agricultural zone. This technique was used because these banks were adjudged by the CBN to be the only financial institutions that provides agricultural credits to farmers in the study area.

Data collected were analyzed using both descriptive statistics and econometric tools. The Mean (\bar{Y}), relative frequencies and percentage (%) were used to express the response of the credit beneficiary farmers.

In determining the factors affecting access to credit, Multinomial Logistic Regression (MLR) analysis was used to analyze the data. This is because the model has multiple independent variables that are dummies [8,39]. The model was explicitly stated as: $Y_i = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \dots + \beta_n X_n + e$eqn (1) [8,40] Where Y_i = The probability of access to credit by farmers (1=access credit and 0=otherwise). a = intercept; e = error term, X_1 = Lack of collateral (1=Yes, 0=No), X_2 = Lack of guarantor (1=Yes, 0=No), X_3 = Adequate information (1=Yes, 0=No), X_4 = Membership of cooperative society (1=Yes, 0=No) and X_5 = Interest rate (1=Yes, 0=No).

3. RESULTS AND DISCUSSION

3.1 Results for Socio-economic Characteristics of Credit Beneficiaries Farmers

Table 1 shows the results for the socio-economic characteristics of credit beneficiaries farmers in the study area.

The frequency distribution table, mean (\bar{Y}) and percentage (%) was used to estimate the socio-economic characteristics of the credit beneficiaries farmers in the study area. The result shows that (47%) of farmers were male, while (53%) were female. This result shows that the females are more involved in farming and have access to credits than the males, this can be adduced to the fact that men in the southeastern part of Nigeria are more involved in civil service, trading and artisanship than

farming. Though, it's in contradiction to [7,41-43] which states that men are more involved in farming than females. (1.67%) were of the age bracket of 21-30years, (35%) were of the age bracket 31-40years, (43%) were of the age bracket of 41-50years, 16.7%) were of 51-60years while 3.33% of them were 61years and above. The mean age of the farmers was 40years, which shows that they were in their productive age, where they can fully utilize agricultural credit to improve their production capacity. Also, 92% of the farmers were married while only 8% were single. 5% had OND/NCE, 11.7% had SSCE and its equivalent, 66.7% had FSLC while 16.6% had no formal education. This shows that majority of the credit beneficiary farmers has formal education, which could enhance their access to information on how to obtain credit from institutionalized sources.

Furthermore, the farmers had a mean farming experience of 8years. 6.67% had 1-5years farming experience, 15% had 6-10 farming experience, 33.3% had 11-15years farming experience, while 45% had 16-20years farming experience. This shows that majority of credit beneficiaries farmers had adequate farming experience. The mean Family size of the farmers was 8persons. 25% had a family size of 1-5 persons, 70% had 6-10 persons, while 5% had 11-15 persons as their family size. This shows that the farmers had adequate family size which may serve as family labour in their farm.

Finally, the mean farm size of the farmers was 1.5Hectares. 43.33% had a farm size of 1-1.9 Hectares, 48.33% had 2-2.9 Hectares, while 8.33% had a farm size of 3-3.9%. This shows that the farmers are typically small holders farmers who produce low output because of their small farm size.

From the Table 2, it shows that majority (83%) of the farmers acknowledged lack of collateral security as a problem, while about (88%) realized lack of guarantor as a problem. Others are in the following other, adequate credit information (50%), membership of cooperative society (43%) and high Interest Rate (87%).

It is clearly seen that, lack of collateral security, lack of guarantor, adequate credit information and high interest rate have from 50% and above. Membership of cooperative society has less than 50%. This implies that the first four problems are seen as the major problems while the last one seen as a minor problem they face in credit accessibility.

This is similar to the results of [7,44,45] which also identified lack of collateral security, lack of guarantor and high interest rates as problems facing farmers in credits acquisition.

Table 1. Socio-economic characteristics of credit beneficiaries farmers in the study area

Characteristics	Frequency	Percentage %
Sex		
Male	28	47
Female	32	53
Age (Years)		
mean=40		
21-30	1	1.67
31-40	21	35
41-50	26	43
51-60	10	16.7
61 and above	2	3.33
Marital status		
Married	55	92
Single	5	8
Educational qualification		
OND/NCE	3	5
SSCE/Equivalents	7	11.7
FSLC	40	66.7
No formal education	10	16.6
Experience (Years)		
(mean=8Yrs)		
1-5	4	20
6-10	6.67	33.3
11-15	9	27
16-20	15	45
Family size		
(mean= 8 persons)		
1-5	15	25
6-10	42	70
11-15	3	5
Farm size		
(mean=1.5 Hectares)		
1-1.9	26	43.33
2-2.9	29	48.33
3-3.9	5	8.333

Source: Field Survey data, 2015

3.2 Logit Estimates for Factors Affecting Access to Credit

Lack of collateral(X_1), Lack of guarantor(X_2) and high interest rate(X_5) has a negative relationship with probability of access to credit, which was significant at 5%. This was because the institutionalized credit sources in Nigeria, required collateral security and guarantor as a credit and default management strategy. This finding is consistent with that of [46-50] which identified collateral, guarantor and high interest rate as constraints by farmers in accessing

formal credits. Also, adequate information on credit (X₃) and membership of cooperative society (X₄) has a direct or positive relationship with the probability of access to institutionalized credit, which was significant at 5%. This finding is consistent with that of [51-53], which identified adequate credit information and cooperative membership as a major factor that positively influence access to formal credit.

Table 2. Frequency and percentage distribution of problems facing farming households in credits acquisition

Variable	Frequency*	Percentage
Lack of collateral (x ₁)	50	83
Lack of guarantor (x ₂)	53	88
Adequate credit information (x ₃)	30	50
Membership of cooperative society (x ₄)	26	43
Interest rate (x ₅)	52	87
Total	261	351

*Multiple Responses
Source: Field Survey Data, (2015)

Table 3. Shows the Logit estimates for the factors affecting access to credit in the study area

Explanatory variable	Coefficient	Wald statistics
Lack of collateral (x ₁)	(-27.75) ***	.001
Lack of guarantor (x ₂)	(-31.21) ***	.000
Adequate credit information (x ₃)	(31.21) ***	.000
Membership of Cooperative society (x ₄)	(12.34) ***	.0002
Interest rate (x ₅)	(-1.309) ***	0.006

Source: Field Survey Data, (2015)

***Significant at 5%, Pseudo R-Square: Cox and Snell 24.3%, Nagelkerke 28.9%, N=60

Note: The coefficient of an explanatory variable is said to be significant if the Wald statistics value is less than the level of significance (5%)

4. CONCLUSION AND RECOMMENDATIONS

This study concludes that (78%) of the farmers were in their active working age (40 years) and majorities (92%) of them were married. Over 82% of the farmers had formal education; with a mean family size of 8 persons. The farmers had 8 years and 1.5 hectares as their mean farming experience and farm size respectively. The study has also identified interest rate, lack of collateral

and lack of guarantor as major factors that negatively affect credit accessibility, while cooperative membership and adequate information on credit positively enhance the probability of accessing institutionalized credits in the study area.

Based on the findings of this study, the following were recommended.

- The Nigerian government and financial institutions should make credits available to farmers at concessionary single digits rate for easy accessibility to the farmers.
- The farmers should be members of cooperative society, as this will help to reduce the problem of collateral and guarantor requirement which are prerequisite for accessing institutionalized credit.
- Greater information dissemination by all the stakeholders in the farming business such as the government, financial institutions, extension agents should be fully embarked on to create more awareness to the farmers on credits availability in their locale.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Adegboye AJ, Ditto JS. Essentials of agricultural economics. Impact Published Limited, Ibadan. 2004;1-12.
2. Akudugu MA. Estimation of the determinants of credit demand by farmers and supply by rural banks in Ghana's Upper East Region. Asian Journal of Agriculture and Rural Development. 2012; 2(2):189-200.
3. Awoke MU. Factors affecting loan acquisition and repayment patterns of small holder farmers in Ika North West of Delta State, Nigeria. Journal of Sustainable Agricultural Resources. 2004;9:61-64.
4. Central Bank of Nigeria (CBN, 2008), Economic and Financial Review. 2008; 25(4):2.
5. Central bank of Nigeria. Comprehensive guidelines for banks and State Governments: Guidelines for Large Scale Agricultural Credit Scheme LASACS. Central Bank of Nigeria, Abuja. 2010;5-7.

6. Bamisele D. Microfinance - a tool for rural development. Paper Delivered at the Commissioning of Alheri Community Bank, Tudun Wada, Kaduna. 2006;8-12.
7. Olalade A, Ike P, Kaine I. Alleviating rural poverty through effective microcredit: Evaluation of UNDP invention in Delta State. *Journal of Agricultural Research and Ploicies*. 2012;3(2):84-90.
8. Francis NK. Access to credit by the poor in South Africa: Evidence from household survey data 1995 and 2000. *Stellenbosch Economic Working Papers*. 2006;6.
9. National population commission. Population census statistics of Imo State. 2006;2-3.
Available:www.citypopulation.de/php/Nigeria/pdf
10. Olowa OW. *Agricultural finance: Learners' motivated approach*. Lagos: Osakwe and Associates Publishers. 2005;5-7.
11. Adesije GB, Matanmi BM, Falola A, Ahmed TA. Effects of credit utilization on youth farmers' output in Patigi LGA of Kwara State. *Journal of Agricultural and Social Research (JASR)*. 2011;11(2):32-34.
12. Adekekaye F. *Elements of banking in Nigeria*, Lagos: F and A publishers. *Agricultural development: A case study of small-scale food production in Ondo State, Nigeria*. *Samaru Journal of Agricultural Education*. 2008;3(1 and 2):29-35.
13. Afolabi JA. Analysis of loan repayment among small-scale farmers in Oyo State, Nigeria. *Journal of Social Science*. 2010; 22(2):115-119.
14. Agu CC. *Loan management in agriculture*. Reading in *Agricultural finance*. Longman Nigeria PLC. Lagos; 2002.
15. Aliyu AA. An investigation into the relationship between agricultural production and credit supply in Nigeria. *International Journal of Agriculture and Forestry*. 2012;2:22.
16. Arene CJ. Loan repayment and financial assistance among small holder farmers in Nigeria. *African Revenue, Money, Finance and Banking*. 2003;1:63-64.
17. Antieno R. Formal and informal institutions' lending policies and access to credit by small-scale enterprise in Kenya: An empirical assessment. *African Economic Research Consortium*, Nairobi; 2001.
18. Baye MR. *Managing Economics* Second Edition. Irwin, Chicago, USA; 2000.
19. Bank of Agriculture. *History and Functions of BOA*; 2010.
Available:www.boa.gov.ng
20. Craig T, Erik V. *Acceptable risk processes: Lifelines and Natural Hazards*. Reston, VA: ASCE; 2002.
21. Chauke PK, Motlhatlhana ML, Pfumayaramba TK, Anim FD. Factors influencing access to credit: A Case Study of Smallholders Farmers in the Capricorn District of South; 2013.
22. Africa. *African Journal of Agricultural Research*. 2013;8(7):582-585.
23. Dallimore O, Mgimeti. In: Francis NK. 2006. Access to credit by the poor in South Africa: Evidence from household survey data 1995 and 2000. *Stellenbosch Economic Working Papers*; 2003.
24. Ejike RD, Ohajianya DO, Lemechi JI. Agricultural credit and default management by banks in Imo State. *Greener Journal of Agricultural Sciences*. 2013;137-144.
25. Eyo EO, Merrian AN, Asuquo AI. Effectiveness of loan delinquency management strategies in Akwa Ibom State, Nigeria. *British Journal of Economics Management and Trade*. 2013;3(4):550-562.
26. Gideon OA, Swain C, Olaitan R. Dynamics of rural credit and its impact on agricultural productivity. *International Journal of Agriculture and Forestry*. 2006; 2(2).
27. Harringtons SE, Niehaus GR. *Risk management and insurance*. Irwin, Mc Graw-Hill, Boston, USA; 2001.
28. Harrell FE. *Regression Modeling Strategies with Application to Linear Models, Logistics Regression and Survival Analysis*. Springer-Verlag, New York; 2001.
29. International Organization for Standardization. ISO/DIS 31000. *Risk Management -Principles and Guidelines on Implementation*; 2009.
30. Ike PC, Kaine AI. Alleviating rural farmers poverty through effective microcredit: Evaluation of UNDP intervention in Delta State. *Journal of Agricultural Research and Policies*. 2008;3(2):84-90.
31. Jibowo AA. History of agricultural extension in Nigeria. *Journal of Research in National Development*. 2005;6(2):77-84.
32. Kalinda T, Filson A. Agricultural credit allocation and constraint analyses of selected maize farmers in Ghana. *British*

- Journal of Economics, Management and Trade. 1998;2(4):353-374.
33. Lippmann R. Estimation of the determinants of credit demand by farmers and supply by rural banks in Ghana's Upper East Region. *Asian Journal of Agriculture and Rural Development*. 2010; 2(1):100-103.
 34. Moyo C. *Micro, Small Enterprise and Rural Finance in Sub-Sahara Africa, the Economist*, Washington, DC; 2002.
 35. National Bureau of Statistics; 2000. Available:www.nbs.gov.ng
 36. Oladeebo JO. Determinants of loan repayment among smallholder farmers in Ogbomosho agricultural zone of Oyo State Nigeria. *Journal of Social Sciences*. 2008; 17(1):59-62.
 37. Olayemi JK. *Elements of Applied Econometrics*, Published by El-Shadai Global Venture Ltd. Nigeria; 1998.
 38. Olaitan R. Dynamics of rural credit and its impact on agricultural productivity. *International Journal of Agriculture and Forestry*. 2006;2(2):45.
 39. Ogunfowora O, Essang SM, Olayide SO. Capital and credit in Nigeria agricultural development. Nigeria rural development study paper. University of Ibadan, Ibadan, Nigeria. 2013;6.
 40. Panmanabhan KP. *Rural credit: Lessons for rural bankers and policy makers*. Immediate Technology Ltd, London. 2001; 11-15.
 41. Petrick M. Empirical measurement of credit rationing in agriculture: A methodological survey. *Agricultural Economics*. 2014; 33(2):191-203.
 42. Peter S, David H. *Practical risk management: The ATOM methodology. management concepts*. Vienna, VA; 2012. ISBN 978-1567263664
 43. Sanderantne N. The political economy of smaller farmer loan delinquency. *Savings and Developmen*. 2000;4(10):343-354.
 44. Sriram O. The analysis of the rural credit market in India. *International Business and Economic Research Journal*. 2001;9(8)45-56. Available:<http://www.inderscience.com>
 45. Swain U. The analysis of the rural credit market in Ghana. *International Business and Economic Research Journal*. 2001; 9(8):45-56. Available:<http://www.inderscience.com>
 46. Schwab C. *Discovering statistics using SPSS. (2nd Ed.)* London; 2002.
 47. Tripathi S, Prasad C. In Eyo EO, Merrian AN, Asuquo AI. Effectiveness of loan delinquency management strategies in Akwa Ibom State, Nigeria. *British Journal of Economics. Management and Trade*. 2013;3(4):550-562.
 48. Ugwumba CO, Nnabuife EL, Ike PC. Loan repayment among microfinance cooperators of the Nigerian Agricultural Cooperative and Rural Development (NACRDB) in Anambra State. *Journal of Research in National Development*. 2008; 6(2):50-52.
 49. Umoh PN. Capital restructuring of banks: A conceptual framework, in CBN (ed). *Consolidation of Nigeria's Banking Industry Proceeding of Fourth Annual Monetary Policy (NPC) Conference*. FCT, Abuja; 2005.
 50. World Bank. *Framework for World Bank Group Support for the Development of Small and Medium Scale Enterprises in Africa*; 2008. Available:www.worldbank.org
 51. World Bank. *World development report 2008*. World Bank, Washington DC; 2013. Available:<http://www.worldbank.org>
 52. Woodridge JM. *Introductory econometrics, modern approach, fourth edition*. Michigan State University; 2009.
 53. Wyne A, Lyne G. Estimation of the determinants of credit demand by farmers and supply by rural banks in Asia. *Asian Journal of Agriculture and Rural Development*. 2005;2(1).

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