

Analysis of Factors Influencing Access to Formal Loan Among Small-scale Swamp Rice Farmers in Obubra Local Government Area, Cross River State, Nigeria

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Abstract: This study analyzed the factors influencing access to formal agricultural loan among small-scale swamp rice farmers in Obubra Local Government Area in Cross River State, Nigeria. Data were obtained from 120 respondents by using multi-stage random sampling technique. Descriptive statistics and logit regression model were used to analyze the data. The results showed that majority (62.5%) of the farmers were males, about 40% were aged between 31-40 years, married (68.33%), had household size of 7-9 persons (51.67%), had secondary education (51.67%), had farm sizes of 1-2ha (50.83%), had farming experiences of 11-20 years (45%) and only 30.83% had annual farm income of between ₦51,000.00 and ₦100,000.00. The logit regression analysis revealed that gender, farm income, household size, education and collateral positively influenced the probability of farmers' access to loan at 1% significant level respectively. Marital status, farming experience and farm size positively influenced access to loan at 5%, 5% and 10% respectively. The major constraints respondents faced in accessing loan are long period of processing loan applications, problem of getting collateral and high interest rate while the major constraints they faced in rice production are crop destruction by cattle, low yield as a result of pests and diseases and low yield as a result of poor soil. The Federal Government should enact law that will motivate the cattle herders to compensate any farmer whose crops have been destroyed or eaten by their cattle and banks should process loan applications on time so that the loan will be disbursed to farmers at the appropriate time.

Keywords: Analysis, Factors, Access, Formal, Loan, Swamp Rice

1. Introduction

One of the major problems confronting small and medium-scale farmers in Nigeria is poor access to cheap, affordable and adequate credit. In Nigeria, the small-scale farmers produce the bulk of the domestic agricultural output Adeyonu, Ajiboye, Isitor and Faseyi [1]. Access to credit is regarded as one of the key elements in raising agricultural productivity [2]. Availability of adequate and timely credit help in expanding the scope of operation and adoption of new technologies, enhance the purchase and use of improved inputs and facilitate other up-stream and down-stream operations in agriculture [3]. Most farm households depend on credit because credit

provides cash reserves required to invigorate the process of production and consumption in the next production season. The development process of the agricultural sector can be enhanced by the ease with which credit is obtained by farmers. To the average farmer, credit provides a means of transfer of assets and wealth or allows him access to the use of these [4].

According to [4] the main function of credit in smallholder farming is that it opens greater opportunities for the acquisition of inputs. Through this way credit could effectively function to overcome agricultural stagnation in developing countries. The term agricultural credit according to [5] includes all cash advances to farmers and service production activities relating to agriculture. It is a vehicle for improving agricultural technology.

Agricultural credit can also be referred to as loans extended to farmers for production, storage, processing and marketing of farm products. It is one of the fundamental ingredients of sustainable agricultural production, as such, its accessibility and demand is among the pre-requisites for attaining the national goal of reducing rural poverty and ensuring self-food sufficiency in the country [6, 7]. Such credit can be short, medium or long term depending on its duration. Credit institutions range from well-developed and large-sized commercial banks to localized small cooperatives. It can also be formal or informal.

According to [8], a household is said to have access if it is able to borrow from a credit source (commercial banks, cooperative societies, money lenders, and so on). The extent of access to credit is measured by the maximum amount a household can borrow at a time from a given source. According to [9], access to agricultural micro-credit remains a critical challenge to smallholder farmers in many developing countries including Nigeria. This is because smallholder farmers often require small loans which are difficult to administer while majority of them also lack the needed collateral to be able to borrow from formal sources. Where collateral requirements are met, the small size of potential borrowers always seems to exclude others from borrowing. Consequently, smallholder farmers have been marginal participants in the credit market in many developing countries. As noted by [10], access to credit is the topmost priority of smallholder farmers in Nigeria where agriculture is the main economic activity.

The agricultural sector is dominated by small-scale farmers in Nigeria. They engage in subsistence agriculture. They accounted for more than 90% of the nation's agricultural output. They cultivate less than 2 ha of farmland [11]. According to [12], the agricultural sector is characterized by preponderance of small-holder farmers and their families, who produce about 90 percent of the staple food requirements of the ever-increasing population. They play a very important role in promoting the nation's economic growth and development. These small-scale farmers are sinking deeper and deeper into poverty, especially in sub-Saharan Africa and now account for three quarter of the world-poor. Promoting the growth of this sector is the most effective way to fight poverty [13-15, 4]. Furthermore, Nigerian farmers face huge challenges in accessing farm credit, farm inputs and marketing their products. They are trapped in a vicious cycle of poverty as a result of low productivity [16, 4]. In order to remove these challenges, farmers should be provided financial support to expand their production level.

Rice (*Oryza sativa*) is one of the major food crops produced by Nigerian farmers. It is the most important cereal in the world with and a source of prime income to small-scale farmers in Nigeria. Most rice farmers in Nigeria are small-scale farmers faced with enormous difficulties in accessing loan facilities due to inadequate bank branches, late disbursement of agricultural loans, collateral requirements, filling of many forms, diversion of agricultural loans by the banks' staff for non-agricultural purposes and inability of the banks to reach small-scale farmers at the grassroots [4].

Ugbajah and Ugwumba [17] asserted that one of the problems confronting small-scale farmers in Nigeria is inadequate capital. Evidence has shown that inadequate capital and/or lack of access to credit has been a major problem to small-scale and/or poor farmers [18]. According to [17] efforts made by the rural farmers to get financial assistance are always constrained by unnecessary strings attached to the credit services, especially collaterals used for assessing the borrower's credit worthiness; delay in release of loan and unfavourable repayment terms for agricultural based activities by commercial banks [19]. This study specifically, therefore, identified the socio-economic characteristics of farmers, assess the extent of loan accessibility among the farmers, analyze the influence of socio-economic factors on credit accessibility among the farmers and identify the constraints faced by farmers in accessing loan and constraints faced in swamp rice production in Obubra Local Govern Area.

2. Methodology

2.1. Study Area

The study was conducted in Obubra Local Government Area of Cross River State. Obubra is located in the Central Senatorial District of Cross River State and lies between longitude 7°55'E and 8°10' E of the Greenwich Meridian and latitude 5°4' E and 6°10' N of the equator. It has a population of 134,255 people and occupies a land mass of 1,086 km² [20]. Obubra is made up of eleven council wards and three clans namely; Adun, Osopong and Okum.

The inhabitants are predominantly farmers. The major crops they grow are swamp rice, cassava, and yam though they grow other crops like sugarcane, sweet potato, vegetables, oil palm, oranges, plantain, banana and cocoa. The farmers particularly grow swamp rice because they are blessed with abundant swampy areas. They rear animals like sheep, goat, pig and poultry birds and engage in fishing because of the passage of Cross River which stretches across the Local Government Area.

2.2. Sampling Technique

Multi-stage random sampling technique was employed to select small-scale swamp rice farmers during the 2016/2017 farming season. The first stage involved random selection of three villages from each of the three clans giving a total number of nine (9) villages. The villages were: Ovonum, Ofodua, Ofatura, Apiapum, Ohana, Ochon, Ofunbongha 1, Ofunbongha 11 and Ogurude. The second stage involved random selection of 154 swamp rice farmers proportionate to size from a list of 770 swamp rice farmers from the nine villages. The list of swamp rice farmers was obtained from the ADP Extension office in the Local Government Area. Only 120 respondents provided meaningful information that was used for analysis.

2.3. Data Analysis

Data gathered on socio-economic characteristics of

farmers, extent of access to loan, constraints faced by farmers in accessing loan and constrained faced by farmers in swamp rice production were analyzed using simple descriptive

statistic. Logit regression model was used to analyze the factors influencing access to loan among farmers. The logit regression model is explicitly expressed as follows:

$$\ln Y \left[\frac{P_i}{1 - P_i} \right] = Z_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \dots - U_i$$

Where,

Y = is a binary variable defined as 1 if a farmer has access to loan and 0 if otherwise

P_i = Probability of access to loan (1)

1-P_i = no access to loan (0)

Ln = Natural logarithm function

Z_i = log of odds

X₁ = gender (male = 1, female = 0)

X₂ = age of household head (years)

X₃ = Marital status (married = 1, single = 0)

X₄ = Farm income (₦)

X₅ = Household size (Number)

X₆ = Education level (years)

X₇ = Farm size (ha)

X₈ = Presence of collateral (yes = 1, no = 0)

X₉ = Farming experience (years)

U_i = error term

β₁, β₂, …, β_i are coefficients.

livelihood from the loan given to them, thereby threatening their ability to repay the loan. More so, since they are smallholder farmers they may have difficulty in getting access to adequate loan from formal sources because of the small nature of their farming and inability to meet the collateral requirement. This is in agreement with the findings of [4] who asserted that banks prefer giving loan to medium and large scale farmers because of high management cost on micro loans.

Table 1. Socio-economic characteristics of respondents.

Variable	Frequency (n = 120)	Percentage (%)
Gender		
Male	75	62.5
Female	45	37.5
Age (yr)		
21 – 30 years	12	10.00
31 – 40 years	48	40.00
41 – 50 years	37	30.83
51 – 60 years	18	15.00
Above 60 years	5	4.17
Marital status		
Single	18	15.00
Married	82	68.33
Divorced	20	16.67
Household size		
1 – 6 persons	48	40.00
7 – 9 persons	62	51.67
10 persons and above	10	8.33
Education level (yr)		
Never attended school	11	9.17
Primary education	29	24.16
Secondary education	62	51.67
Higher education	18	15.00
Farm size (ha)		
Less than 1 ha	28	23.34
1 – 2 ha	61	50.83
Above 2 ha	31	25.83
Farming experience (yr)		
1 – 10 years	36	30.00
11 – 20 years	54	45.00
Above 20 years	30	25.00
Annual income (₦)		
Less than ₦50,000	13	10.83
₦51,000 – ₦100,000	37	30.83
₦101,000 – ₦150,000	35	29.17
₦151,000 – ₦200,000	21	17.5
Above ₦200,000	14	11.67
Other crops planted		
Cassava	39	32.50
Yam	41	34.17
Maize	21	17.50
Vegetables	19	15.83
Membership of cooperative		
Yes	82	68.33
Presence of collateral		
Yes	89	74.16

Source: Field data, 2017.

2.4. Hypothesis Testing

A single null hypothesis was formulated and tested to guide the research major objective.

H₀: Some socio-economic factors do not have significant effect on access to loan by rice farmers. Chi-square (X²) was used to test the hypothesis.

3. Results and Discussion

3.1. Socio-economic Characteristics of Respondents

The socio-economic and demographic profiles of the respondents presented in Table 1 indicate that most of the swamp rice farmers (62.5%) were males, 40% were aged between 31 and 40 years and 68% were married. Majority (51%) had between 4-6 persons in their households and attended secondary schools (51%). About 51% cultivated between 1 and 2 ha, 45% had 11 – 20 years of farming experience with about 31% having between ₦50,000 – ₦100,000 annual farm income. Majority 68% belonged to cooperative societies. From the foregoing analysis, it can be inferred that the sampled farmers generally were small-scale farmers, fall within the active farming age and with long years of farming experience. However, because majority were married with large household size and low annual income they need to gain access to adequate loan facility. This could help improve their farm output, farm income and living standard. These results also indicate that since majority were married they are likely to incur more expenditure on family upkeep from the loan facility. This result is in harmony with the study carried out by [21] who reported that married farmers would incur extra expenditures for family

3.2. Extent of Access to Loan by Respondents

As contained in Table 2, majority of the respondents (40%) applied for relatively large amounts above ₦200,000.00 but only 8% received loans above N200,000.00. About 42% of the respondents received ₦100,000.00. However, the average values of loan applied and received were ₦169,583.33 and

₦103,333.33. This result implies that the amount of loan received was lower to the amount applied by ₦66,250.00. This finding is in consonant with the work of [22] who found a significant difference between the mean of loan supplied and mean of loan demanded among arable crop farmers in Benue state.

Table 2. Distribution of respondents according to amount of loan applied and received.

Size of loan (₦)	Amount Applied		Amount Received	
	Frequency	%	Frequency	%
< 50,000		-		-
51,000 – 100,000	24	20	50	41.67
101,000 – 150,000	25	20.83	42	35
151,000 – 200,000	23	19.17	18	15
>200,000	48	40	10	8.33
Total	120	100	120	100

Source: Field data, 2017.

3.3. Factors Influencing Access to Loan by Respondents

Table 3 presents the logit regression results of the socio-economic factors influencing rice farmers' access to formal loan in the study area.

Table 3. Logit Regression Results of Factors Influencing Access to Loan.

Variables	Coefficient	Standard error	Wald coeff.	Exponential
Constant	37.157	0.140	1.252	0.855
Gender (X ₁)	5.404***	0.040	2.354	0.765
Age (X ₂)	-5.864**	0.349	-0.908	0.876
Marital status (X ₃)	3.345**	0.234	1.342	0.234
Farm income (X ₄)	6.543***	12.453	1.311	0.345
Household size (X ₅)	1.647***	2.345	0.456	0.234
Educational level (X ₆)	4.127***	0.989	0.289	0.134
Farm size (X ₇)	18.619*	2.568	0.976	1.234
Presence of collateral (X ₈)	21.651***	3.456	3.876	0.235
Farming experience (X ₉)	13.111**	0.999	-2.111	2.560
Cox & Snell R ²	0.712			
Nagelkerke (adjusted R ²)	0.843			
Log-likelihood test	0.002			
Chi-square	165.654*			

Source: Field data, 2017.

*, **and*** are significant at 10%, 5% and 1% levels of probability respectively.

The Cox & Snell R² value of 0.712 indicates that 71% of the probability of farmers to access loan is explained by the explanatory variables used in the logit model. The Nagelkerke R square (adjusted R²) was 0.843, indicating a strong relationship of 84.3% between socio-economic characteristics of the respondents and access to loan.

The value of chi-square (165.654) revealed that the model was significant at 10% 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.

Results of the logit model show that gender (X₁), farm income (X₄), household size (X₅), education (X₆) and collateral (X₈) positively increased the likelihood of farmers' access to loan at 1% significant level respectively.

Furthermore, marital status (X₃), farming experience (X₉) and farm size (X₇) positively influence access to loan at 5%, 5% and 10% respectively while age (X₂) of farmers negatively influence access to loan at 5% significant level. This shows that access to loan decline with age. This means that as age increases, farmers experienced decline in their physical strength and would likely become less enthusiastic to continue in farming contrary to when they were young and energetic. This would discourage any interest in increasing production level and definitely reduce the probability to access loan. This result agrees with the findings of [9] who asserted that age of farmers negatively impacted access to loan.

The positive coefficient of gender (X₁) that was significant at 1% meant that there was a higher probability that both male and female farmers had greater chances of accessing

loan. Farm income (X_4) positively and significantly influenced the chances of farmers' access to loan. Increase in farm income may build the lenders' confidence on the farmers capacity to repay anticipated loans. This result is further corroborated by the findings of [23] who revealed that farm income had a significant and positive influence on small-scale rice farmers' in loan acquisition in Benue State, Nigeria. They inferred that farm income is a strong indication for high productivity which can significantly boost the zeal of farmers' in loan acquisition. The coefficients of other explanatory

variables like marital status (X_3), household size (X_5), education (X_6), farm size (X_7), presence of collateral (X_8) and farming experience (X_9) that are positive and significant imply that increase in these variables would increase the chances of farmers' access to loan. This will invariably lead to increase in the farmers' output. This result is concordant to the findings of [24] who asserted that farm size, farming experience and farm income had positive influence on the probability of accessing formal credit among small-scale farmers in Kogi State, Nigeria.

3.4. Constraints Rice Farmers Faced in Accessing Loan

Table 4 presents the findings on the constraint rice farmers faced in accessing loan in the study area.

Table 4. Constraints rice farmers faced in accessing loan.

S/N	Constraints	Yes		Rank
		Freq.	%	
1	Too many forms to fill	72	60.0	7 th
2	Late disbursement of loan	82	68.3	5 th
3	Long distance from house to loan source	66	55.0	8 th
4	High transport cost to and from loan source	45	37.5	9 th
5	Problem of getting guarantor	88	73.3	4 th
6	High interest rate	90	75.0	3 rd
7	Cumbersome loan application procedure	78	65.0	6 th
8	Little or no supervision by loan officers	36	30.0	10 th
9	Problem of getting collateral	92	76.7	2 nd
10	Long period of processing loan applications	99	82.5	1 st

Source: Field data, 2017.

Table 4 reveals the constraints that swamp rice farmers faced in accessing loan. In ranking order, the major constraints are long period of processing loan applications (82.5%), problem of getting collateral (76.7%) and high interest rate (75%) while the minor constraints are long distance from house to loan source (55%), high transport cost to and from loan source (37.5%) and little or no supervision by loan officers (30%) respectively. Long period of processing loan application always results in late disbursement of loan with concomitant effect of loan diversion

and default. For effectiveness of formal loan administration in the study area, these factors need to be given due consideration.

3.5. Constraints Faced by Rice Farmers in Rice Production in the Study Area

The findings on the constraints to rice production by rice farmers in the study area are as presented in Table 5.

Table 5. Constraints faced by rice farmers in rice production in the study area.

S/N	Constraints	Yes		Rank
		Freq.	%	
1	Inadequate farmland	79	65.3	5 th
2	Low yield as a result of poor soil	82	68.3	3 rd
3	Low yield as a result of pest and disease	87	72.5	2 nd
4	Low yield as a result of excess rainfall/drought	67	55.8	10 th
5	Difficulty in getting enough fertilizer to buy	74	61.7	8 th
6	Difficulty in getting enough seeds to buy	75	62.5	7 th
7	High cost of fertilizer	68	56.7	9 th
8	Crop destruction by cattle	100	83.3	1 st
9	Inadequate farmland for expansion	79	65.3	5 th
10	Unfavourable market price after harvesting	81	67.5	4 th

Source: Field data, 2017.

Table 5 reveals that the major constraints that farmers faced swamp rice production in the study area. In ranking order, they are crop destruction by cattle (83.3%), low yield as a result of pests and diseases (72.5%) and low yield as a result of poor soil (68.3%) while the minor constraints are difficulty in getting enough fertilizer to buy (61.7%), high cost of fertilizer

(56.7%) and low yield as a result of excess rainfall/drought (55.8%). The problem of crop destruction by cattle has often resulted in clashes between the Fulani cattle herders and crop farmers across the country. This is because whenever the cattle graze the cropped farmland, the herders do not compensate the farmers for the damages on their crops.

4. Conclusion

This study discovered that majority of the swamp rice farmers (40%) applied for relatively large amounts (above ₦200,000.00) but only 8% received loans above ₦200,000.00. More so, gender (X_1), farm income (X_4), household size (X_5), education (X_6) and collateral (X_8) positively increased the likelihood of farmers' access to loan at 1% significant level respectively while marital status (X_3), farming experience (X_9) and farm size (X_7) positively influence access to loan at 5%, 5% and 10% respectively. Only age (X_2) of farmers negatively influence access to loan at 5% significant level.

The major constraints farmers faced in accessing loan include long period of processing loan applications (82.5%), problem of getting collateral (76.7%) and high interest rate (75%). Furthermore, major constraints faced by farmers in swamp rice production are crop destruction by cattle (83.3%), low yield as a result of pests and diseases (72.5%) and low yield as a result of poor soil (68.3%).

5. Recommendations

In order to end the killings as a result of clashes between the cattle herders and crop farmers, the Federal Government should enact law that will motivate the cattle herders to compensate any farmer whose crops have been destroyed or eaten by cattle. The State Government should make agro-chemicals available to farmers at subsidized rate. Banks should process loan applications on time so that the loan will be disbursed to farmers at the appropriate time that the farmers will use it for farm operations. This would go a long way to reduce loan diversion and default among farmers.

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