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## Effects of Interest Rate on Access to Agro-credit by Farmers in Adamawa State, Nigeria

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**Citation:** Umaru A. T (2022) Effects of Interest Rate on Access to Agro-credit by Farmers in Adamawa State, Nigeria, *International Journal of Agricultural Extension and Rural Development Studies*, Vol.9, No.4, pp.28-37

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**ABSTRACT:** *This study examined the effect of interest rates on access to agro-credit by farmers in Adamawa state. Respondents' sources of credit, amount of credit obtained, factors affecting the volume of credit sourced by, factors affecting the volume of credit sourced by farmers, problems encountered in obtaining loans from formal and informal sources were investigated. Findings of the study reveals that majority of the farmers, 65% from Personal Savings. About 40% of the respondents obtained credit at the range of ₦100,001-400,000. Regression analysis shows a co-efficient of multiple determination  $R^2$  value of 0.65 of the total variations in volume of credit sourced by farmers were accounted by actions of independent variables, namely; age, level of education, interest rate, credit awareness and farm income was statistically significant at various levels of probabilities.*

**KEY WORDS:** interest, access, agro-credit, farmers

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### INTRODUCTION

The agricultural sector is the mainstay of the majority of Nigerian rural poor, with over 70% of the active labour force in rural areas employed in agriculture and the sector contributing over 23% of the Gross Domestic Product (GDP) in 2006 (World Bank, 2007). Agricultural growth in Nigeria is increasingly recognized to be central to sustainable economic development. The sector plays a very significant role in addressing food insecurity, poverty alleviation and human development challenges. However, in more recent years, there has been a marked deterioration in the productivity of Nigeria's agriculture and the attributing factor is limited access to credit facilities (Nwaru, 2004).

Farm credit has for long been identified as a major input in the development of the agricultural sector in Nigeria (Duong & Izumida, 2002). Capital is one of the major means of improving the rural agrarian economy (Eboreime, 2008). Credit for agriculture may improve production and food security as a result (Alfred, 2005).

## LITERATURE

### **The concept of interest rate**

According to Finan (2012), interest is an amount charged to a borrower for the use of the lenders money over a period of time. From the lenders perspectives, the money the lender is investing is changing over time due to the interest being added. For this reason, interest is sometimes referred to as the time value of money. Interest rate is an important economic price. This is because whether seen from the point of view of cost of capital or from the perspective of opportunity cost of funds, interest rate has fundamental implication for the economy.

### **Agricultural Credit and Sources**

According to International Food Policy Research Institute [IFPRI] (2009), access to agricultural credit is synonymous to agricultural productivity. Owolabi, *et al* (2011) observed that about 42% of smallholder farmers sourced funds from personal saving while 28% made their financial help through cooperatives. 20% got financial assistance through institutions mostly from Nigeria Agricultural Credit Bank (NACB). Less than 50% of respondents received financial assistance from informal sources.

### **Effects of Interest Rate on Sources and Volume of Credit Received by Farmers**

One of the principal characteristics of informal credit as stated by Okojie *et al* (2010), and Anyanwu (2004) is the higher interest rates imposed on loans relative to those by the formal banking sector. But this applies more to the informal credit institution (money lenders). However, loan default with respect to subsidized public credit from a formal institution (NACRDB) accessed by farmers in southwest Nigeria was 77% (Adejobi and Atobatele 2008).

## METHODOLOGY

### **The Study Area**

The study was conducted in Adamawa State. Adamawa State is located in the North East geopolitical zone/region of Nigeria. The State was created in August 1991 from the defunct Gongola State and occupies about 38000 square kilometers with a population of 3,178,950 according to 2006 census.

### **Sampling Procedure**

The four Agricultural Development Project, ADP Zones in the State (comprising Mubi, Gombi, Yola and Mayo Belwa) were used for the study. A total of 340 farmers were randomly selected from the zones in proportion to the numbers of registered farmers in each zone.

### Method of Data Collection

Data for the study were collected from primary sources. The data were generated using structured questionnaire and interview schedule. Data collected were respondents' socio-economic characteristics which include age, occupation, gender, marital status, income level, education, size of household and group membership and their interest rate perception such as; interest on loans, loan amount applied for, loan amount received, time taken to retain a loan, repayment pattern/amortization schedule. Credit information of farmers such as; the amount requested from a financial institution, amount approved and disbursed, level of interest charged, investment cost, collateral requirement was also collected.

### Data Analysis

Descriptive statistic, likert scale and ordinary regression analysis (OLS) were used for the analysis. The likert scale rating of 4-point was applied to assess the problems encountered in obtaining loans from formal and informal sources. The 4- point scale was graded: very serious, serious, undecided and not serious, which have values of 4, 3, 2 and 1, respectively. Ordinary least square (OLS) estimation technique was used to determine the factors affecting the volume of credit received by farmers in Adamawa State, Nigeria.

The linear model can be stated implicitly as;

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + \dots + b_nX_n$$

Where

Y = volume of credit sourced (₦)

X<sub>1</sub> = Age (years)

X<sub>2</sub> = marital status (dummy); married=1; single=0

X<sub>3</sub> = Level of education (years)

X<sub>4</sub> = Farming experience (years)

X<sub>5</sub> = Interest rate (%)

X<sub>6</sub> = Credit awareness (dummy); aware=1, not aware=0

X<sub>7</sub> = Farm income (₦)

X<sub>8</sub> = Co-operative membership (dummy); member=1; not member=0

## RESULTS AND DISCUSSIONS

### Sources of credit used by farmers

The sources of credit used by farmers in the study area is presented in Table 1 below.

**Tables 1: Distribution of respondents according to the sources of credit used**

Sources	Types	Frequency	Percentage
Formal:	Commercial banks	18	15
	Co-operative banks	23	19.2
	Bank of Agriculture (BOA)	51	42.5
	Merchant bank	08	6.7
Informal:	Friends	54	45
	Relatives	39	32.5
	Personal Savings (Adashe)	78	65
	Moneylenders	61	50

**\*\* Multiple responses**

It is evident that most farmers found it difficult to obtain agricultural credit. Various sources of credit by the farmers in the study area were identified. Table 1 disclosed that majority (65% and 50.8%) of the farmers obtained credit from Personal Savings and Moneylenders respectively. Also, 45% of the respondents obtained credit from friends while only 32.5% of them sourced their credit from relatives.

More so, 15% of the farmers secured credit from commercial banks, 19.2% from co-operative banks and majority (42.5%) secured their credit from BOA while only 6.7% sourced from merchant banks.

It is obvious that majority of the farmers depend on informal creditors. This agrees with the survey carried out by Krain (1998) who observed that credit from formal financial institutions meet only a small portion of the total credit demand of the agricultural sector.

#### **Amount of credit obtained by farmers**

The amount of credit obtained by farmers in the area is shown in Table 2 below.

**Table 2: Distribution of respondent according to the amount of credit obtained**

Amount of credit obtained(₦) Percentage	Frequency
≤ ₦100,000	60 25
100,001-400,000	96 40
400,001-700,000	30 12.5
700,001-1,000000	36 15
>1,000000	18 7.5
<b>Total</b>	<b>120</b> <b>100</b>

From the Table 2 above, 40% of the respondents obtained credit at the range of ₦100,001-400,000 and 25% obtained credit less than or equal to ₦100,000 . Others, 12.5%, 15%, and

7.5% borrowers had obtained credit to the tune of ₦400, 001-700,000; ₦700, 000-1000000 and more than ₦1, 000000 respectively. This shows that most of the borrowers obtained credit less than ₦500, 000. It may be that majority of farmers in the area are peasant farmers with small land holdings who need small amount of money for production. This, maybe because of the high interest rate charged by some financial institutions.

### Factors affecting the volume of credit sourced by farmers.

The multiple regression analysis was used to predict the factors affecting the volume of credit sourced by farmers. Output of the regression analysis showed a co-efficient of multiple determination  $R^2$  value of 0.65. This implies that about 65% of the total variations in volume of credit sourced by farmers were accounted by joint actions of the eight independent variables while the rest 35% was due to error term (ui). The result of regression analysis is presented in the Table 3 below.

**Table 3: Determinants of credit volume sourced by farmer**

Variables	Coefficient	Standard error	t-value	Significant
Constant	3.032	0.326	9.587	0.00
Age	-0.119	0.061	-1.991	0.048
Marital status	-0.182	0.038	-4.821	0.328
Level of education	0.080	0.041	1.818	0.061
Farming experience	0.011	0.014	0.057	0.958
Interest rate	-0.013	0.020	-0.654	0.055
Credit awareness	0.020	0.022	0.859	0.001
Farm income	-0.035	0.039	-0.847	0.029
Co-operative membership	0.058	0.045	1.416	0.168
F-statistics=4.28				
$R^2=0.65$				

The overall regression result was significant as F-Statistic value of 4.28 was statistically significant at 1% level of probability which shows the goodness of fit on the estimated model. Five out of eight predictors, namely; age, level of education, interest rate, credit awareness and farm income was statistically significant at various levels of probabilities.

**Age (X<sub>1</sub>):** The result shows that age had negative sign but statistically significant effect on the volume of credit sourced by farmers from either formal or informal financial institutions. This relationship is in consonance with the *a priori* expectation of the study, because older people are often afraid of credit conditions.

**Marital Status (X<sub>2</sub>):** The co-efficient of marital status was found negative and not statistically significant. This finding suggests that marital status does not matter in terms of the volume of credit sourced by farmers in the study area.

**Level of Education (X<sub>3</sub>):** The variable level of education was positive and statistically significant at 10% level of probability. This agrees with the *a priori* expectation, because it was believed that chances to obtain credit from financial institutions improve with increase in the level of education. This implies that majority of the credit beneficiaries in the area were the educated farmers.

**Farming Experience (X<sub>4</sub>):** The co-efficient of farming experience was positive and found not statistically significant. This implies that the volume of the credit sourced by the farmers does not depend on the number of years of farming experience acquired by a farmer.

**Interest Rate (X<sub>5</sub>):** The relationship between interest rate charged and the volume of credit sourced by farmers from either formal or informal financial institutions was inverse which conforms to *a priori* expectation of the study. This result also showed that interest rate was statistically significant at 10% level of probabilities. Ugwumba and Omojaba (2013) had similar result.

**Credit Awareness (X<sub>6</sub>):** Awareness to credit availability had a positive and significant relationship at 1% level of probability with the volume of credit sourced by farmers from either formal or informal financial institutions. This is in conformity with the *priori* expectation.

**Farm Income (X<sub>7</sub>):** The relationship between farm income and volume of credit sourced by farmers was statistically significant at 5% level of probability, but negative. This does not conform to *a priori* expectation of the study. The implication of this result is that most of the credit was made available to those with low farm income.

**Co-operative Membership (X<sub>8</sub>):** The co-efficient was found positive but statistically not significant. The *a priori* expectation was not established, because being a member of co-operative societies is an advantage for sourcing more credit.

### **Problems Encountered by Farmers in Obtaining Credit from Formal and Informal Financial Institutions.**

The problems encountered by farmers in obtaining credit from formal financial institution is shown in Table 4 below.

**Table 4: Distribution of respondents according to problems encountered in obtaining credit from formal sources.**

<b>Problems</b>	<b>Mean score</b>
1. A lot of time is spent on getting the credit	<b>2.61</b>
2. Procedures are complicated	<b>2.69</b>
3. Interest rates are high	<b>2.81</b>
4. The cost of transaction is high	2.45
5. One is not given the full amount applied for	2.01
6. Inadequate collateral security to obtain credit	<b>3.00</b>
7. Transportation cost from home to source of credit is high	2.39
8. Problem of collateral cheques	2.45
9. Repayment time is short	<b>2.55</b>
10. Illiteracy	<b>2.99</b>
11. Lack of good information about agro-credit	<b>2.80</b>
12. Lack of presence of banks in the rural areas	<b>2.67</b>

Farmers in the area encountered some problems which hindered them from access to both formal and informal financial institutions to boost agricultural production. However, the mean score of 2.55 and above was used as a decision rule, which implies that any problem equal to or greater than 2.55 was considered a serious problem in the area. From formal financial institution perspectives, this problem includes the following with mean score: A lot of time is spent on sourcing the credit (2.61), procedures are complicated (2.69). Osumba and Omakjolu had similar result. Interest rates are high (2.81), Inadequate collateral security to obtain credit (3.00). Also, among the problems are lack of awareness of credit packages (2.80) and lack of presence of banks in the rural area (2.67)

### **Problems encountered by farmers obtaining credit through informal financial sources.**

The problems encountered by farmers in obtaining the credit from informal financial institutions is shown in table 5 below.

**Table 5: Distribution of respondents according to the problems encountered in obtaining credit from informal sources**

<b>Problems</b>	<b>Mean score</b>
1. Lack of trust to pay back the credit	<b>2.91</b>
2. Transportation cost is high from home to source	2.07
3. One is not always given the full amount he applied for	<b>2.89</b>
4. Risk of repaying the credit because of crop failure	<b>2.87</b>
5. Time in repaying the credit is short	2.25
6. Difficulties before getting the credit	<b>2.65</b>
7. Problem of getting guarantors	<b>3.98</b>
8. Illiteracy	2.44

The problems encountered by the respondents in sourcing credit from informal sources were; lack of trust to pay back the credit (2.91), one is not always given the full amount he/she applied for (2.89), risk of not paying back because of crop failure (2.87), difficulties before getting the credit (2.65) and problem of getting guarantors (3.98).

### **Implication to Research and Practice**

From the results of the study, it is indicated that high interest rate reduces motivation among farmer in sourcing credits. The volume of the credit obtained by farmers can be reviewed to tackle high rate inflation which results in high cost of farm inputs.

### **CONCLUSION**

The results of the study indicated that, commercial interest rate and collateral requirement charged by both formal and informal financial institutions, largely restricted farmers from seeking credit from these sources. Farmers secured credit from informal financial institutions than formal sources. Furthermore, the study identified interest rate, age, level of education, credit awareness and farm income as the major determinants of the volume of credit sourced by farmers.

### **Further Research**

Further research can be conducted to recommend policies to be formulated by Government in order to reduce interest rate and abolish the presentation of collateral before issuance of bank loans.



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**Aacknowledgement: I am thankful to the Tertiary Education Trust Fund for sponsoring this research under the IBR.**

