



FOSTERING GENDER EQUALITY IN RURAL AFRICA: EXPLORING THE PATH OF AGRICULTURAL CREDIT FOR LEGUME FARMERS IN NIGERIA

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ABSTRACT

The study examines the gendered path to the agricultural credit of legume farmers in Nigeria using a decision-making theory. Multistage sampling procedure was adopted which arrives at 1,137 female legume farmers for the study. Data were collected using interview schedule of a household head using Open data kit (ODK). It is then subjected to descriptive and inferential statistic (Logit regression). Credit institution availability in the respondents' locality and Group membership were found to be positively significant ($P \leq 0.01$ and $P \leq 0.1$) respectively in influencing males to demand for credit. While only Credit institution availability in the respondents' locality and age were found to be positively significant ($P \leq 0.01$ and $P \leq 0.1$) respectively in influencing females' demand for credit. The study further revealed that majority (84.16%) of males received agricultural credit through their friends and most (93.4%) of females received it through friends. few (13.4% of males and also 13.1% of female legume farmers) requested for agricultural credit in the study area. Also, among those that didn't demanded for agricultural credit they did it for a reason, lack of money lenders accounted for 30% and 20.39% of males and females respectively. Lack of money lenders accounted for 30% and 20.39% of males and females respectively reason for refusing to request for agricultural credit. More so, majority (70% and 79.61% of males and female legume farmers) were in need of the credit but didn't apply for some reasons. The study also revealed that out of 13.4% of males and also 13.1% of female legume farmers that requested for agricultural credit, majority (78.3 and 82.6% of male and females) got it. It is concluded that both gender have access to agricultural credit mostly through their friends. It is hence recommended that informal lenders should be encouraged through the appropriate policy framework to act as community level agents serving as intermediaries between borrowers in farming communities and the formal financial institutions based in the cities and towns across the country.

Keywords: Agriculture, Credit, Decision, Farmers and Gender

INTRODUCTION

Enhancing access to credit and public investments is a pivotal stride towards overall development. Agricultural credits serve as catalysts for investing in agriculture, temporarily transferring assets from one entity to another, thus contributing to agricultural progress. A prevalent impediment to Africa's agricultural advancement, frequently noted in literature, is insufficient investment or credit (Salami and Arawomo, 2013). In Nigeria, farmers face credit constraints, with 18% of small farmers' expenses allocated to agricultural production inputs. Shockingly, only 7% of Nigeria's smallholders have credit access (Oseni *et al.*, 2019; FAO, 2020).



Agricultural credit can be procured through formal and informal channels. Informal agricultural credit involves borrowing from moneylenders, friends, or family when small farmers require urgent loans or minor investment capital. In developing nations like Nigeria, commercial banks and specialized agencies are tasked with formally providing credit to farmers (Salami and Arawomo, 2013). Various policies in Nigeria aim to improve farmers' credit access. The recent initiative, in collaboration with the Central Bank of Nigeria (CBN) and the Federal Ministry of Agriculture and Rural Development (FMARD), introduced the Commercial Agriculture Credit Scheme (CACs). This scheme, a part of the Federal Government's Commercial Agriculture Development Programme (CADP), offers concessional funding for commercial agricultural ventures to boost national food security, lower inflation, decrease credit costs, boost output, create employment, diversify revenue, and support the industrial sector (CBN, 2018). Despite efforts to promote gender equality in rural Africa, especially in agriculture, substantial inequalities persist, impeding the potential of women farmers in Nigeria, a country with a large agricultural economy is this inequality most pronounced among farmers (Adegbite and Machethe, 2020). Limited access to agricultural credit further compounds the challenges faced by women farmers, limiting their ability to increase yields, adopt modern agricultural practices and participate equally in economic activities (Adegbite and Machethe, 2020).

The study's overarching objective is to explore using a decision making theory (that lets individuals make the best logical decision possible when dealing with uncertain situations) the gender-specific journey of legume farmers in Nigeria towards agricultural credit. Specific goals encompass: (i) understanding the demand for agricultural credit in Nigeria; (ii) evaluating the performance of agricultural credit lending institutions in Nigeria; and (iii) assessing access to agricultural credit in Nigeria.

METHODOLOGY

The Study Area

The study was conducted in Nigeria, a country located in West Africa within latitudes 4°N and 14°N and longitudes 2° 2'E and 14° 30'E. It shares borders with Benin to the west, Chad and Cameroon to the east, Niger to the north, and the Gulf of Guinea to the south, including parts along Lake Chad. The nation spans 910,768 km² of land, 13,000 km² of water, and has a population of 195.874 million, yielding a population density of 204.28/km² and an annual growth rate of 2.71%. It ranks as the 7th most populous country worldwide, projected to reach 401 million by 2050, becoming the 3rd most populous after China and India. The country's GDP was 375.745 billion US dollars, with a 2.4% annual growth rate; oil dominates the economy, with agriculture, forestry, and fisheries contributing 20.8%, industry at 22.3%, and goods and services at 13.2% (NBS, 2018).

The study focused on Northern Nigeria, spanning longitudes 30° to 150° east and latitudes 90° to 140° north. Its climate is characterized by alternating wet and dry seasons, with peak air temperatures occurring in March/April and minimums in December/January. The region features diverse savanna vegetation—Guinea, Sudan, and Sahel Savanna—gradually decreasing in variety northward due to climate shifts. Agriculture dominates the economy here, and the area has experienced climate change, impacting lives and livelihoods. Comprising 19 states and the Federal Capital Territory, Northern Nigeria covers about 60% of Nigeria's landmass and accounts for 52.57% of the total population. Agriculture remains the cornerstone of the Nigerian economy, despite the dominance of oil, supporting the livelihoods of most citizens. The sector faces multiple challenges, including outdated land tenure systems, limited irrigation (less than 1% of cropped land), low technology adoption, high input costs, inadequate



credit access, inefficient fertilizer distribution, poor storage facilities, and limited market access, resulting in low agricultural productivity (averaging 1.2 metric tons of cereals per hectare) and substantial post-harvest losses (FAO, 2020).

Sampling Procedure

Multistage sampling procedure was adopted. In a first stage, Northern Nigeria was purposely selected as it's the major legume producing area in Nigeria. In a second stage, four states (Abuja, Borno, Kaduna and Kwara) were randomly selected from a 19 northern states. In a third stage, major legume producing local gov't area were purposely selected as given by Agricultural Development Programme of each states, making three from Borno due to security situation in the area (Biu, Hawul and Kwaya Kusar). Two from Abuja (Bwari and Danko Wasagu), three from Kwara (Ilorin-east, Ilorin south and Kwara) and two from Kaduna (Lere and Soba). In the last stage proportionate random sampling was employed to select 5% of registered farmers in the study area. Making 1,137 respondents for the study.

Method of Data Analysis

The data were collected using interview schedule of a household head using Open data kit (ODK). The data quality assuring measures adopted were proper supervision and review of filled questionnaire. Data were analysed using both descriptive and inferential statistic. Descriptive statistic such as count, percentage, mean, standard deviation (S.D) and ratio were used to achieved Objective (ii). The efficiency of agricultural lending institutions was calculated by the formulae, as number of respondents received agricultural credit/number of respondents applied for the agricultural credit. Inferential statistic (logistic regression) was used to achieved objective (i) and (ii). The econometric expression of the relationship in its non-linear form (sigmoid curve) is

$$\frac{P_i}{1-P_i} = \frac{1 + \exp(Z_i)}{1 + \exp(-Z_i)} \dots (1)$$

When transform into linear is $L_i = \ln\left[\frac{Z_i}{(1-P_i)}\right]Z_i \dots(2)$

In this case, $P_i/(1 - P_i)$ is the probability ratio that the farmer will demand credit to the probability that farmer will not demand credit. This means endogenous variable is binary and it has two values 1 and 0. If a respondent demanded credit its value is 1 and 0 for the respondent who does not demanded credit. For the dependent variable, respondent who do not demanded credit is giving 1, otherwise as 0, as the dependent variable is dichotomous.

Logistic regression model (as its applies to both males and females separately) estimates is;

$$y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \dots \beta_6X_6 + \varepsilon \dots (3)$$

Where;

Y = dependent variable (Dummy: demanded credit =1 otherwise=0)

β_0 = constant

$\beta_1- \beta_{11}$ = logistic regression coefficients

X_1 = Age (Years)

X_2 = Education (Years of formal education)

X_3 = Farming experience (Years of farming experience)

X_4 = Group membership (dummy: member=1, otherwise=0)

X_5 = Household size (Number of people)

X_6 = Credit availability (dummy: 1= available, 0= otherwise)

While the econometric expression of the access to agricultural credit is in its non-linear form (sigmoid curve) is

$$\frac{P_i}{1-P_i} = \frac{1 + \exp(Z_i)}{1 + \exp(-Z_i)} \dots (4)$$



When transform into linear is $Li = \ln\left[\frac{Zi}{(1-Pi)}\right]Zi \dots (5)$

In this case, $Pi/(1 - Pi)$ is the probability ratio that the farmer will access credit to the probability that farmer will not access credit. This means endogenous variable is binary and it has two values 1 and 0. If a respondent accessed credit its value is 1 and 0 for the respondent who does not accessed credit. For the dependent variable, respondent who do not accessed credit is giving 1, otherwise as 0, as the dependent variable is dichotomous.

Logistic regression model estimates;

$$y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \dots \beta_7X_7 + \varepsilon \dots (6)$$

Where;

Y = dependent variable (Dummy: accessed credit =1 otherwise=0)

β_0 = constant

$\beta_1- \beta_{11}$ = logistic regression coefficients

X_1 = Age (Years)

X_2 = Sex (dummy: male=1, otherwise=0)

X_3 = Education (Years of formal education)

X_4 = Farming experience (Years of farming experience)

X_5 = Number of groups (Number of group farmer is participating)

X_6 = Household size (Number of people)

X_7 = Credit institution availability (dummy: 1= available, 0= otherwise)

RESULTS AND DISCUSSION

Gender based distribution of quantitative socio-economic variables

Table 1 outlines the socio-economic characteristics of the respondents. The average age for males was 44 years, while females averaged 48 years. This suggests both genders were in their economically active ages, with considerable age variability. This aligns with Silong and Gadanakis (2019), who found higher average ages for female farmers compared to males in Nigeria. Regarding formal education, males had an average of 8 years and females had 6 years, indicating low education levels. Education variance was relatively low, Silong and Gadanakis (2019) observations of education disparities against female farmers. Farming experience averaged 21 years for males and 22 years for females, implying substantial experience for making informed decisions about capital and agricultural investment. Concerning legume farming, both genders had around 14 years of experience, indicating their expertise in this area. However, females' legume production experience displayed less variability.

However, group membership averaged 0.91 years for males and 0.63 years for females, highlighting limited social networks among the farmers for utilizing group membership to access agricultural credit. Household size averaged 9 individuals for male-headed households and 7 for female-headed households. These figures suggest relatively large households, with female-headed households being smaller and less dispersed in size within the households.



Table 1: Socio-economic Characteristics of the Respondents for a Quantitative Variables

| Variables | Male | | | | Female | | | |
|---------------------------|-------|-------|------|------|--------|-------|------|------|
| | Mean | S.D | Min. | Max. | Mean | S.D | Min. | Max. |
| Age | 43.95 | 13.47 | 18 | 90 | 47.62 | 14.31 | 18 | 80 |
| Years of Formal Education | 8.39 | 6.18 | 0 | 55 | 5.50 | 5.37 | 0 | 20 |
| Farming Experience | 21.35 | 12.05 | 0 | 65 | 21.88 | 12.53 | 1 | 50 |
| Legume Farming Experience | 14.04 | 10.28 | 0 | 56 | 13.77 | 9.25 | 0 | 50 |
| Years of Group Membership | 0.91 | 1.62 | 0 | 38 | .63 | 0.70 | 0 | 2 |
| Household Size | 9.24 | 5.01 | 1 | 43 | 7.01 | 3.08 | 1 | 17 |

Gender based distribution of qualitative socio-economic characteristics variables

The result of Table 2 showed that only 27.3% and 15.0% of the males and females attended secondary school respectively. This showed the low level of education in the study area that can denied farmers enough knowledge to be able to procure agricultural credit from available sources. And females were less privileged concerning western education than their male counterpart. The result further revealed that more than half (53.1% and 60%) of males and females respectively, were not members of the group. These showed a fair desire of the respondents to partake in groups to enable them pull agricultural credit and other benefits. This is in line with Wossen *et al.* (2017) that found that less than half (24.5%) of smallholder farmers in Nigeria were not married but it's contrary to Silong and Gadanakis (2019) that reported more than half (66.7%) of both sexes of farmers to be participating into group. The contradiction was possibly due to lower coverage of states in Nigeria by their study.

The result also revealed that most (95.6%) of male legume farmers were married, only 26% of male farmers were singles, other male legume farmers were 7% widowed, 6% divorced and 0.1% had partner. This implies that most male farmers had responsibility that made them necessary to engage in farming for them to cater for their family needs. This is in line with Silong and Gadanakis (2019) who showed that majority (88%) of male farmers were married in Nigeria. The result also shows that, under female farmers, majority (51.7%) were married, 42% were widowed, 3.4% divorced and only 2.8% were singles. This showed that most (97.1%) of females that engage in legume farming had responsibilities to cater too like their male counterparts. This is in conformity with Wossen, *et al.* (2017) who found majority (88%) of smallholder farmers were married in rural Nigeria.



Table 2: Socio-economic Characteristics of the Respondents for a Qualitative Variables

| Variable | Male | | Female | |
|--------------------------|-----------|-------|-----------|-------|
| | Frequency | % | Frequency | % |
| Educational Level | | | | |
| No formal education | 284 | 29.6 | 71 | 40.3 |
| Primary | 210 | 21.9 | 62 | 35.2 |
| Secondary | 262 | 27.4 | 26 | 14.8 |
| Tertiary | 165 | 17.2 | 14 | 8.0 |
| Adult education | 37 | 3.9 | 3 | 1.7 |
| Total | 958 | 100.0 | 176 | 100.0 |
| Group Membership | | | | |
| Not member | 512 | 53.1 | 104 | 60.1 |
| Member | 452 | 46.9 | 69 | 39.9 |
| Total | 964 | 100.0 | 173 | 100.0 |
| Marital status | | | | |
| Single | 29 | 3.0 | 5 | 2.8 |
| Married | 924 | 95.6 | 91 | 51.7 |
| Widowed | 7 | 0.72 | 74 | 42.0 |
| Divorced | 7 | 0.72 | 6 | 3.4 |
| Total | 967 | 100 | 176 | 100.0 |

Factors influencing credit demand in the study area

Table 3 showed that Wald Chi² (7) = 17.25, significant at P≤0.05 for a male model and for a female model the Wald Chi² (7) = 14.79, significant at P≤0.05, this depicts the reliability of the model as proved by Log pseudo likelihood of -39.68367. The result further revealed that only Credit institution availability in the respondents’ locality and Group membership were found to be positively significant P≤0.01 and P≤ 0.1 respectively in influencing males to demand for credit. The marginal effect (dy/dx) of credit institution availability was 27%, this showed that if there is credit institution available in locality, the likelihood of demanding credit by males will increase by 27% if other variables were held constant and if legume farmer was a group member, the likelihood of him to demand for credit was 2% if other variables were held constant, this is in line with Silong and Gadanakis (2019) and Asante-Addo *et al.* (2017) who found group membership to be influencing agricultural credit demand in Nigeria and Ghana respectively, while for the females, only Credit institution availability in the respondents’ locality and age were found to be positively significant P≤0.01 and P≤ 0.1 respectively in influencing females to demand for credit. If the credit lending institution was available, females’ likelihood for demanding credit will increase by 53.8% if other variables were held constant. If the female’s age increases by one year, the likelihood of demanding credit will increase by 0.42% if other variables were held constant.



Table 3: Determinants of Credit Demand

| Variable | Male | | | Female | | |
|---------------------------------|-------------|--------|-------|---------------|---------|---------|
| | Odds Ratio | Z | dy/dx | Odds Ratio | Z | dy/dx |
| Age | 1.00 (0.02) | -0.09 | 0 | 1.06 (0.03) | 1.86* | 0.0042 |
| Years of education | 1.00 (0.02) | 0.2 | 0 | 0.93 (0.06) | -1.06 | -0.0056 |
| Farming experience | 1.00 (0.02) | -0.23 | 0 | 0.95 (0.04) | -1.3 | -0.0041 |
| Legume farming experience | 1.01 (0.02) | 0.8 | 0 | 0.98 (0.05) | -0.47 | -0.0019 |
| Group membership | 1.25 (0.15) | 1.91* | 0.02 | 1.55 (0.053) | 1.27 | 0.0335 |
| Household Size | 1.02 (0.02) | 1.03 | 0 | 1.05 (0.09) | 0.55 | 0.0035 |
| Credit institution availability | 4.62 (2.13) | 3.33** | 0.27 | 19.10 (18.48) | 3.05*** | 0.538 |
| Constant | 0.09 (0.04) | -4.83 | | 0.02 (0.03) | -2.54 | |
| Wald Chi ² (7) | 17.25 | | | 14.79 | | |
| Prob> Chi ² | 0.02 | | | 0.04 | | |
| Mcfadden pseudo R ² | 0.04 | | | 0.11 | | |
| Log pseudolikelihood | -268.61 | | | -39.6836 | | |

NB: Figures in parenthesis were robust standard error

Gender Analysis of Agricultural Credit in the Study Area

The findings presented in Table 4 indicated that only 3.6% of male legume farmers and 2.3% of female counterparts reported the presence of credit lending institutions in their localities. This scarcity could be attributed to the insufficient reach of microfinance institutions and private lenders in the region.

Furthermore, the results highlighted that a small percentage (13.4% and 13.1%) of both male and female legume farmers actually sought agricultural credit within the study area. This reluctance to apply for credit seemed to stem from inadequate agricultural support services in the area. This observation aligns with a study by Doss *et al.* (2019), which found that individuals in developing countries were more inclined to use personal savings rather than credit for asset markets.

Among those who refrained from seeking agricultural credit, various reasons were noted. Notably, lack of accessible money lenders accounted for 30% of males and 20.39% of females, while 22% of males and 25% of females indicated they simply didn't require credit. Additionally, concerns about borrowing risks dissuaded 18% of males and 23.03% of females from pursuing agricultural credit. Other deterrents included uncertainty about where to obtain credit (9% males, 9.87% females), anticipated rejection (7% males, 10.53% females), absence of collateral (5% males, 3.29% females), high interest rates (3% males, 2.63% females), paperwork complications (2% males, 1.32% females), and untimely disbursement (2% males, 3.29% females). These statistics underscored that a significant majority (70% of males, 79.61% of females) were indeed in need of credit but refrained from applying due to various concerns.

Further analysis in Table 5 revealed that among the 13.1% of male and female legume farmers who did request agricultural credit, a substantial majority (78.3% of males, 82.6% of females) were successful in obtaining it. This suggested that those who perceived a high likelihood of securing credit, even informally, were more inclined to apply. These results suggested that women had a relatively advantageous position in accessing agricultural credit compared to men. This trend resonates with previous studies by Silong and Gadanakis (2019); Ololade and Olagunju (2013) who reported women being more likely to have access to credit. Probably due to women are more credit-worthy and have higher loan repayment rates compared to men. There is increasing recognition of the significant contribution of women to agriculture



in sub-Saharan Africa and other parts of the world resulting in some lending institutions targeting women farmers.

Table 4: Gendered Path to Credit

| Variable | | Male | | Female | |
|---|---------------------|------------|--------------|------------|--------------|
| | | Frequency | % | Frequency | % |
| Availability of credit institution in the village | Not available | 927 | 96.4 | 171 | 97.7 |
| | Available | 35 | 3.6 | 4 | 2.3 |
| | Total | 962 | 100.0 | 175 | 100.0 |
| Credit request | Not requested | 833 | 86.6 | 152 | 86.9 |
| | Requested | 129 | 13.4 | 23 | 13.1 |
| | Total | 962 | 100.0 | 175 | 100.0 |
| Reason for non-request of credit | Amount not on time | 18 | 2 | 5 | 3.29 |
| | Amount not provided | 16 | 2 | 1 | 0.66 |
| | Borrowing risky | 152 | 18 | 35 | 23.03 |
| | Don't know where | 72 | 9 | 15 | 9.87 |
| | Interest rate | 27 | 3 | 4 | 2.63 |
| | No collateral | 41 | 5 | 5 | 3.29 |
| | No money lenders | 244 | 30 | 31 | 20.39 |
| | No need | 182 | 22 | 38 | 25 |
| | Paper work | 17 | 2 | 2 | 1.32 |
| | Rejection expected | 56 | 7 | 16 | 10.53 |
| | Total | 825 | 100 | 152 | 100 |
| Receipt of Credit | Not received | 28 | 21.7 | 4 | 17.4 |
| | Received | 101 | 78.3 | 19 | 82.6 |
| | Total | 129 | 100.0 | 23 | 100.0 |

Reason for non-receipt of the Credit after Application

Table 5: Causes of non-receipt of the Credit

| Variable | | Male | | Female | |
|----------------------------------|----------------------------|------------|----------|------------|----|
| | | Frequency | % | Frequency | % |
| Reason for non-receipt of credit | Amount not release on time | 4 | 16 | 0 | 0 |
| | Amount not provided | 1 | 4 | 0 | 0 |
| | Borrowing risky | 2 | 8 | 0 | 0 |
| | Don't know where | 2 | 8 | 0 | 0 |
| | No collateral | 1 | 4 | 0 | 0 |
| | No money lenders | 10 | 40 | 3 | 75 |
| | No reason | 3 | 12 | 1 | 25 |
| | Paper work | 1 | 4 | 0 | 0 |
| | Rejection expected | 1 | 4 | 0 | 0 |
| Total | 25 | 100 | 4 | 100 | |



Gender Analysis of Sources of Agricultural Credit

The result in table 6 revealed that majority (84.16%) of males received agricultural credit through their friends and most (93.4%) of females received it through friends also. This showed that the informal source (friend, friend other source, relative (95.38%)), dominated the agricultural credit activity in the study area, this is possible probably due to informal sources neither entails any interest attached to the credit nor bureaucratic processes. Formal institution (bank, microfinance institution, NGO and government) accounted for only 8.91% for males and 6.6% for females. Semi-formal institutions (Community Based Organization (CBO), friend bank, private lender, self-help group, friend’s self-help group) accounted for 7.92% for males.

Table 6: Gendered Sources of Credit

| Variable | Male | | Female | |
|------------------------------------|------------|------------|-----------|------------|
| | Frequency | % | Frequency | % |
| Sources of Credit | | | | |
| Bank | 2 | 1.98 | 0 | 0 |
| Community Based Organization (CBO) | 1 | 0.99 | 0 | 0 |
| Friend | 85 | 84.16 | 17 | 93.40 |
| Government | 2 | 1.98 | 1 | 0.6 |
| Microfinance | 3 | 2.97 | 0 | 0 |
| NGO | 2 | 1.98 | 1 | 6.0 |
| Relative | 1 | 0.99 | 0 | 0 |
| Private lender | 2 | 1.98 | 0 | 0 |
| Self-help group | 3 | 2.97 | 0 | 0 |
| Total | 101 | 100 | 18 | 100 |

Perceived effectiveness of Agricultural Credit Lending Institutions in Nigeria

Table 7 showed that most (89.49% and 89.2% of males and females legume farmers) perceived the agricultural lending institutions were not effective in the study area. Few (10.2% and 10.8% of males and female legume farmers) agreed they are fairly effective and 0.31% and 0% of males and females agreed the agricultural lending institutions to be effective. This showed that the agricultural lending institutions were not delivering to the people’s expectation. That is why majority of farmers didn’t request for the agricultural credit, not because they have enough but due to negative perception on the agricultural lending institutions.

Table 7: Perceived effectiveness of Agricultural Credit Lending Institutions in Nigeria

| Variable | Male | | Female | | |
|---|------------------|------------|------------|------------|--------------|
| | Frequency | % | Frequency | % | |
| Effectiveness of Agricultural Credit Institutions | Not effective | 860 | 89.49 | 157 | 89.2 |
| | Fairly effective | 98 | 10.20 | 19 | 10.8 |
| | Effective | 3 | 0.31 | 0 | 0 |
| | Total | 961 | 100 | 176 | 100.0 |



Gender Analysis for Perceived Efficiency of Agricultural Lending Institutions in Nigeria

The result of table 8 revealed that of those that requested for the agricultural credit from the agricultural institutions, the result revealed the efficiency of 80% and 83% of the agricultural lending institutions for males and females respectively. This might be due to the fact that majority procured the agricultural credit through their friends, they are aware of the friends that would unfailingly help them.

Table 8: Perceived Efficiency of Agricultural Lending Institutions in Nigeria

| Variable | Efficiency |
|----------|------------|
| Male | 0.80 |
| Female | 0.83 |

Factors Influencing Access to Agricultural Credit

The result of table 9 showed that LR Chi² (7)= 20.75(p≤0.05), this showed the reliability of the model as proved by the Log pseudolikelihood= -45.541318. Only age and number of groups in which the legume farmer is participating were significant. Age was found to be negative but significant (p≤0.05), this showed that there is negative relationship between age and access to agricultural credit. The marginal effect showed that if age increases by one year the likelihood of accessing agricultural credit decreases by 1.1%. This is probably due to the fact that there are programmes available for encouraging youths to participate in agriculture. This corroborates finding of Akpan *et al.* (2016) who found that credit as a catalyst that encourages youths to participate into agriculture. The result further revealed that number of groups was positively significant (P≤0.01). This showed that there is positive relationship between number of group participated by legume farmer and access to agricultural credit. The marginal effect showed that if number of group increases by one, the likelihood of accessing credit will increase by 4.2%. This probably due to the fact that farmers join cooperatives to be able to pull benefits including credit. This is in line with Anang *et al.* (2015) who found group membership to influencing access to credit in Ghana. Gender was not found to be significantly affecting access to credit in Nigeria even though, the descriptive statistic showed the variation. This corroborate the findings of Twumasi *et al.* (2019) who found gender wasn't affecting access to credit in Ghana.

Table 9: Determinant of Access to Agricultural Credit

| Variable | Odds Ratio | Z | dy/dx |
|--------------------------------|--------------|---------|--------|
| Age | 0.92(0.04) | -2.12** | -0.011 |
| Sex | 0.81(0.70) | -0.25 | -0.027 |
| Years of formal Education | 0.99(0.05) | -0.28 | -0.002 |
| Farming Experience | 1.06(0.05) | 1.32 | 0.008 |
| Number of groups | 1.38(0.15) | 2.98*** | 0.042 |
| Household Size | 0.97(0.07) | -0.46 | -0.005 |
| Credit availability in town | 2.01(1.98) | 0.71 | 0.076 |
| Constant | 27.85(44.45) | 2.08 | |
| LR Chi ² (7) | 20.75 | | |
| Prob> Chi ² | 0.01 | | |
| Mcfadden pseudo R ² | 0.1856 | | |
| Log pseudolikelihood | -45.541318 | | |

NB: Figures in parenthesis were standard errors ** = sig at 5% *** = sig at 1%



CONCLUSION AND POLICY RECOMMENDATIONS

The study concluded that informal sources dominated agricultural credit (95.38%), while formal institutions accounted for only 8.91% (males) and 6.6% (females). Reluctance to seek credit was notable due to inadequate agricultural support. Reasons for not seeking credit included lack of money lenders (30% males, 20.39% females) and not needing credit (22% males, 25% females). Accessing credit was influenced by factors like age and group participation sex was not influencing access to agricultural credit. The study recommended improving awareness, involving extension workers, and facilitating easy credit access through microfinance institutions, enhancing financial services' availability, and bundling credit with support services to encourage rural farmers' engagement in profitable activities. This could be through developing programs that didn't only target the youths. This could be done in locating microfinance institutions at a proximal distance to rural dwellers. By this concept, informal lenders could be encouraged through the appropriate policy framework to act as community level agents serving as intermediaries between borrowers in farming communities and the formal financial institutions based in the cities and towns across the country. This will help to minimize issues raised by unavailability of lending institution in locality, simplify application and repayment procedures and processes, enhance timely credit delivery and reduce transaction costs. Overall, this framework will help in the delivery of affordable and convenient financial services to both lenders and borrowers. Also, it would be useful to design loan packages that would encourage rural farmers to engage in more profitable economic activities by bundling credit with additional support services like monitoring the progress of their productive activities and connecting them with agencies or groups that would support their productive activities.

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