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# Perceived Factors Influencing Repayment of Agricultural Input Loans Among Rice Farmers in Kwara State, Nigeria

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**Abstract:** Default in the repayment of agricultural input loans hampers the flow of funds, discourages lenders from investing more in agriculture and impairs the supply of agricultural inputs towards better productivity of important food crops like rice. This research therefore examined the perceived factors influencing repayment of agricultural input loans among rice farmers in Kwara State, Nigeria. The research specifically described the socio-economic characteristics of the respondents, examined their perception on loan repayment and identified the institutional, economic and borrower-related factors that are perceived to influence loan repayment. A sample size of 180 rice farmers was obtained by using a three-stage sampling technique. Data analysis was done using both descriptive and inferential statistical tools. The study showed that rice farmers were of average age of 44 years, had average farming experience of 20.8 years and majority (65.6%) had low education. Their perception of loan repayment was average. All the farmers utilized their loans for farming, 55.6% repaid fully while 44.4 defaulted. Late disbursement of loan and high interest rate topped the perceived institutional factors that affect loan repayment while the economic factors were yield loss and low market prices and the major borrower-related factor was high household expenditure. The study concluded that age, education, income, farming experience, farm size, household size and amount of loan are related to loan repayment. The research also concluded that loan repayment is influenced by institutional, economic and borrower related factors. The study recommends: timely delivery of input loans; further extension education of farmers on better home management practices to reduce household expenditure; need for extension agents to work with research institutes to avail farmers improved varieties of rice to increase crop yield in order to enhance income and ease loan repayment; and lenders should prioritize experienced farmers in loan disbursement.

**Keywords:** Factors, Repayment, Agricultural Inputs, Loan

## 1. Introduction

Accessibility of finance is important towards the growth of the agriculture sector from subsistence to commercial production [24]. However, while access to credit by farmers is necessary, it is not sufficient to guarantee sustained improvement in production. Prompt loan repayment is needed to ensure a steady flow of funds, encourage the lending institutions to invest more in agriculture and motivate farmers towards better productivity. Default in loan repayment in developing countries has become a major challenge in agricultural credit administration. Banks are reluctant to lend to farmers as a result of the inherent risk of non-repayment of loans in the agricultural sector. The circumstances in which farmers access loans and the difficulty in repaying such loans can therefore not be ignored in order not to worsen the menace of hunger.

Agricultural input loans refer to all arrangements to avail the farmer of farm inputs such as improved seeds, fertilizers, agrochemicals, land preparation and farm labour finance in the time of need to be repaid latest when farm produce is sold. Agricultural input loans are indispensable in the quest to achieve the goals of increasing agricultural outputs and fostering the development of the agriculture sector because the farmers have limited financial capabilities to invest in agriculture [7, 31]. Agricultural input loans are inexorably linked to rice production, rice being the most important and fundamental staple food for about half of the people in the world and one of the most celebrated diets of the Nigerian people [27]. Nigeria is among the leading African countries in the production and consumption of rice and also one of the global leaders in the importation of rice [9]. It is therefore fitting that agricultural input loans are directed at rice production among many other crops and there is the need to ensure that these loans are promptly repaid.

Loan default by farmers makes it difficult for lenders to sustain the lending cycle. It is a disincentive to the lending institutions in their quest to refinance the defaulting farmers and their default refuels the vicious cycle of low productivity by causing avoidable setback to the implementation of appropriate lending plans and credit policies [24].

### *1.1. Objectives of the Study*

This study investigated the perceived factors influencing repayment of agricultural input loans among rice farmers in Kwara State, Nigeria. The study specifically:

1. described the socio-economic characteristics of rice farmers in Kwara State;
2. examined the perception of rice farmers on the repayment of agricultural input loans; and
3. identified the institutional, economic and borrower-related factors that affect loan repayment.

### *1.2. Hypotheses of the Study*

$H_{01}$: Socio-economic characteristics of rice farmers do not affect loan repayment.

$H_{02}$: There is no significant relationship between rice farmers' perception and loan repayment

## 2. Literature Review

### *2.1. Agricultural Finance*

Agricultural finance refers to the activities aimed at acquiring and using capital as a factor of production to access and manage other factors such as land, labour, capital, and entrepreneur and it is pivotal to agricultural development in developing countries [3, 15]. Finance is needed by farmers in the provision of inputs like improved seeds, fertilizers, agro-chemicals, land tillage, and irrigation facilities among others. Agricultural finance is therefore essentially a development strategy that serves as a channel for small, medium and large-scale farmers to access affordable funding platforms to boost productivity, hence it is one of the most important factors in attaining the objectives of agricultural productivity [26]. Prompt loan repayment is however very necessary for agricultural productivity and there are a number of factors that influence the repayment of loans.

### *2.2. Empirical Studies on the Factors Influencing Loan Repayment*

The factors that influence loan repayment are classified as: voluntary or involuntary factors; they are said to be voluntary when they are within the control of the borrower such as, lack of integrity, downright refusal to repay, the ill-informed belief that loans are grants, and involuntary when they are uncontrollable such as business failures, natural disasters and the effect of pests and diseases on crop yield; internal and external factors; and borrower characteristics, business characteristics, and loan characteristics [6, 28, 29]. These factors include the age of the borrower, the size of the farm, the experience of the farmer, income, interest rate, cost of application, loan amount, pledged security and the number of tranches in the repayment process. Others include: high living expenses; high interest; low prices for farm produce; inadequacy of loan advanced; poor marketing channels; absence of linkage between credit and marketing; unexpected financial problems; old debts; and lack of supervision by the lenders [14, 23]. Some of these factors are discussed below.

#### *2.2.1. Age and Experience of the Borrower*

The age of a borrower has consequences on the repayment of a loan and its effect on loan repayment can be ambiguous [16, 30]. A farmer's involvement in farming over the years gives him the requisite experience for better management and improved productivity. Authors have argued in favour of younger borrowers' propensity to repay loans based on their knowledge, venturesomeness, independence and openness towards new ideas while there are also dissenting opinions that, as farmers advance in age and their input in terms of labour for agricultural production declines, so does their keenness to repay loan [5, 8].

#### *2.2.2. Education*

Farmers' productivity increases proportionately with the level of their education because education gives them better disposition towards agricultural extension services and enhances their innovativeness. Education ensures borrowers are better able to understand complex instructions, keep adequate records and make the right business decisions. More educated borrowers may therefore have better loan repayment performances [20, 29, 30].

#### *2.2.3. High Interest Rate*

Interest rate plays an optimal role as an influencing factor in loan repayment. High interest rate causes avoidable increases in the amount of loan to be repaid, and its accumulation over the period complicates the debt condition of the borrower thereby delaying repayment or leading to downright default by farmers [12, 14].

#### *2.2.4. Loan Size*

The influence of the size of the loan on its repayment is a controversial topic among researchers. While some scholars agree that a bigger loan hinders repayment, others argue on the contrary. A school of thought believes that bigger loans brighten the chances of repayment by encouraging judicious use and improving production, leading to higher income and easier loan repayment while others argue that relatively larger loans from development-oriented institutions are characterized by reduced interest rates and lower chances of a repeat of loan, therefore, the low interest rate may encourage the borrower to delay repayment [10, 22].

### *2.2.5. Household Size*

Household size, the number of people that live in the same house (including attendants and servants) and share meals, can enhance or impair loan repayment and authors have divided opinions on this. Household size can have negative influence on loan repayment such that as household size becomes larger and household expenditure rises, loans might be diverted into household use thereby affecting its repayment [1, 8, 19, 30]. A contrary opinion however is that a large household size may provide family labour, consequently reducing labour expenses [3].

### *2.2.6. Extension Contacts*

Extension education includes the dissemination of information and knowledge on the advantages of loans and the need to repay promptly. Inadequate monitoring of farmers' credit use by extension agents can be harmful since the farmers' debts could pile up unbearably and lead to default in their loan repayment [2]. Experienced farmers who are well exposed to extension programs, are therefore better able to develop their credit use and management skills, are aware of the implications of loan default on the availability of loans in the next production season and are likely to repay loans promptly [31].

## 3. Methodology

The study was carried out in Kwara State, Nigeria. The state is within the Guinea Savannah Agro-ecological zone and occupies 36,825km$^2$ of land according the National Bureau of Statistics (NBS) reports of 2016. It has an estimated population of 3,192,893 as at 2016, partitioned into 16 Local Government Areas (LGA) with Edu and Pategi being the predominant rice producing LGAs [17]. A three-stage sampling technique was used to select respondents for the study. In the first stage, zone B of the Kwara State Agricultural Development Programme (ADP) comprising Edu and Pategi LGAs was selected purposively because of the preponderance of rice farmers in the zone. The second stage was a random selection of 25 percent of the 25 major rice growing communities from Edu and Pategi (4 from the 16 communities in Edu and 2 from the 9 communities in Pategi) to get a total of 6 communities. The third stage involved a proportionate random selection of 25% of the rice farmers who are registered with the Rice Farmers Association of Nigeria Kwara chapter (RIFAN) in the 6 communities to give a sample size of 180 respondents as shown in Table 1.

***Table 1.*** *Sampling Procedure and Sample Size.*

| LGAs in Kwara State | Purposive Selection of LGAs | No of Rice Producing Communities | Random 25% of 25 Communities | Registered Rice Farmers | Random 25% of farmers | Sample Size |
|---|---|---|---|---|---|---|
| 16 | EDU | 16 | Likpata | 107 | 27 | 180 |
| | | | Lafiagi | 168 | 42 | |
| | | | Bacita | 101 | 25 | |
| | | | Edogi-Dukun | 94 | 24 | |
| | PATIGI | 9 | Duku-Lade | 113 | 28 | |
| | | | Patigi | 135 | 34 | |

Source: Field survey 2023

Primary data was collected with the aid of interview schedule. Descriptive statistics was used for the socio-economic characteristics of the farmers, a five-point Likert scale was used for the perception of the farmers and the factors that influence loan repayment. The first hypothesis relating socio-economic characteristics to loan repayment was tested by Binary Logistic Regression while the second hypothesis between perception and loan repayment was tested by Pearson's Product Moment Correlation.

## 4. Results and Discussion

This section presents the analysis of data collected and discussions of the findings. It is divided into sub-sections based on the objectives and the hypotheses of the study.

***Table 2.*** *Distribution of Rice Farmers According to their Socio-economic Characteristics.*

| Variables | Frequency | Percentages | Mean | S. D. |
|---|---|---|---|---|
| Age (in years) | | | | |
| ≤30 | 12 | 6.7 | 44.03 | 9.41 |
| 31 – 40 | 67 | 37.2 | | |
| 41 – 50 | 59 | 32.8 | | |
| 51 – 60 | 33 | 18.3 | | |
| >60 | 9 | 5.0 | | |
| Sex | | | | |
| Male | 167 | 92.8 | | |
| Female | 13 | 7.2 | | |

| Variables | Frequency | Percentages | Mean | S. D. |
|---|---|---|---|---|
| Household Size | | | | |
| ≤3 | 33 | 18.3 | 7.20 | 4.07 |
| 4 – 7 | 67 | 37.2 | | |
| 8 – 11 | 59 | 32.8 | | |
| >11 | 21 | 11.7 | | |
| Level of Education | | | | |
| No Formal Education | 27 | 15.0 | | |
| Primary Education | 91 | 50.6 | | |
| Secondary Education | 52 | 28.9 | | |
| Tertiary Education | 10 | 5.5 | | |
| Farming Experience (years) | | | | |
| ≤10 | 22 | 12.2 | 20.76 | 9.34 |
| 11 – 20 | 85 | 47.2 | | |
| 21 – 30 | 46 | 25.6 | | |
| >30 | 27 | 15.0 | | |
| Average annual Income from Rice Farming (₦) | | | | |
| ≤150,000 | 5 | 2.8 | 425,500 | 166,022 |
| 150,001 - 300,000 | 41 | 22.8 | | |
| 300,001 - 450,000 | 74 | 41.1 | | |
| 450,001 - 600,000 | 36 | 20.0 | | |
| >600,000 | 24 | 13.3 | | |
| Size of Farm (Ha) | | | | |
| ≤2.0 | 38 | 21.1 | 3.48 | 1.38 |
| 2.01 - 4.0 | 103 | 57.2 | | |
| 4.01 - 6.0 | 31 | 17.2 | | |
| >6.0 | 8 | 4.5 | | |
| Frequency of Extension Contacts | | | | |
| None | 76 | 42.2 | | |
| Forth-nightly | 4 | 2.2 | | |
| Monthly | 3 | 1.7 | | |
| Bi-annually | 91 | 50.6 | | |
| Annually | 6 | 3.3 | | |

Source: Survey, 2023. S. D. = Standard Deviation

### *4.1. Socio-Economic Characteristics of the Respondents*

The socio-economic characteristics of rice farmers such as age, sex, household size, education, farming experience, average annual income, farm size and extension contacts are presented in Table 2 while marital status and religion are represented by figures 1 and 2 respectively.

The results in Table 2 show that majority (70%) of the farmers were between 31 and 50 years of age and the average age was 44 years. This implies that the farmers were in their middle age with enough vibrancy to face the tough challenges of rice farming [13, 21].

Rice farming in Kwara State is male dominated with most (92.8%) of the farmers being males. This is probably because of the tasking nature of rice cultivation and the gender belief that men are more suited for laborious tasks while the females are usually involved in seemingly less laborious farm activities such as harvesting, processing and sales of produce. The result is consistent with the widespread opinion that the male dominance of rice farming is due to the tedious nature of its farming operations [3].

Table 2 further shows that majority, (70%) of the sample had a household size between 4 and 11 people with a mean household size of seven members. The result indicates that household size was relatively high and this could be a burden on the household finance to the detriment of loan repayment. High household size could also be a blessing to loan repayment in the availability of labour for improved productivity. This result agrees with the opinion that a high household size could encumber loan repayment because of increased household expenditure [19, 30].

Results presented in Table 2 indicate that only 5.5% of the farmers had tertiary education, 15% had no formal education while as much as half (50.6) had just primary school education. The result shows a low level of education among the farmers and this could impair their understanding of good agricultural practices, lower their productivity and therefore reduce their loan repayment capabilities. Education is an important factor that shapes a farmer’s way of life by influencing their awareness, perception and adoption of innovations and better management practices that can bring about increase in their income [8, 18, 25].

Table 2 also shows that majority (72.8%) of the farmers had between 11 and 30 years of farming experience and the average farming experience was 20.8years. This result implies that the rice farmers have ample experience to better manage and repay loans having become very stable in the profession. This lends credence to the suggestion that loans are better repaid by farmers who have experience [8, 14].

Results in Table 2 further show that 2.8% and 13.3% of the farmers had average annual incomes below ₦150,000 and above ₦600,000 respectively and most (83.9%) of the farmers had incomes between ₦150,000 and ₦600,000. Higher income might indicate higher capacity to repay loans.

The average annual income was ₦425,500 which is fairly consistent with the findings in a previous study [21].

Again as shown in Table 2, slightly more than half (57.2%) of the farmers cultivated between 2 and 4 hectares of farmland with an average of 3.4 hectares. This result implies that farmers still practice farming on small scales, albeit the result shows an increase compared to an average farm size of 2.18ha reported in a similar study [13]. The improvement was probably as a result of the farmers' motivation to grow rice due to the ban on its importation. As more land is cultivated, income from farming is expected to improve due to better output. A larger size of farm could mean more harvest and more income that can enhance a borrower's capability to repay loan [5, 31].

Again as shown in Table 2, more than half (57.8%) of the farmers had contacts with extension agents in respect of loan in the past 12 months. 50.6% were contacted twice or less and only 3.9% had more than 2 contacts. 42.2 percent were not contacted in respect of loan repayment. Extension contacts were inadequate, this could deny the farmers the needed education that is vital to productivity and loan repayment. Extension contacts provide more knowledge to farmers regarding the advantages of loan and its appropriate utilization and this influences loan repayment positively [11].

As revealed in Figure 1, most (89.4%) of the respondents were married while a few (10.6%) were single. The result implies that most of the farmers had their own families and this might imply high household size and higher expenses or more hands to help in farm work. With relatively less family expenditure, single farmers may outperform the married ones at loan repayment and conversely, married farmers are also likely to find loan repayment easier as more hands may reduce farm labour expenses [30]. Figure 2 also indicates that the vast majority (83.8%) of the farmers were Muslims while a few were Christians. This was quite expected because Islam is the dominant religion in this area of the State.

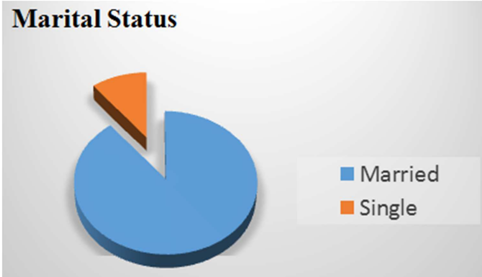


***Figure 1.*** *Distribution of farmers by marital status.*

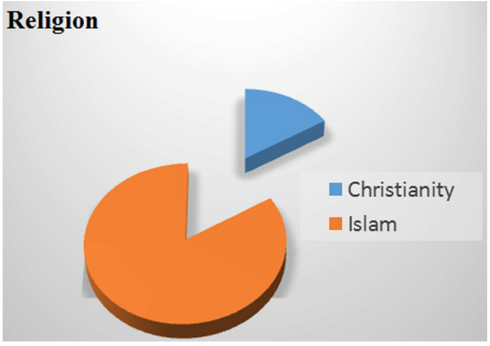


***Figure 2.*** *Distribution of farmers by religion.*

### *4.2. Perception of Rice Farmers on Loan Repayment*

This section presents results and discussion on the perception of rice farmers on loan repayment as shown in Table 3.

***Table 3.*** *Farmers' Perception on Loan Repayment (n=180).*

| Likert Items | SD F (%) | D F (%) | U F (%) | A F (%) | SA F (%) | Mean Score | Rank |
|---|---|---|---|---|---|---|---|
| Loan repayment is beneficial to farmers | 0 (0) | 2 (1.1) | 2 (1.1) | 130 (72.2) | 46 (25.6) | 4.22 | 1st |
| Loans should be repaid promptly | 0 (0) | 2 (1.1) | 7 (3.9) | 143 (79.4) | 28 (15.6) | 4.09 | 2nd |
| Loans should be repaid for the benefit of more farmers | 2 (1.1) | 0 (0) | 27 (15) | 119 (66.1) | 32 (17.8) | 3.99 | 3rd |
| Repayment avails farmers more loan for expansion | 0 (0) | 2 (1.1) | 47 (26.1) | 100 (55.6) | 31 (17.2) | 3.88 | 4th |
| Punishing loan default is good | 4 (2.2) | 24 (13.3) | 23 (12.8) | 111 (61.7) | 18 (10) | 3.63 | 5th |
| Repayment time is long enough | 2 (1.1) | 28 (15.6) | 32 (17.8) | 109 (60.6) | 9 (5) | 3.52 | 6th |
| Loans should be repaid from other sources e g. sale of assets | 4 (2.2) | 36 (20) | 38 (21.1) | 89 (49.5) | 13 (7.2) | 3.39 | 7th |
| Bank loans are too expensive for poor farmers | 5 (2.8) | 69 (38.3) | 56 (31.1) | 42 (23.3) | 8 (4.5) | 2.88 | 8th |
| Loans are affordable | 8 (4.4) | 66 (36.7) | 70 (38.9) | 34 (18.9) | 2 (1.1) | 2.75 | 9th |
| Repayment time is too short | 21 (11.7) | 91 (50.6) | 40 (22.2) | 24 (13.3) | 4 (2.2) | 2.43 | 10th |
| Loans should not be repaid if harvest is poor | 32 (17.8) | 84 (46.7) | 34 (18.9) | 30 (16.6) | 0 (0) | 2.34 | 11th |
| Farmers should be allowed to repay at their convenience | 32 (17.8) | 94 (52.2) | 27 (15) | 23 (12.8) | 4 (2.2) | 2.29 | 12th |
| Loans reduce farmers' income | 36 (20) | 116 (64.5) | 11 (6.1) | 17 (9.4) | 0 (0) | 2.05 | 13th |
| Loan repayment drains the farmers' already lean resources | 57 (31.7) | 89 (49.5) | 13 (7.2) | 17 (9.4) | 4 (2.2) | 2.01 | 14th |
| Default should not be punished because farmers are poor | 92 (51.1) | 56 (31.1) | 9 (5) | 23 (12.8) | 0 (0) | 1.79 | 15th |
| Loans are government benefits and do not have to be repaid | 129 (71.6) | 23 (12.8) | 14 (7.8) | 14 (7.8) | 0 (0) | 1.51 | 16th |

S. D. = Strongly Disagree; D. = Disagree; U. = Undecided; A. = Agree; S. A. = Strongly Agree.
Source: Field Survey, 2023.

Results in Table 3 show that most (97.8%) of the farmers with a mean score of 4.22, perceive that loan repayment is beneficial while 95% of the farmers with a mean score of 4.09, perceive that loans should be promptly repaid and 71.7% supported sanctions for loan defaulters. These three together rank highest in the perception order implying that the respondents have faith in loan to assist their rice farming operations. 15% of the farmers perceived that they should be allowed to repay loans when it is convenient, 12.8% perceived that defaulters should not be punished and 7.8% did not see a reason to repay loan since it is the only benefit they can derive from government. This impression encourages late repayment or outright default of loans [5]. The least ranked perception (MS=1.51) of the farmers on loan repayment was that loans are the only way poor farmers benefit from government and do not have to be repaid. A similar study however reported a contrasting position where most (74.2%) of respondents perceived bank loans as grants that did not have to be repaid [5].

### *4.3. Level of Respondents' Positive Perception on Loan Repayment*

This section is a summary of the respondents' perception on loan repayment as shown in Table 4.

***Table 4.*** *Level of Respondents' Positive Attitude to Loan Repayment.*

| Positive Attitude | | Frequency | Percentage | Mean |
|---|---|---|---|---|
| Low | (> 2.50) | 53 | 29.4 | |
| Moderate | (2.51-3.75) | 127 | 70.6 | 2.93±0.17 |
| High | (> 3.75) | 0 | 0 | |

Source: Survey, 2023.

### *4.4. Level of Farmers' Positive Perception on Loan Repayment*

Table 4 shows the summary of aggregate responses of farmers to the perception statements. The responses are grouped into low, average and high perception. Majority (70.6%) of the farmers had moderate positive perception of loan repayment, few (29.4%) had low positive perception and no farmer had high positive perception of loan repayment. The mean perception was 2.93. The way farmers perceive loan repayment might affect their zeal towards repayment. The impression that loan default is not a crime and that loans are grants that don't have to be repaid fuel late repayment and outright default by borrowers [5].

### *4.5. Factors Influencing Loan Repayment*

This section presents the institutional, economic and borrower related factors that are perceived to influence loan repayment. The results are shown in Table 5.

***Table 5.*** *Factors Influencing Loan Repayment.*

| Factors | SD | D | U | A | SA | Mean score | Rank |
|---|---|---|---|---|---|---|---|
| | F (%) | F (%) | F (%) | F (%) | F (%) | | |
| Institutional Factors | | | | | | | |
| Late disbursement of loan | 0(0) | 0(0) | 2(1.1) | 28(15.6) | 150(83.3) | 4.82 | 1st |
| High interest charges on loan | 0(0) | 0(0) | 1(0.5) | 41(22.8) | 138(76.7) | 4.76 | 2nd |
| Loan adequacy for its purpose | 0(0) | 6(3.3) | 16(8.9) | 126(70.0) | 32(17.8) | 4.02 | 3rd |
| Rigid repayment terms | 0(0) | 5(2.8) | 54(30) | 107(59.4) | 14(7.8) | 3.72 | 4th |
| Economic Factors | | | | | | | |
| Crop production failure | 0(0) | 0(0) | 0(0) | 24(13.3) | 156(86.7) | 4.87 | 1st |
| Low market prices | 0(0) | 0(0) | 0(0) | 42(23.3) | 138(76.7) | 4.77 | 2nd |
| Availability of other loans | 9(0) | 0(0) | 55(30.6) | 82(45.5) | 43(23.9) | 3.93 | 3rd |
| Poor linkage with market | 0(0) | 4(2.2) | 77(42.8) | 88(48.9) | 11(6.1) | 3.59 | 4th |
| Borrower-related Factors | | | | | | | |
| High household expenditure | 0(0) | 0(0) | 0(0) | 91(50.6) | 89(49.4) | 4.49 | 1st |
| Involvement in social activities | 0(0) | 4(2.2) | 37(20.6) | 115(63.9) | 24(13.3) | 3.88 | 2nd |
| Livestock rearing | 2(1.1) | 9(5) | 72(40.0) | 77(42.8) | 20(11.1) | 3.58 | 3rd |

Source: Field survey, 2023

Results in Table 5 show that late disbursement of loan, loan inadequacy and high interest rate with mean scores of 4.82, 4.02 and 4.76 respectively were the major institutional factors that were perceived to influence loan repayment. Late disbursement of loan can disrupt pre-planting activities, inadequacy of loans can cause the farmers to divert funds to other needs outside the purpose of the loan while high interest charges can reduce farmers' profit and occasion loan default. Farmers are reported to blame loan default on high interest charges, domestic expenses and delay in disbursement [12, 14]. Other institutional factors that affect loan repayment were availability of other loans and unfavourable repayment terms with mean scores of 3.93 and 3.72 respectively. Unfavourable repayment terms and the availability of other sources of loans can weaken the resolve of farmers to defray existing loan commitments. Conversely, the availability of informal loans may mitigate loan diversion and therefore improve the loan repayment performance of farmers. Loans obtained by farmers from informal sources like relatives, friends and moneylenders are often used for nonproductive purposes that reduce farmers' capacity to repay formal loans especially when there is a clash in due dates for repayment [11].

Among the economic factors, yield loss and low market prices with means scores of 4.87 and 4.77 respectively were the major ones that affect loan repayment. Both yield loss and falling market prices imply lower incomes for the farmers and this will affect their capacity to repay loans. Farmers who probably had low yield due to unfavourable weather, pests and diseases, among others, are adjudged less likely to repay loans relative to farmers with good yield [25].

The borrower-related factors that influence loan repayment include high household expenditure with a mean score of 4.49 and involvement in social activities with a mean score of 3.88. Farmers' expenditure on household needs and social festivals are notable drains on their income and these could impact negatively on loan repayment. Livestock rearing with a mean score of 3.58 was also perceived by the farmers to influence loan repayment. This may be so as it gives the financial relief where domestic spending is high. Livestock are sources of cash, farmers who have livestock are better at defraying their commitments in difficult times [11, 31].

### *4.6. Results of Test of Hypotheses*

This section presents the results of the Logistic Regression Analysis to identify the determinants of loan repayment among rice farmers and the Correlation Analysis between farmers' perception and loan repayment.

$Ho_{1:}$ Socio-economic characteristics of Rice farmers do not affect Loan Repayment

***Table 6.*** *Logistic Regression Analysis Showing the Determinants of Loan Repayment among Rice Farmers.*

| | B | S. E. | Wald | df | Sig. | Exp (B) |
|---|---|---|---|---|---|---|
| Age | 0.119* | 0.043 | 7.650 | 1 | 0.006 | .888 |
| Sex | 0.638 | 0.763 | 0.698 | 1 | 0.404 | .529 |
| Household size | -0.245 | 0.137 | 3.193 | 1 | 0.074 | 1.277 |
| Years of education | 0.094* | 0.048 | 3.923 | 1 | 0.048 | 1.099 |
| Farming experience | 0.111* | 0.040 | 7.551 | 1 | 0.006 | 1.117 |
| Average annual Income | 0.000* | 0.000 | 3.585 | 1 | 0.038 | 1.000 |
| Farm Size | 0.437* | 0.394 | 1.229 | 1 | 0.026 | 1.548 |
| Amount of loan | -0.289* | 0.125 | 5.330 | 1 | 0.021 | 0.749 |
| Nor of social activities hosted | -0.323 | 0.361 | 0.803 | 1 | 0.370 | 0.724 |
| Constant | 3.509 | 1.745 | 4.043 | 1 | .044 | 33.400 |

* Significant at the .05level (2-tailed)

Table 6 shows the results of the Logistic Regression Analysis between selected socio-economic characteristics and loan repayment. The results show that age of the farmers (B=0.119), level of education of the farmers (B=0.094), farming experience (B=0.111), amount of loan (B= -0.289), average annual income (0.00) and farm size (0.437) were the determinants of loan repayment among rice farmers.

Age was positive and significant at 5% implying that older farmers are more likely to repay their loans promptly. Older farmers are more established in farming, may have larger families that could support labour to reduce expenses. This result is consistent with the findings of Abdu *et al.* who reported that the higher the age of respondents the more the respondents' ability to repay loan [1]. The result however contrasts with the notion that as farmers grow older, their resolve to repay loans begin to wane [8].

Amount of loan had an inverse relationship with loan repayment and this implies that the higher the amount of loan, the lower the repayment, this is probably because higher loans imply higher charges which might become difficult to handle in the face of dwindling yield or other adverse conditions. This result negates the findings that the size of loan to positively influence loan repayment and adduced the natural inclination of farmers to trivialize small amounts [8].

The regression coefficient with respect to education was positive and significant at 5%. This shows a direct relationship, implying that more education of the farmers will translate to improvement in loan repayment. Education increases farmers' exposure and capacity to make rational decisions on innovations and helps the farmers' understanding of the need to promptly repay loans. Uneducated and conservative farmers are said to be prone to managerial challenges such as poor administration and misuse of funds [8].

The regression coefficient with respect to farming experience was positive and significant at 5% implying that the more the experience of the farmers the more likely that they will repay their loans. Farming experience brings better management of loan, operational efficiency and improved output and income generation. These will have positive impact on loan repayment. This is consistent with the opinion that as farmers gain more practical knowledge in farming activities, the chances of repaying loans increase [14].

The regression coefficient with respect to income was also positive and significant at 5%. This implies that the rate of repayment increases with increasing income of farmers. As income increases the farmer's profit increases and loan repayment becomes easier. Farmers who engage in off-farm activities are reportedly more likely to repay their loans promptly [25].

Farm size had a positive and significant relationship with loan repayment. This implies that farmers who cultivate more land are more likely to repay their loans. This is probably because bigger farms have better yield (*ceteris paribus*) and consequently more income to defray loans. This result is consistent with the belief that non-defaulters have large farms relative to defaulters, and that enhanced their farm output which helped them repay their loans [31].

Household size and number of social ceremonies both had negative but insignificant relationships with loan repayment. A high household size will probably imply consumption of a higher portion of farm produce and also constitute a drain on the income of the family. High maintenance cost incurred by a large household may hinder loan repayment [8]. Engagement in social activities drains hard earned resources that could be channeled to loan repayment. Other authors reported this variable as negative and significant to loan repayment [30].

$Ho_2$: Relationship between Perception of Farmers and Loan Repayment.

***Table 7.*** *Result of Correlation Analysis between Farmers' Perception and Loan Repayment.*

| | Positive Perception | Loan Repayment |
|---|---|---|
| Positive perception | 1 | 0.264*** |
| Loan Repayment | 0.264*** | 1 |

Source: Field Survey, 2021. *** Correlation is significant at the .05 level (2-tailed)

Results presented in Table 7 show the Correlation between Perception and Loan Repayment. The results show a positive but weak relationship between the two variables. Loan repayment fairly responds positively to the perception of farmers with a correlation coefficient of 0.264 at 5% confidence level. As the positive perception of the farmers increase so does the tendency to repay loan [5].

# 5. Summary, Conclusion and Recommendations

### *5.1. Summary*

The average age of the farmers was 44 years and they were predominantly males and married. The mean household size was 7 members. The farmers had an averagely low level of education. The mean farming experience was 20.8 years, average farm size was 3.4 hectares and average income was ₦425,000. Extension contact was weak with an average of 2 contacts in the last 12 months and as many as 42.2% denied any contact at all. The overall perception of the farmers on loan repayment was moderate with a mean of 2.9.

Late disbursement of loan, high interest rate and loan inadequacy were the institutional factors that were perceived to have the most influence on loan repayment. Among the economic factors, yield loss and low market prices were regarded by the farmers as having heavy influence on loan repayment. The borrower-related factors that influence loan repayment include high household expenditure and involvement in social activities.

The regression analysis results show that age of the farmers, level of education of the farmers, farming experience, amount of loan, average annual income and farm size were the determinants of loan repayment.

Amount of loan had an inverse relationship with loan repayment which implies that the higher the loan amount the lower the chances of repayment. Age was positive and significant at 5% implying that older farmers are more likely to repay their loans. The regression coefficient with respect to farming experience was positive and significant at 5% implying that the more experienced farmers were better at loan repayment. The regression coefficient with respect to education was also positive and significant at 5%. This implies that the rate of repayment increased with increasing education of the farmers. Farm size and average annual income also had positive and significant relationships with loan repayment implying that as the variables increase loans are better repaid.

### *5.2. Conclusion*

The study concluded that the most important factors that influence loan repayment were, yield loss, late disbursement of loans, low market prices, high interest rates, high household expenditure and loan inadequacy. The study further concluded that the farmers had moderate perception of loan repayment and their socio-economic characteristics such as age, level of education, farming experience, amount of loan, annual income and farm size were related to loan repayment.

### *5.3. Recommendations*

Based on the findings and conclusion of the study, the following recommendations are put forward:

1. Lenders should give priority to experienced farmers in the disbursement of loans.
2. Extension agents should work with research institutes to ensure farmers get improved varieties of rice for cultivation and also disseminate best agricultural practices that can improve crop yield in order to ease loan repayment.
3. Loan agencies should ensure timely delivery of loans and inputs to the rice farmers.
4. Further extension education of farmers on better home management practices to reduce household expenditure.

# 6. Limitations and Research Directions for the Future

The study was limited to 180 farmers, one crop (rice) and in only one state of the country due to financial and time constraints. The potential areas for future research related to repayment of agricultural input loans may include: assessment of input loan repayment by cash crop farmers; input loan repayment in other states of the country; and assessment of the role of extension agents on agricultural input loan repayment.

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## Authors' Contribution

Olowookere Olagoke Olajide: Data collection, analysis and interpretation, manuscript writing, proof reading;

Adefalu L. L.: Supervision, validation of research instrument and proof reading;

Aderinoye-Abdulwahab S. A.: Supervision validation of research instrument and proof reading;

Akubo A. R.: Validation of research instrument and proof reading;

## Conflicts of Interest

The authors declare no conflicts of interests.

Ethically speaking, the authors worked with the States' Agricultural Development (ADP) and hereby assure that the respondents understood and consented to being interviewed for the.

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