



Socio-Economic Factors Influencing Agricultural Loan Acquisition among Small-Scale Rice Farmers in Benue State, Nigeria

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ABSTRACT

The study analyzed the socio-economic determinant of loan acquisition among small-scale rice farmers in Benue State, Nigeria. Data were collected from 227 rice farmers in six Local Government Areas using multi-stage sampling technique. Data collected were analyzed using descriptive statistics and logit model. The findings of the study showed that majority (64.3%) of the respondents were male and married (74.9%) with average age of 35.23 years, with a mean annual income of N98,552. The findings also revealed that a total of N14,216.87 was applied. Out of this amount, N9,486,000 was acquired, giving 66.7% acquisition of loan among the respondents. The result of the logit model shows that age, household size, education, farm size, membership of cooperative and annual income were significant factors affecting the likelihood of farmers access to loan. Based on the findings, it was recommended that there should be a deliberate policy to ensure easy access to loans at soft interest rate, while agricultural extension education on loan acquisition should be intensified.

Keywords: Determinant, Loan acquisition, Small-scale, Rice farmers, Benue State.

INTRODUCTION

In most developing countries, credit is the pivot on which agricultural development rests. It is often used to stimulate agricultural development in the desired direction. Cheap credit to farmers is a means of increasing their investment capacity and ameliorating the vicious cycle of poverty in which smallholder farmers often find themselves (Okorie & Iheanacho, 1992).

Credit has the potential to enhance efficient resource allocation (Enya & Adinya, 2008), permit application of new technologies, reduced post harvest waste and stabilize farm prices, farm incomes and enhance efficient marketing of agricultural products. Small-scale farmers need credit facilities to maintain adequate farm size, finance the use of purchased inputs such as fertilizer improved seeds, insecticides and additional labour. In the same vain, Bakhtiari (2006) found that small amount of capital provided to the poor can make the difference between absolute poverty and thriving little business, generating enough income to feed the family, send their kids to school and build decent housing

Rice (*Oryza sativa*) is the most important cereal in the world with a prime income source for smallholder farmers in Nigeria. The fact that rice farmers have mostly small-scale farm holdings, domestic production has not increased to meet the economy's demand. As a result of this demand, the Nigeria government has mapped out strategies through policies such as restriction, import tariffs and production incentives as well as subsequent ban in 2006 to boost domestic production of rice. Most rice farmers being small scale farmers have low income and productivity and are faced with enormous difficulties in acquiring loan facilities due to late disbursement of agricultural loans, non-fulfilment of security or collateral requirement

necessitated by bad debts, diversion of funds by the banks management for non-agricultural purposes and inability of the banks to reach small-scale farmers at the grassroots. Besides, there is limited information on the determinants of credit by small-scale farmers from financial institutions in the study area. This lack of credit resources according to Lawal and Shittu (2006) causes setbacks to the productivity of farmers, resulting from lack of resources to procure improved seedlings, chemicals and hired labour, as well as transport and market their produce to improve their welfare.

The broad objective of the study was to analyze the socio-economic factors influencing loan acquisition among small-scale rice producers in the area. The specific objectives were to:

- i) analyze the socio-economic characteristics of small-scale rice farmers;
- ii) assess the extent of loan acquisition among the farmers;
- iii) estimate the effects of socio-economic factors on loan acquisition among the rice farmers in the study area; and
- iv) identify the constraints of loan acquisition among the small-scale farmers in the area.

METHODOLOGY

Study area

The study was conducted in Benue State, Nigeria. The state lies between latitudes 6^o25'N and 8^o8'N and longitudes 7^o47'E and 10^oE. Benue State is popularly known as the “Food Basket” of the Nation because of the abundance of its agricultural resources. The state is a major producer of food and cash crops (Benue State Agricultural and Rural Development Authority (BNARDA, 2004), and has 12,681 smallholder’s rice farmers made up of 9,279 males and 3,186 females (Federal Ministry of Agriculture and Rural Development (FMARD, 2013). Small-scale rice entrepreneurs who are engaged in rice production and distribution/marketing of rice production abound in the state.

Sampling technique and data collection

The population for this study comprised smallholder’s rice farmers in Benue State. A sample of 227 small-scale rice farmers from six Local Government Areas (LGAs) known for rice production were randomly selected using sampling frame from FMARD.

Data were collected mainly from primary sources on the socio-economic characteristics of the respondents, using structured questionnaire.

Data analysis

Descriptive statistics were used to analyze the socio-economic characteristics of the rice farmers, while logit model was used to examine the determinants of loan acquisition among the respondents.

The model was explicitly expressed as follows:

$$\ln \left[\frac{P_i}{1-P} \right] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + U_i$$

Where,

P_i = Probability of access to credit (Access = 1 & No access = 0)

X_1 = Age (years)

X_2 = Household size (number)

X_3 = Education background (years)

X_4 = Rice Farm Size (hectares)

X_5 = Rice Farming Experience (years)

X_6 = Number of Extension contacts (number)

X_7 = Membership of cooperative society or farmers’ association (Member = 1, non-member = 0)

X_8 = Farm Income (₦)

e = Error term

It was expected *a priori* that $b_2, b_3, b_4, b_5, b_6, b_7 > 0$, while $b_1, b_8 < 0$

RESULTS AND DISCUSSION

Socio-economic characteristics of respondents

The distributions of respondents according to their socio-economic characteristics are summarized in Table 1.

Analysis of Table 1 reveals that majority of the respondents (64.3%) were male whereas 35.7% were female. This finding implies that male gender dominates rice farming in the study area. The male dominance of this rural source of livelihood is due to the laborious nature of farming operations right from tillage to harvesting, which their female counterparts cannot easily undertake, especially with the crude farm implements used. Females are usually involved in light farm operations such as processing, harvesting and marketing.

The mean age of small-scale rice farmers was found to be 35.23 years, with a standard deviation of 9.3. About 36% of the respondents were within the age group of 21 to 30 years, while 5.7% were above 50 years. This finding showed that most of the respondents are young people who are energetic enough to withstand the stress involved in farm operations. This is in line with the findings of Ikani (2013) that young farmers are innovative and active at work as the older ones are weak and no longer in their productive stage.

The results further revealed that majority of the respondents (74.9%) were married while 25.1% were still single.

The mean household size of the respondents was found to be four (4), with a standard deviation of 2.7. Majority of the respondents (78.8%) had household size of 1-5, while 3.9% had a household size ranging from 11 to 16. Large household size increases availability of family labour for rice production, consequently reducing the amount spent on hired labour. This finding concurs with the findings of Oboh and Ekpebu (2011) and Ismaila (2010) who found that wives and children can serve as cheap source of labour which may lead to increase in their farm size and increase their overall level of farm output.

The mean number of years spent in formal education by the respondents was 8.66 years, with a standard deviation of 6 years. Most of the respondents (36.6%) attended secondary school while 15% of the respondents were illiterates. The finding shows that the small-scale rice farmers are fairly educated in the study area. This finding also reveals that almost all the respondents were literate enough for effective communication and adoption of agricultural technologies in doing their farming business in the study area. Increased level of education determines the quality of skills of farmers, their allocative abilities, efficiency and how well informed they are of the innovations and technologies around them (Moyib, Akinwumi & Okoruwa, 2013; Girei *et al.* 2014).

The mean years of respondents' farming experience was found to be 11.29, with a standard deviation of 7.3. Majority of the respondents (57.7%) had about 1 to 10 years of rice farming experience, while 8.4% had about 21 to 30 years of rice farming experience. This implies that most of the respondents are well experienced in rice farming. Increase in the years of farming experience leads to farmer ability to manage, operate a farm, increase in the output, as well as increase familiarity to loan sources (Okorie *et al.*, 2011 & Osuntogun, 1980).

Table 1: Socio-economic Characteristics of Respondents (n=227).

S/N	Socio-economic characteristics	Frequency	Percentages	Mean	Std. Deviation
1.	Sex				
		146	64.3		
	Male	81	35.7		
	Female				
2.	Age (years)			35.23	9.3
		6	2.6		
	11-20	82	36.1		
	21-30	77	33.9		
	31-40	49	21.6		
	41-50	13	5.7		
	>50				
3.	Marital Status				
		57	25.1		
	Single	170	74.9		
	Married				
4.	Household Size			4	2.7
		179	78.8		
	≤ 5	39	17.2		
	6-10	9	3.9		
	11-15				
5.	Educational Status			8.66	6
		34	15		
	No Formal Education	72	31.7		
	Primary Education	83	36.6		
	Secondary Education	38	16.7		
	Tertiary Education			11.29	7.3
6.	Farming Experience (years)	131	57.7		
		77	33.9		
	1-10	19	8.4		
	11-20			1.04	0.49
	21-30	61	26.9		
7.	Farm Size (Hectares)	104	45.8		
		33	14.5		
	≤0.5	29	12.8		
	0.6-1			98,552	87,749
	1.1-1.5	145	63.8		
	> 1.5	58	25.6		
8.	Annual Income (₦)	24	10.6		
	≤100,000	69	30.4		
	100,001-200,000	158	69.6		
	>200,000				
9.	Membership of Cooperative				
	Members				
	Non-members				

Source: Field Survey, 2015

The mean farm size of respondents was 1.04 hectares, with a standard deviation of 0.49 hectares. Most of the respondents (45.8%) had farm size between 0.6 - 1 hectare, while only 12.8% had above 1.5 hectares of farm size. Farm size accentuates the level of awareness of agricultural loan procurement procedures. Ceteris paribus, the larger the farm size used as

collateral, the more the credit procured. The amount of credit granted by the credit institution is greatly influenced by size of farmland used as collateral (Ademiluyi *et al.* 2011).

The mean annual income of small-scale rice farmers from their farm activities was ₦98,552, with standard deviation of ₦87,749. This indicates that majority of the respondents (63.8%) earned less ₦100, 000, while the remaining 10.6% earned above ₦200, 000. These annual incomes of the farmers were too poor for any meaningful economic activity in view of the large household size of the respondents. This could be attributed to ineffective utilization of agricultural loan by majority of the respondents. This low annual income is attributable to small-sized farms that most of the respondents operate and their generally low level of education. This is acceptable on the ground that education affects the way farms are managed as well as overall production (Nkang, Ajah, Abang, & Edet, 2009).

The results further revealed that majority of the respondents (69.6%) were not members of cooperative society whereas 30.4 percent were members of cooperative society. Most of the individual small-scale rice farmers in the study area do not have the privilege of having their needs satisfied through the cooperative society, which has a higher bargaining power compared to individual farmers. The greater the extent to which the various farmers' cooperative societies as groups satisfy the needs of their members, the more the farmers get involved with the groups. This is also supported by Ofuoku, Enaikele and Nnodim (2008) who found that farmers who did not subscribe to the membership of cooperative societies had to contend with the disadvantages of limited access to extension services, reliance on middlemen for marketing (who also dictate the price) of their produce, high cost of input and lack of opportunity to share experience and ideas.

Distribution of respondents according to extent of loan acquisition

The breakdown of the loan acquisition among the small-scale rice farmers in the study area is summarized in Table 2. The analysis shows that a total of 134 respondents applied for loan amounting to ₦14,216,500. Out of this amount, ₦9,486,000 was acquired, giving 66.7% acquisition, with average amount of ₦252,106.87 acquired by each respondent for farm activities. This amount was big enough for rice farmers to easily acquire fertilizers, pesticides, labour and other inputs in required quantity, especially if the credit is timely obtained.

The result further shows that a total of 61 respondents applied for loan below ₦100,000, amounting to ₦3,436,500. Out of this amount, ₦2,016,000 was acquired, giving 59% acquisition, while 65 applied for between ₦100,000 and ₦200,000, amounting to ₦8,710,000. Out of this amount, ₦6,520,000 was acquired, giving 75% acquisition, while only eight (8) applied for above ₦200,000, amounting to ₦2,070,000, and obtained ₦950,000, giving 46% acquisition.

Table 2: Distribution of respondents according to extent of loan acquisition

Loan application	No. of loan applicant	Total amount applied (₦)	Total amount acquired (₦)	% Acquisition	Average amount acquired (₦)
≤100,000	61	3,436,500	2,016,000	58.67	33,049.18
100,001-200,000	65	8,710,000	6,520,000		100,307.69
>200,000	8	2,070,000	950,000	74.85	118,750
Total	134	14,216,500	9,486,000	45.89	252,106.87

Source: Field Survey, 2015

Determinants of loan acquisition

The result of the logit regression model is presented in the Table 3. The chi-square (208.023) statistic revealed that the model was significant at 1% level. This indicates that the respondents socio-economic characteristics considered in the model are relevant in influencing loan acquisition. Hence, the null hypothesis was rejected and the alternative hypothesis accepted. The Nagelkerke R square (adjusted R²) was 0.809, indicating a strong relationship of 80.9% between socio-economic characteristics of the respondents and loan acquisition.

The result showed that the coefficients on age, household size, education, farm size, membership of cooperative and annual income significantly affected the likelihood of farmers having access to loan. The coefficient of age (0.104) was positive and significant at 10 percent level, and not in line with the *a priori* expectation. As the age increases, the farmer is 1.110 times more likely to access loan. Age is a strong indication for high productivity which can significantly boost the zeal of farmers' in loan acquisition. The older the farmer, the greater his awareness about the availability of loan, and the greater his access to loan which will invariably lead to increase in the farmers' output. This confirmed the findings of Henri-Ukoha *et al.* (2011) that age significantly affects the amount of loan acquired by small-scale farmers in Ohafia agricultural zone of Abia state, south-east Nigeria.

The result further shows that the coefficient of household size was -0.159 and significant at 5% level. The negative sign of the coefficient of household size is in contrast with the *a priori* expectation, implying that the probability of small-scale rice farmers' loan acquisition decreases as their household size increases. As the household size increases the farmers' are 0.737 times less likely to access loan. This is because, farmers with large household size are more likely to be exposed to the danger of loan diversion due to family problems. The negative effect of household size found in this study corroborates Oboh (2011) findings which revealed that household size was inversely related to loan acquisition. This finding is in agreement with Mejeha (2005) in which farmers with high household sizes tended to divert their loans for the sustenance and upkeep of the family members.

The result also shows that the coefficient of education was 0.143 and significant at 5% level. Education has a significant and positive influence on small-scale rice farmers' in loan acquisition in the study. The positive sign of the coefficient of education conforms to *a priori* expectation, implying that the probability of loan acquisition is shown to increase with education. As the education increases the farmers are 1.154 times more likely to acquire loan. Educated farmer will have courage, boldness and the know-how required to approach financial institutions for loan. This confirmed the findings of Asogwa, Abu and Ochoche (2014) that education raises farmers' knowledge and awareness of the need for agricultural loan and leads them to seek for agricultural loan facilities.

Analysis of farm size shows that the coefficient was -5.955 and significant at 1% level. The negative sign of the coefficient of farm size does not conform to *a priori* expectation, implying that the probability of the small-scale rice farmers' loan acquisition decreases with increasing farm size. As the farm size increases the farmer is 0.003 times less likely to access agricultural loan compared to their counterparts with smaller farms. Since producers generally become more risk-averse with farm size, this parameter estimate suggests that less loan is probably sought for to avoid the risk of default in repayment. The negative effect of farm size found in this study corroborates Olomola and Gyimah-Brempong (2014) findings among farmers in Oyo state, Nigeria which revealed that farm size was inversely related to loan acquisition.

The coefficient of membership of cooperative society was -4.366 and significant at 1% level. This is in conformity with the *a priori* expectations, implying that loan acquisition decreases with membership of cooperative society. Farmers who are members of cooperative society are 0.013 times less likely to acquire loan compared to their counterparts who are non-members. The reason is obvious. Farmers who are members of cooperatives and whose loan acquisition is low are probably those with large household size, for fear of diverting loans to other

expenditures on hospital bills, school fees, food, clothing and family upkeep. This is supported by Mejeha (2005) that farmers with high household sizes tended to divert loans for sustenance and upkeep of the family members. This is not in agreement with the findings by Asogwa, Abu and Ochoche (2014) that membership of cooperative society imparts on members the capacity to access agricultural loan and ensures doing the right thing.

The coefficient of farm income was 1.000 and significant at 1% level. It also revealed that farm income has a significant and positive influence on small-scale rice farmers' in loan acquisition in the study. This is in conformity with the *a priori* expectation, implying that as the farm income of the farmers' increases, they are 1.000 times more likely to access loan. It can be inferred that farm income is a strong indication for high productivity which can significantly boost the zeal of farmers' in loan acquisition. This result was in line with earlier findings by Oyeyinka and Bolarinwa (2009) that loan access had a significant and strong effect on both income and food consumption which improves quality of life, protecting against economic vulnerability, making productivity-enhancing investments, and leveraging assets.

On the other hand, the coefficients of farming experience and extension contact had insignificant influence on loan acquisition among small-scale rice farmers in the study area.

Table 3: Logit regression model showing factors affecting loan acquisition by rice farmers

Variables	B	Sig	S.E.	Wald	Exp(B)
Age	0.104	0.088*	0.061	2.903	1.110
Household Size	-0.305	0.027**	0.138	4.905	0.737
Education	0.143	0.020**	0.061	5.441	1.154
Farm size	-5.955	0.000***	1.498	15.811	0.003
Farming Experience	-0.082	0.298 ^{NS}	0.079	1.083	0.921
Extension Contact	-12.211	0.999 ^{NS}	8612.436	0.000	0.000
Membership of Cooperative	-4.366	0.000***	1.244	12.321	0.013
Farm Income	1.000	0.000***	0.000	28.034	1.000
Constant	11.359	0.999	8612.437	0.000	85746.840
Model Chi-Square	-	-	-	-	208.023***
Nagelkerke R Square	-	-	-	-	0.809

Source: Data Analysis, 2015. ***Significant at 1% ($\alpha_{0.01}$), **Significant at 5% ($\alpha_{0.05}$), *Significant at 10% ($\alpha_{0.1}$), NS = Not Significant.

Constraints to loan acquisition

The result of the constraints encountered by farmers in acquiring loan is summarized in Table 4. The result shows that majority (99.6%) of the respondents acknowledged lack of collateral as a constraint to acquiring loan. This arises from the facts that their farming activities do not generate enough revenue to enable them purchase fixed assets that they could use as collateral for loan, low yield and inadequate organization of farmers into cooperatives, which can serve as bargaining power in accessing loan from financial institutions. Furthermore, profit earned is not enough, especially when an economy of scale is put into consideration, and as such it is assumed that most of it would be swallowed up by the interest charged. This agrees with the finding of Nelson and Nelson (2010) who blamed the inability of rural dwellers to access loan on lack of collateral.

Similarly, 99.6 % attributed lack of guarantor as a constraint in obtaining loan. This implies that farmers are always unable to find a third party to stand in for them, should they default in repayment of loan. This may be due to the fact that many people perceive agriculture as a low income and risky occupation in which the farmers hardly break-even. Hence, the fear by many that the farmer will most likely default on the loan repayment. This finding is supported by

Ololade and Olagunju (2013), who found that most (54.3%) of rural farmers in Oyo state, Nigeria acknowledged lack of guarantor as a constraint to accessing loan.

The result further revealed that 99.1% perceived delayed approval time as a constraint. This delayed approval time is closely linked to the bureaucracy involved in loan processing. For example, the loan form has to be passed on from one office to another for approval and this takes months for the loan to gain approval. Most times farmers receive approval for loan applied for months after the planting season has expired, and this causes a setback in their farm output and income as well. Meanwhile, the 99.1 percent who acknowledged delayed approval time recorded in this study is far above 52.3 percent reported by Asogwa *et al.* (2014) for farmers in Benue state, Nigeria.

Also, 97.8% revealed that loan acquisition involves complicated procedures. This is due to the fact that commercial loan processing can really be exhaustive and truly complicated, involving significant amount of paper work and documentation. This most times wears out the farmers' patience, thereby causing them to lose interest in the loan application. The 97.8% recorded here is far above the 37.7 percent reported by Asogwa *et al.* (2014) for farmers in Benue state, Nigeria.

Another 90.3% see high interest rate as a major hindrance to loan acquisition from financial institution. This finding may not be unconnected with the fact that agriculture is a capital intensive business in which a high interest rate on loan would only further increase the farmers' production cost, thereby leaving the farmer with little or no profit after loan repayment. This finding agrees with Oladele (2013) who found that 71.4% of rice farmers in Abeokuta site high interest rate as a constraint limiting them from accessing loan.

Furthermore, 29.1% indicates that insufficient disbursed amount constitute a major constraint in loan acquisition. Factors such as farmers' poor financial history, low assets base of the farmers, and insufficient loanable funds may prevent farmers from obtaining the exact amount of loan they have applied for with a financial institution. This insufficient disbursed amount of loan might limit their capacity to finance their farm investment plans, thereby affecting farm output and productivity negatively. This finding is supported by Oboh and Ekpebu (2011) who found a significant difference between the mean value of loan supply and mean value of loan demanded among arable crop farmers in Benue state.

The result further revealed that 28.1% perceived distance to financial institutions as their major constraint in accessing loan. Difficulty in accessing financial institutions may be due to the fact that most financial institutions are cited in urban area very far away from the farmers who reside and farm mostly in the rural areas where roads are impassable. This inability of the farmers to access financial institutions might negatively impact on their farm output and in turn their income. This finding concurs with the finding of Ademiluyi *et al.* (2011) who noted that distance to loan source is a serious constraint to farmers in accessing loan.

Lack of information was the last but not the least constraint acknowledged by 26% of the respondents. This is not surprising as most of the financial institutions granting loan to farmers are located in the city far away from farmers. In addition, other means of communications such as newspapers, magazine and agricultural publication on loan acquisition is short supply in the rural area. Infrequent agricultural extension visit on the farmers has also contributed to shortage of information on loan acquisition by the farmers. This is serious because awareness of the existence of agricultural loan facilities places the farmers in a better position to seek for loan facilities. This agrees with Ikani and Ayegba (2013) who reported lack of information as a constraint facing rural farmers in Nigeria.

Table 4: Constraints of respondents accessing agricultural loan

Variable	Frequency	Percentage*
Delayed Approval Time	225	99.1
Lack of Collateral	226	99.6
Lack of Guarantor	226	99.6
Complicated Procedures	222	97.8
High Interest Rate	205	90.3
Lack of Information	59	26.0
Distance to Financial Institutions (Banks)	65	28.6
Insufficient Disbursed Amount	66	29.1

Source: Field Survey, 2015

* Multiple Responses existed, hence > 100%

CONCLUSION AND RECOMMENDATIONS

Evidence from this study has shown that rice farmers in Benue State have very high affinity for loan acquisition. Most of them, however, were unable to access loans from formal institutions compared to non-institutional sources due to constraints imposed by socio-economic factors, such as age, household size, farm size, membership of cooperatives, farm income, lacks of guarantors and collaterals, high interest rate and complicated loan procedures. These factors must be addressed, if loan acquisition by small-scale rice farmers in the state is to be enhanced. There should be a deliberate policy to ensure that rural farmers have access to adequate loan facilities at a soft interest rate from financial institutions, giving farmers low incomes. Also, the process of loans acquisition should be simplified in order to attract and motivate the intended users, most of who are illiterates, while efforts should be made to create more awareness about the existence of formal agricultural loan among small-scale farmers in the rural areas, through agricultural extension education.

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