

Analysis of Factors Influencing Loan Acquisition Among Small Scale Rice Farmers in Kazaure Local Government Area, Jigawa State, Nigeria

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Abstract

The research was designed to analyze the factors that determine loan acquisition by rice farmers in Kazaure Local Government Area, Jigawa State, Nigeria. The study used primary data collected through interview schedule with the help of structured questionnaire from 215 randomly selected rice farmers. Data collected were analyzed using simple descriptive statistics and the appropriate form of multiple regression models. Results from the analysis showed that the farmers were in their active age, educated and experienced. About 69% of the farmers did not have access to formal loaned funds. Interest rate, farm input, farm size and loan times significantly affected loan acquisition. The major factors that influenced loan acquisition were; delays in release of funds, tedious documentation process, no acceptable collateral and long distances to make loan requests. Financial institutions were encouraged to grant loans on for timely supply of farm inputs and at affordable interest rate. Lending agencies should advice the respondents on appropriate farm size and loan to meet up with the farm needs.

Keywords: Loan, Kazaure, loan disbursement, financial institution, loan acquisition, Jigawa

INTRODUCTION

Agriculture remains a major component of the economies of many developing countries. The sector plays an important role in the provision of raw material, food and strengthening the economies of the respective countries. Studies have shown that a strong and efficient agricultural sector has the potential to enable a country feed its growing population, generate employment, earn foreign exchange and provide raw materials for industries (Toby, 2014; Nnamocha, 2015). The agricultural sector dominates the rural economy which in turn is populated by small-holding rural households. By implication, these small-hold farms function as an engine of industrial growth and the development of national economies for developing countries. This scenario of the agricultural sector is not different with the Nigerian economy.

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The reason is that the Nigerian economy is populated by small scale farmers. Though many actors in the agricultural sector are small scale, the sector contributes about 40% of gross domestic products (GDP) and employ about 65% of the workforce in the country (Kamil *et al.*, 2017).

Rice remains not only an important staple crop within the Nigeria polity, but a major component within the agricultural sector in the country. The crop is an essential food crop for human nutrition and caloric intake the world over. Studies show that about 480 million metric tons of milled rice are produced annually (Raymond and Njiddari, 2021). While China and India account for about 50% of total rice produce annually (Muthayya *et al.*, 2014), Nigeria produces 3.7 million tons each year while consumption stands at 6.4 million tons (Erhie, 2018). In an attempt to meet up with the shortfall given increasing demand, the crop is imported while attempts are made to improve on production. Increase in rice production may contribute to the development of producing communities (Durodola, 2014). Increased rice production is therefore a panacea to attenuate the effect of hunger and food scarcity as well as the effect on economic development. Increase in population pressure on agricultural land availability and the complex link of climate change on agricultural production has negatively affected agricultural production leading to increasing levels of poverty. This scenario of dwindling agricultural output is premised mainly on inadequate provision of production inputs. The shortage of loan availability to farmers had been identified as a critical factor that explain the declining levels in agricultural output (Ettah, 2010). Insufficient credit resources affect the productivity of the farmers given that many farmers operate on a small scale and lack adequate finances to procure improved seed, agrochemicals, hire labour, transport both inputs and produce and market the processed product. The big gap between the demand for and supply of loans to farmers for agricultural activities may explain the shortage of the credit resource in agricultural production.

Different factors influence access to loans to deserving farmers. Some of the attributes are loan availability, accessibility, input prices, and the behaviour of financial institutions toward the release of such funds (Ogah *et al.*, 2015). These circles of events on agricultural loans present the farmers (especially small-scale farmers) with challenges that restrict access to agricultural loans and agricultural credit facilities. Loans according to Mgbebu and Achike (2017) is needed to increase the level of production thereby breaking the vicious cycle of low productivity. This emphasizes the importance of loan in the form of farm credit resource as an important factor needed to improve farm investment. However, efforts to deliver formal agricultural loans and funds to the farmers in the country had largely failed over time (Otunaiya *et al.*, 2014). The perceived risk of loan default and the inability of the farmers to provide the needed collateral restrict financial institutions from providing loans to the farmers while high transaction cost discourages small scale farmers to access loans from commercial banks. To reduce the effect of some of these factors on farmers and financial institutions, the government established agricultural credit schemes which aimed to make agricultural funds accessible to farmers. To ensure the effectiveness of agricultural credit availability, the government (through the central bank) introduced regulations that required commercial banks to allocate a stated percentage of their operating capital to finance the operations of the small-scale farmers (Henri-Ukoha *et al.*, 2011). To ensure that many more small-scale farmers benefit from access to agricultural fund availability, the government established specialized institutions like the Nigeria Bank for Commerce and Industry (NBCL), Nigeria Agricultural and Cooperative Bank (NACB), Agricultural Credit Guaranteed Scheme (ACGS) and the Nigerian Industrial Development Bank (NIDB). Despite the effort of the government to meet

up with increased demand for agricultural loaned fund by these formal financial institutions, the increased demand for agricultural credit outweighs its supply (CBN, 2002).

There is no doubt that agricultural loaned fund in Nigeria is an important determinant in the field of agricultural production. However, the ability for the farmers to acquire and pay back these funds as agreed is replete with challenges. In some instances, factors that restrict farmers' access to agricultural loan facilities need to be identified. This emphasizes the need to put in more efforts to improve on the rice production enterprise by extending loanable credit availability to the farmers. In respect to this, it is important to identify the factors that influence access to agricultural loan to the farmers. In view of this, it becomes necessary to study the factors that influence loan acquisition by the farmers from financial institutions in the area. The paper therefore intends to achieve the following objectives;

- i. Describe the socioeconomic characteristics of the farmers,
- ii. Identify the source of funds for the farmers,
- iii. Determine the factors influencing access to agricultural loans,
- iv. Identify the challenges to loan acquisition by rice farmers.

This study will help agricultural loan operators to know how and to whom loaned funds should be extended to. Rice farmers will know how best to utilize agricultural loans given the identified challenges. The study will form additional source of reference to students and researchers and act as a base for further studies on related subjects.

Materials and Method

The study was conducted in Kazaure Local Government Area (LGA) of Jigawa state Nigeria. According to Isma'il *et al.* (2013); Musa and Bello (2016), Kazaure is located between longitude 12° 30' to 12° 45' North and latitude 8° 15' to 8° 30' East and covers a land area of about 1780 Km². The LGA is bordered to the north and west by Katsina state and to the south by Kano state (Gudaji and Danborno (2021). The study area has a population projected from the results of the 2016 population to be 215,494 people. The area is made up mainly of the Sudan savanna vegetation. Rainfall begins from May to October. The annual rainfall is 600 mm with the highest during the months of July and August (corresponding to period of rapid growth and development of rice). Temperatures during the dry season can be as high as 39°C except in December and January when it could be as low as 20°C, with an average of 25°C in the rainy season (Isma'il *et al.*, 2013). The people are mainly farmers engaged in rainy and dry (irrigation) season farming.

Sampling procedure

The study used a 2-stage sampling procedure. In the first stage, a total of 6 villages (Daba, Dabaza, Gumuma, Gada, Gezoji, and Gora) were selected from the 11 villages. The selection was based on intensive rice production and access to credit facilities by the farmers. Then, a simple random sampling method was used to select respondents proportionally from each of the selected villages following the works of Yamane (1967) in equation (i).

$$n = \frac{N}{1+N(e)^2} \dots\dots\dots (i)$$

Where; n = Sample size, N = Sample population; e^2 = Margin of error; Confidence interval 95%. Based on this, a total of 215 farmers were selected for the analysis.

Table 1: Sample size selection for rice farmers

Villages	Sample frame	Sample size
Daba	60	28
Dabaza	58	27
Gumuma	82	38
Gada	120	56
Gezoji	74	34
Gora	70	32
Total	464	215

Data Collection

The data for the study were collected from both primary and secondary sources. Primary data were collected by interview schedule through the use of structured questionnaires. Data collected include: socio economic characteristics of the farmers, factors that influence farmers demand for loaned funds, factors that constrain farmer’s access to credit such as security, farming experience. Secondary data were obtained from journals of agriculture, agricultural reports, published books, JARDA and CBN reports. Data from financial lending agencies will include information that influence loan acquisition by the farmers.

Techniques of data analysis

The data collected for this study was analyzed with the help of descriptive statistics and multiple regression technique. The descriptive statistics model was used to analyze the socioeconomic characteristics, source of funds and challenges face by farmer to acquire loan for rice production in the study area. The statistical technique made use of frequency table, means, standard deviation, and percentages. The multiple regression technique was used to examine the factors influencing access to loans in the study area. The ordinary least square technique was used to estimate the parameters of the model.

Model specification

The multiple regression functional form model was presented in the implicit form adopting the works of Ettah (2010) in equation (ii) as:

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6 + e) \dots\dots\dots (ii)$$

The explicit form of the equation is presented following the works of Uyanık and Güler (2013) in equation (iii) as;

$$Y = \beta_0 + \beta_1x_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + e\dots\dots\dots (iii)$$

Where; Y = Amount of Loan acquisition (Naira), X_1 = Age (years), X_2 = Household size, X_3 = Interest rate (percentage), X_4 = Farm input (Naira), X_5 = Farm size (hectares), X_6 = Loan times, e = The error term

RESULTS AND DISCUSSION

Socio-economic characteristics of farmers

Table 1 shows the distribution of respondents according to demographic, socio-economic and institutional characteristics of the respondents. The educational qualification of the farmers revealed that about 4.2% of the farmers had not attained any formal education. The results further revealed that about 49.3% and 42.8% attained primary and secondary education respectively while 3.7% attained tertiary education. This shows that about 95.8% of rice producers who acquired loans for rice production were literate. These results seem to contradict established literature on the educational attainment of farmers in the study area that shows that 31.88% of farmers in Jigawa state had not attained any form of formal education (Yahya, 2018). The high value for educational attainment in the study area here may

be explain following the sampling design that choose the peri-urban communities around where financial institutions are found (which excludes rural communities with poorly developed educational facilities and low school enrollment). Educational qualification is an important socio-economic factor since it influences the farmers' way of life and borrowing habits. The implication of the result is that a greater number of respondents in the study area can read and write. This shows that these farmers can adopt recommended lending packages in rice operations leading to increased yield and the propensity to save more to pay the loans. Nwibo and Nwakpu (2017) on their study on loan acquisition and repayment capacity of cooperative farmers in Ebonyi state had similar results.

Analysis of the results for marital status shows that 33.4% of the rice farmers were single. While 64.6% were married, 1.9% were either divorced or widow(er). The results show that majority of rice farmers were married. These results are important in that marital status of borrowers can be used to establish if farmers could have any distinct effect on loan in the study area. A study by Tchekpo *et al.* (2020) explained that the probability of loan default is high with married rice farmers given their responsibility at home. The reason is that married rice farmers cannot devote themselves fully to their activity and this negatively affects their borrowing and production outcome.

The results for age was also shown in Table 1. The results show that farmers were within the age bracket of 18 - 40 years and made up 52% of the total respondent while those between 41 - 60 years made up 41%. The rest of the respondents from 61 years and above made up the remaining 7% of the active working rice farmers. At between 18 - 60years, famers are at the peak of their productive ability and these group of farmers are ready the take risk in borrowing and using borrowed funds. The mean age of the farmers was 40.6 years which indicated that the farmers are still within their active, economic and productive age. The standard deviation was 13.5 years, which means that the most active age of the rice farmer ranged from 27 years below the mean age to 54 years (above the mean age). Beyond 60 years, the active physical capacity in rice production starts to drop as well as the ability to borrow and repay in time. The results for analysis of household size showed a mean of 7 people per house-hold. The standard deviation of 3 people means that most of the household sizes ranged from 4 to 10 people per household (which was viewed to be a large household size). Large households may provide free farm labour therefore helping the farmers in reducing cost associated with hired labour (providing the need for a loan in financing rice production). Larger household sizes may result to increase expenditure in the provision of social welfare (Ameh and Lee, 2022). Similarly, a study on household size by Liqiong *et al.* (2019) in China showed that household size affected household income, credit and influenced agricultural loans accessibility.

Results from the table showed that rice farmers have acquired an average of about 13.9 years in rice production with a standard deviation of 11.5 years. The implication is that rice farmers had a production experience that ranged from 2.4 to 25.4 years. The results can be explained in that the starting up of rice production may be costly in the first years. However, farmers with a longer period in farming experience usually borrow for specific activities like acquiring specific machinery and technology or to expand and improve on farm operations. These group of farmers are better placed to pay back any loan. Ubon *et al.*, (2016) in their study posited that farmers with farming experience are better placed to manage their farms well and produce enough to repay any loan funds. Results from the table further showed that on average, farmers met with agricultural extension agents about 2 times during the rice production period. A standard deviation of 1.9 times showed a range of 0 - 4 times shows that

some farmers did not meet with extension agents while others met with about 4 times with extension agent. The importance of contact with extension agents in agricultural production is in getting the necessary information that will improve the likelihood of obtaining credit. It allows farmers to benefit from training towards increasing the skills in rice production and loan resource management (Yehuala, 2008). Tchekpo *et al.* (2020) found that the probability of agricultural loan default was negatively linked to contact with extension agents.

Table 1: Socio-economic characteristics of rice producers

Item	Frequency	Percentage	Mean	Standard deviation
Educational qualification				
No formal education	9	4.2		
Tertiary education	8	3.7		
Secondary	92	42.8		
Primary	106	49.3		
Total	215	100.0		
Marital status				
Not Married	72	33.5		
Married	139	64.6		
Divorce /widow(er)	4	1.9		
Total	215	100.0		
Age (years)				
From 18 - 40	112	52	40.6	13.5
41 - 60	88	41		
61 - above	15	7		
Total	215	100.0		
Household size				
From 1 - 5	92	43	6.5	3.1
6 - 10	98	46		
11 - above	25	11		
Total	215	100.0		
Experience (Years)				
From 1 - 10	119	56	13.9	11.5
11 - 30	74	34		
31 - above	22	10		
Total	215	100		
Extension services				
0 - 2	137	64		
3 - 4	68	31		
5 - above	10	5	2	1.9
Total	215	100		

Source: Author's computation, 2022

Table 2 is a summary distribution of respondents based on sources of loaned funds. The results revealed that access to loans from formal credit institutions was low, as compared to respondents from informal sources. The results further revealed that about 1% of the respondents had no access to credit from any source. However, a greater majority (69%) received credit from informal sources, mainly from farmers and friends. This may be explained in terms of lack of collateral by the farmers and cumbersome paperwork discourage most of the framers. Other farmers may not accept loans from formal sources given the addition of interest rate which is against the culture of the study area. Ayat *et al.* (2020) had similar results on their study.

Table 2: Distribution of respondents based on source of funds

S/N	Credit source	Frequency	Percentage
A	Informal institutions		
1	Family and friends	148	69
B	Formal Institutions		
2	Cooperatives	32	14
3	Banks	34	16
4	No access	1	1
	Total	215	100

Analysis of Factors Influencing Loan Acquisition

To identify the factors that determine loan acquisition from formal and informal sources, the study utilized four functional forms of the multiple regression model. The results obtained from the analysis were fitted into the model and the results of the analysis are presented in Table 3. The table shows that the double-log functional form met the criteria and was chosen as the lead equation. The criteria adapted for the selection include the highest value of the coefficient of multiple determination (R^2 , being 49.3%), the conformity of coefficients with *a priori* expectations and having more significant variable coefficients. The estimated results of multiple regression model of the ordinary least squares (OLS) and the marginal effects are shown in the table. Six explanatory variables were considered in the multiple regression model. Four of the variables were found to significantly influence the probability that rice farmers in the study area will acquire loans and repay same with interest after the farming season. The significant variables were; interest rate, farm input, farm size and loan times. The other two variables (age and household size) had no significant effect on loan acquisition by smallholder farmers.

Detailed analysis of the results showed that farm input and loan acquisition times were positive and statistically significant. While farm input was significant at 5% level, loan requisition times was significant at 1% level. This imply that the greater the increase in the amount of input required by the farmers increases, the greater the need for an increase amount of loan received by the farmers (it is assumed that farmers that request higher amounts have bigger farms and practice intensive rice farming. Such category of farmers is bound to succeed if their farm operations are well funded). So also, as the number of times the farmers go to make request for loans increases, the amount of loan fund will be increased as well. The increase in number of times (to request for loans) shows the seriousness of the farmers towards loan funds. As the farmers increase the number of trips to financial agencies, such farmers were judged to be in urgent need and they were given a higher amount of the loans (Oyelade *et al.*,2019).

Interest charged was statistically significant but had a negative effect on loaned funds. The results show that as the interest rate increase, the amount requested as loan by farmers decreased. The results can be interpreted to mean that as interest rate charged on loaned funds to farmers increases, the amount of loaned funds by the farmers decreases. That will make less funds available for the farmers in the business of rice production, given the high interest rate. This will certainly lead to a lower income and may result to a reduced capacity to pay by the farmers. Farm size was negative but statistically significant at 1% level. This result shows that with an increase in farm size, there will be need for an increase demand for farm loans. However, the likelihood of farmers receiving increased loans may diminish as farm size increases showing that there are that influence access to agricultural loans by the famers.

Ameh and Lee (2022) in their study observed that the tendency to get loans increases with increase in farm sizes.

The age and household size of the farmers were positive but none had any significant effects on loan acquisition for rice production in the study area. This implies that the amount of loan acquired was not influenced by age or by the size of the farmers' household.

Table 3: Determinants of farmers' loan acquisition

Explanatory variable	Linear function	Semi - log function	Double-log function	Exponential function
Intercept	-8706.21 (-1.94) **	-7205.8 (-1.66) ***	-9363.51 (-2.08) **	3.07 (86.60) ***
Age	-1.58 (-0.71)	-119.96 (-0.63)	3.27 (0.93)	-7.28e-4 (1.12)
Household Size	10.54 (1.11)	44.03 (0.43)	15.36 (1.50)	0.01 (1.45)
Interest rate	-0.01 (-2.02) **	-0.01 (-1.84) **	-0.01 (-2.11) **	3.09e-7 (1.32)
Farm inputs	2184.24 (2.16) **	2009.51 (2.04) **	2311.78 (2.28) **	0.12989 (9.94) ***
Farm size	-53.10 (2.80) ***	-63.06 (-3.43) ***	-53.92 (-2.85) ***	-0.02 (2.61) **
Loan times	581.47 (12.97) ***	2187.81 (13.92) ***	578.84 (12.75) ***	-0.00237 -(0.69)
R ²	42.6	48.9	49.3	33.4
Adjusted R ²	38.7	44.7	48.1	31.5
F - value	29.8	34.3***	40.5 ***	17.4

Note: *, **, ***, indicate 10%, 5%, and 1% statistical significance. Values in parenthesis indicate t - values
Source: authors' computations, 2022

Major factors affecting loan acquisition by the farmers

Acquisition of loans was observed to be hindered by a series of factors. As shown in Table 4, about 55.82% of the farmers observed the prevalence of bureaucratic procedure leading to long periods to acquire loans. The perceived delays in loan acquisition was certainly aimed at enabling lending agencies to get more information on the beneficiaries and ascertain if they were credit worthy. The delays in acquiring loans, however, affected the management procedure. Also, about 27.9% of respondents identified limited collateral as a factor impeding loan acquisition. Rice farmers do not have the required resource base and an acceptable collateral to acquire loans. This is a major challenge given that the farmers are small-scaled with a limited resource base. Another challenge was the distance covered by the respondents to acquire the loan. When the institutions are not responding fast, the farmers quickly get discourage and this may affect the loan acquisition effort by the farmers. Another limitation was the complex documentation process where 33.95% identified as one of the major limitations.

Table 4: Major challenges on accessing borrowed funds

S/N	Items	Frequency*	Percentage*	Position
1	Delayed loan acquisition period	120	55.82	1 st
2	No access to collateral	60	27.91	3 rd
3	Long distance	45	20.93	4 th
4	Complex documentation processes	73	33.95	2 nd

* = Multiple response Source Author's computation (2022)

Conclusion

Results of socioeconomic analysis shows that 4.2% had not attained any formal educational institution showing a high level of literacy among the farmers. About 64.6% were married suggesting an availability of family labour. The mean age of the farmers was found to be

approximately 41 years. On average, household size was found to be 7 persons per household. The respondents were found to had been producing rice for around 14 years and these farmers were visited by extension for an average of 2 times for the period of the farming season.

Further analysis showed that 69% acquire loans mainly from the informal sector, 30% from the formal sector and 1% could not acquire any loan. Results of multiple regression analysis showed that the interest rate and farm size were negative but significantly influenced the amount of rice acquisition loans. Rice input and loan times were positive and significantly influenced loan acquisition. Analysis of challenges that affect farmers' acquisition of rice production loans showed that delays in releasing loans discouraged some of the farmers. The documentation process that precedes loan acquisition was tedious and discourages farmers to engage in the process. Most of the farmers do not have such assets that could be used as collateral to acquire the rice production loans. Long distances were identified as a challenge to acquire rice production loans

From the research findings, it was recommendations:

- i. Loans should be given to farmers with an average age of 41 years. The reason is that age and household size had a positive impact on access to loaned funds (though the effects was positive but not significant).
- ii. The loan repayment period should be made reasonable (increased) so as to enable the respondents to have a longer period to repay their loans.
- iii. Given that interested rate is significant but has a negative effect on acquisition of loaned funds, interest rates should be reduced to acceptable level for the farmers.
- iv. Given that farm size was significant but had a negative effect on acquired loans. Thus, farmers need training exploit available farms efficiently without farm size increase.
- v. Farm input was significant and positive. As a result, financial institutions should help the farmers to acquire commensurate loans so as to improve on their productivity level.

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