



## Determinants of Credit Access among Smallholder Women Farmers in Kwara State, Nigeria

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### Abstract

This study examined smallholder women farmers' access to credit in Irepodun Local Government Area of Kwara State, Nigeria. The study specifically identified the socio-economic attributes of the rural women smallholder farmers and examined the factors determining their access to credit in the study area. A total of 120 structured questionnaires were administered to women farmers who obtained credit from different sources. Descriptive statistics and probit regression model were used in analyzing the data obtained. The probit model result revealed that significant relationship exists between age, level of education, marital status, main occupation, farming experience, farm size, collateral, interest rate and access to credit at varying probability levels. Gender differences regarding access to credit should be critically checked. Making credit accessible to women will not only boost production in agricultural sector but will also improve livelihood and reduce poverty most especially in the rural areas. The financial institutions need to address the conditions for loan acquisition especially in the area of collateral security and interest rate charged so that the less privileged women farmers can access credit to enhance their productivity.

**Keywords:** *Smallholder, women farmers, credit access, probit*

### Introduction

In most sub-Saharan African countries including Nigeria, agriculture is a major sector of the economy, as it provides employment for about 70% of the population. Agricultural holdings or farm sizes are however generally small and scattered resulting in low agricultural productivity (Olomola, 2001; Yakubu and Akanegbu, 2015). Gender inequality is considered as the main reason for hunger and poverty: it has been revealed that 60% of chronically hungry people are mainly women and girls (WFP Gender Policy and Strategy, 2015). Most women, representing about 60% of the agricultural labour force reside in the rural country side (Jaycox, 1989); FAO (2011) however confirms that these women produce most of the country's food. This is an indication that women are now very crucial to making foods available in our markets and homes as they earnestly pursue this task with utmost diligence. Findings reveal that if these women are able to have same access to productive resources as men, they could improve yields on their farms by 20 to 30%, raising total agricultural output in these countries by 2.5 to 4%. This would lessen the number of hungry people in the world by around 12 to 17% (UN, 2012). These women are highly constrained by many social factors including remaining in the rural

communities due to low level of education and fear of the unknown which rules them out of the high possibility of securing jobs in urban communities (FAO, 2011).

Activities in the agricultural sector and most informal sectors of the rural economy of developing nations including Nigeria require lots of capital which most women lack (World Bank, 2002; Quisumbing *et al.*, 1995). Since women constitute the largest percentage of agricultural labour force, it is therefore imperative that they should be empowered and given access to needed credit facilities to aid their agricultural activities (Adeniyi, 2010). Studies in Nigeria have actually identified agricultural credit as an important component in the advancement of the agricultural sector (John and Osondu, 2015; Nchuchuwe and Adejuwon, 2012). Of course agricultural financing has the potentials to improve increased resource productivity, capital formation, and agricultural diversification among the rural households. This notwithstanding, the sources of funding for agriculture is however limited and in fact restrictive for smallholder and especially female farmers as agricultural credit constitute only 3.4 and 4.0% of the total credit released to the private sector in Nigeria in 2017 and 2018, respectively. For instance,

the main source of funding smallholder female farmers is the families (Jack, 2013; FAO, 2012). The other sources, which are indeed restrictive, are: Commercial Banks, Community Banks, Microfinance Banks, Cooperative societies and other specialized Finance companies. Interestingly, the formal financial institutions provide services to only about 35% of the population which are active economically; the remaining 65% are excluded from access to formal financial services (EFInA, 2018). This remaining 65% of the population are often at the mercy of informal financial sector, through moneylenders, microfinance institutions, relatives, friends and credit associations such as age grade and town union associations. The local microfinance institutions make credit available for the rural and urban low-income earners. They are usually made up of the informal groups like rotating credit schemes (CBN, 2002; 2006; 2011; 2020). Other providers include cooperative societies and savings collections. The informal financial institutions generally face the problem of limited outreach brought about by scarcity of loanable funds. These are the terrains where smallholder inadequate ability to access agricultural credit is part of the major factors leading to the decline in the contribution of agriculture to Nigerian economy.

In spite of the past efforts at providing microcredit through the establishment of agricultural development banks, microfinance banks, cooperatives, special lending schemes, and other self-help groups (SHGs), micro-credit availability in Nigeria and particularly Kwara State, (the study area) is still far from being adequate in relation to demand (Adekoya, 2014). Previous studies such as Popoola *et al.* (2018); Falola *et al.* (2015); Adesiji *et al.* (2011) and Adewale *et al.* (2022) among others carried out studies mainly on the effects of microfinance institutions and other financial institutions on productivity, livelihood and SMEs of participants in Kwara State, but none of them considered the effects on the lending institutions on the economic activities of smallholder women farmers. To the best of the knowledge of the researcher, studies on factors that determine access to formal credit by smallholder rural women for agricultural activities are still very scanty in the study area. This study is therefore set to investigate the various factors determining the accessibility by women smallholder farmers to credit in Irepodun Local Government Area of Kwara State, Nigeria. This research is set to establish new knowledge that is of relevance to policy makers, development planners, and also practitioners in various government ministries, Non-Governmental Organizations (NGOs) and other establishments concerned with promoting gender related matters and alleviation of poverty at household level. The findings of the research could also contribute to designing new strategies for improvement in access to credit by smallholder women farmers in the study area and Nigeria at large.

## Methodology

### *Study area, sampling procedure and sample size*

Multistage sampling procedure was employed in this

study. In the first stage, Irepodun Local Government Area (LGA) was purposively selected from the eighteen LGAs in the State. Irepodun was purposively selected because majority of the women there participate actively in farming which involves both food and animal production. Simple random sampling procedure was employed to select four wards out of the ten wards in the LGA based on farming activities and access to credit thereby completing the second selection stage. In the third stage, thirty (30) respondents were selected randomly from each of the four wards giving a total of 120 respondents. Out of the 120 questionnaire administered, one could not be retrieved, therefore leaving a total of 119 questionnaire used for the study. The questionnaires were administered with the assistance of trained enumerators who can speak the local dialect fluently.

### *Measurement of variables*

**Dependent variable**-In this study, the dependent variable is access or no access to farm credit. The value is "1" for users and "0" for non-credit users.

**Independent variables**-The independent variables for this study are; socio-economic characteristic of the women farmers/ credit attributes which are as stated in Table 1.

### *Data analysis*

Data relating to socio-economic characteristics of the respondents were analyzed by using descriptive statistics such as frequency distribution, mean, tabulation and percentages. Probit regression was used to establish how the earlier stated socio-economic and credit variables determine the respondents use or non-use of agricultural credit.

### *Estimation Method*

**Probit Model**- Probit model was employed in estimating the determinants of credit accessibility. This is due to its efficiency in the measurement of dichotomous variables. As stated by Nagler (1994), probit model limits the estimated probabilities to be 0 and 1 and then relaxes the constraint, thereby making the effect of the independent variables to be constant across various predicted values of the dependent variable. Probit model also assumes values of 1 and 0 as observed variables for (Y). There exists however an unobserved latent continuous variable labelled (Y\*) which determines the value of (Y) (Kuwornu *et al.*, 2012; Long 2006). Y represents the observed binary variable (Okpukpara, 2010) and in this study, it is represented by credit access (which is whether or not a household borrows). It is assumed that (Y\*) can be stated as follows:

$$Y^*_i = \beta_0 + \sum_{j=1}^11 \beta_j X_j + \epsilon_i \dots (1)$$

and that:

$$Y_i = 1 \text{ if } Y^*_i > 0 \dots (2)$$

$$Y_i = 0 \text{ if } Y^*_i \leq 0 \dots (3)$$

Positive values relating to Y\* are recognised as Y=1, while negative or zero values of Y\* are taken to be Y=0. Y= 1 if a farmer has credit access and 0 if otherwise, X<sub>i</sub>

= age of the farmer (yrs);  $X_2$  = education level (yrs);  $X_3$  = marital status (1=married, 0=otherwise);  $X_4$  = household size (number of persons);  $X_5$  = ethnicity (1=yes, 0=no);  $X_6$  = main occupation (1=farming, 0=otherwise);  $X_7$  = farming experience (yrs);  $X_8$  = farm income (naira);  $X_9$  = farm size (ha);  $X_{10}$  = collateral (1=yes, 0=no); and  $X_{11}$  = interest rate (%).

## Results and Discussion

### *Socio economic characteristics of the respondents*

The results obtained (Tables 2 and Figures 1-2) reveal the socio economic characteristics of the farmers. As shown in Figure 1, most (89.1%) of the respondents in the study area were married. The marital status of the respondents may likely influence their use of credit as they obtain loan for family upkeep and other uses like consumption expenses, especially during off season, other than for farming purposes alone as confirmed by Ogunfowora *et al.* (1972). From Figure 2, majority (58.0%) of the loan seekers are in the age range 41-50 years. This is a productive age which implies high productivity. Table 2 also revealed that majority (57.1%) of the loan seekers had a house hold size within 6-10 persons; a large household size which may cause the need for credit acquisition to cater for household responsibilities. Majority (72.3%) of the respondents have farming as their primary occupation. From the Table, most of the farmers (82.3%) have between 5- 10 years of experience in farming, implying that as the women continue with farming activities, they are exposed to valuable experiences on the best farming practices, credit acquisition and best resource allocation, which enhances them chances of credit access. Majority (63.0%) of the women farmers operate on a small size of land (<1 hectare); could be as a result of land ownership structure in Nigeria. The women farmers in this study area all have one form of education or the other as majority (52.9%) of loan seekers in this study area were secondary school leavers. Their level of education could enhance their access to credit. The result shows that most (89.9%) of the women makes use of credit; many (47.1%) obtained credit from cooperative societies, followed by microfinance banks (41.2%). Majority of the women farmers (62.2%) were allowed to use credit facility between 1-2 years, only 17.7% use credit less than one year, while others use the facility for more than two years. A common feature of microfinance bank credit is that they are usually short-term credit of between 1 and 2 years. However, the credit could be renewed upon timely payment. It is generally expected that the longer farmers are permitted to use credit, the more their productivity due to opportunity to re-use the facility for more productive ventures. Most financial institutions considered in this study require guarantors (75.6%) before loans could be granted, while others require landed property with certificate of occupancy (C of O) (19.3%), shares of companies (5.0%) among others. Table 2 also shows timely disbursement of funds to women farmers which is expected to enhance the effective use of credit. The reasons given for the late disbursement of credit range from lack of collateral (3.4%) and organizations'

shortage of funds (4.2%). Time lag in disbursement shows that credit was disbursed to women farmers (75.6%) mostly between 2-4 weeks after application for credit which ensures good use of credit by women farmers since credit was disbursed to them on time. Long time lag between application for and acquisition of credit affects farmers' effective use of credit. The women farmers in this study area are mostly involved in crop farming (40.3%) and a combination of crop/livestock farming (39.5%), while few of them are engaged in livestock farming only (5.0%). Credit thus serves as a catalyst that activates other factors of production and makes under-used capacities functional for increased production which in turn helps to boost productivity in agriculture (Ijere, 1998). On adequacy of credit, 78.1% of the women farmers indicated that the credit available to them was adequate. The interest rate charged mostly (54.6%) by financial institution in this study was between 5-10%. Many of the women farmers (49.6%) obtain about ₦40,000- ₦80,000 as their net farm income. This is fair as it allows them to take care of their basic needs.

### *Determinants of credit access among the women farmers*

From probit regression result in Table 3, age, level of education, farm size, and collateral had a direct relationship with probability to access credit and significant at 10% level as well as marital status, years of farming, main occupation, and interest rate at 5% level. Age has positive correlation with credit accessibility as the age of an individual influences his/her ability to take vital decisions about loan acquisition and utilization. Young people who are usually more energetic, having more income earning potentials and who can easily grow investment or engage themselves in many activities are expected to save more for higher and enough capital accumulation. Individuals in their middle ages have positive and significant attitude towards credit demand, while the aged are less inclined to demand for credit. Aged household heads have more difficulties to ease consumption by themselves when confronted with adverse experiences, as they often lack sufficient number of working household members to boost income through increasing labour hours put into work. They are thus often left with the option of borrowing from informal lending institutions. This finding agrees with Mpuga (2010) and Zeller (1994) who described individual's age as a positive and relevant factor in the decision for applying for credit and the amount of credit requested. They also asserted that young people might have the tendency to save and/or borrow more money for various economic activities compared with the older people. From the result, education has a positive and significant relationship with probability to access credit. This implies that being literate will make the women farmers to use credit facilities wisely. Not being educated will reduce access to credit. The finding therefore corroborates Tang *et al.* (2010) and Owuor (2009) who affirmed that an additional year of education is capable of increasing borrowing by 2.5% and that

education has a significant and positive influence in farm households' ability to acquire and use credit. Marital status has positive and significant relationship with access to credit. Not being married will reduce credit access by 2.8%. The result indicates that the probability of accessing loans from banks is higher for married customers. This can be rationalised by the fact that banks lend on the basis of trust which to a certain extent is expected to be higher for a married person since he/she is perceived to be responsible over his/her actions and is therefore not likely to default in settling the debt. Married persons are also considered to be more stable and would take longer to migrate to other places unlike single customers. Married customers also appear to be more responsible and fear possible consequences that may arise from non-repayment of loans. This submission agrees with Ololade and Olagunju (2013) and Japelli (1990) who asserted that married couples could access more credit because of their less mobility and loan may be jointly underwritten, and their findings indicate that singles are 3.4 percent more likely to be constrained than married couples. Main occupation is an important factor in making decisions about credit use. Farming as main occupation impacts women livelihood positively and significantly. The negative coefficient of farming as main occupation implies that not practicing farming as main occupation reduces credit access. Years of farming activities bears a positive and significant relationship with credit access. From the result, with many years of farming experience, farmers will adopt environmental and other variations and be able to master new agricultural technologies. It increases credit access as it serves as a vital determinant of productivity as well as the level of production in farming. This is because credit access enables the farmers to purchase superior quality and high yielding seeds, fertilizers and chemicals, thereby causing yield increases due to timely and adequate inputs. Having access to credit therefore ensures a liquidity buffer that enables women farmers to adopt modern crop varieties and apply and manage inputs in a more effective and timely manner, which ultimately leads to higher productivity and efficiency compared with farmers that do not have access to credit. The study concurs with earlier findings by Ololade and Olagunju (2013), Sossou *et al.* (2014) and Agbo *et al.* (2015). The land area cultivated by the women farmers has a positive significant relationship with credit access. Access to land is a critical factor for female smallholder farmers as it enhances access to credit and it is one of the most accepted collaterals for loan approval. In most parts of Nigeria however, land is primarily communally owned and can only be allocated to male members of the community/family, while women are excluded. Therefore, having access to land could be a significant driver for female agricultural activities most especially in the study area (Whitehead and Tsikata, 2003; Otunaiya *et al.*, 2014; Anyiro and Oriaku, 2012). Furthermore, it implies that as the area of land increases, the capacity of income, when income increases the welfare of farming households will automatically increase. Collateral will increase credit accessibility; farmers in possession of valuable assets have more

chances of credit access as their assets can be easily liquidated to redeem default. Hence, according to CBN (2012), access by women to finance is often limited by the availability of collateral and asset-based financing. Also, as observed by Fletschner (2009), lending institutions have policies that are discriminatory towards women, causing them to see women as inexperienced and hence, less desirable clients. A positive significant relationship exists between interest rate and credit access as low interest rate will increase credit access. The result suggests that low interest rate is capable of causing lack of incentive among funds providers, while high rate of interest or uneconomic interest rate could constitute a disincentive to borrowers of funds. The finding is in consonance with Akpan *et al.* (2014), and Ololade and Olagunju (2013) who found that the average rate of interest paid by loan beneficiary enhanced the level of repayment default. This finding however contradicts earlier results by Oni *et al.* (2005), in their study of poultry farmers in Ogun State; their analysis of factors influencing default rate among the farmers revealed that interest rate that the farmers are made to pay have a negative coefficient and was also not significant.

### Conclusion

This research investigated the factors that determine access to credit by smallholder women farmers in Kwara State, Nigeria. Age, level of education, marital status, main occupation, years of farming, farm size, collateral and interest rate are the main determinants of the women farmers' access to credit in the area of study. From the empirical result of this study, the following are recommended: Gender differences regarding access to credit should also be critically checked. Making credit accessible to women will not only boost production in agricultural sector but will also improve livelihood and reduce poverty most especially in the rural areas. Specific budgetary allocation is therefore strongly advocated for smallholder women farmers in the annual budget of the government at all levels. The government should also come up with programmes targeted at women/youth empowerment through agriculture and state this clearly in the budget allocation. Government policies should target the reform of the land use act and address gender related barriers in order to make land easily available for agricultural purposes. There is the need for financial institutions to revisit the credit access conditions by small scale farmers. This is to allow the less privileged among them to benefit from credit disbursement especially as regards the aspects of high interest rate and collateral security. In order to address collateral security problems, women smallholder farmers are enjoined to form economic empowerment groups so as to pull their resources together to enhance access to credit from the banks.

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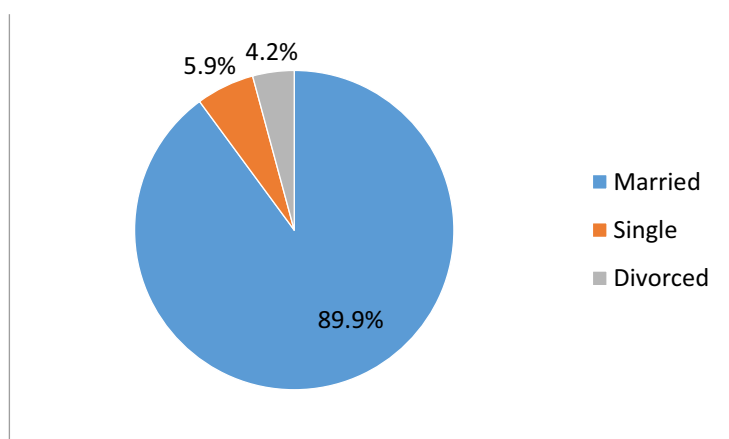
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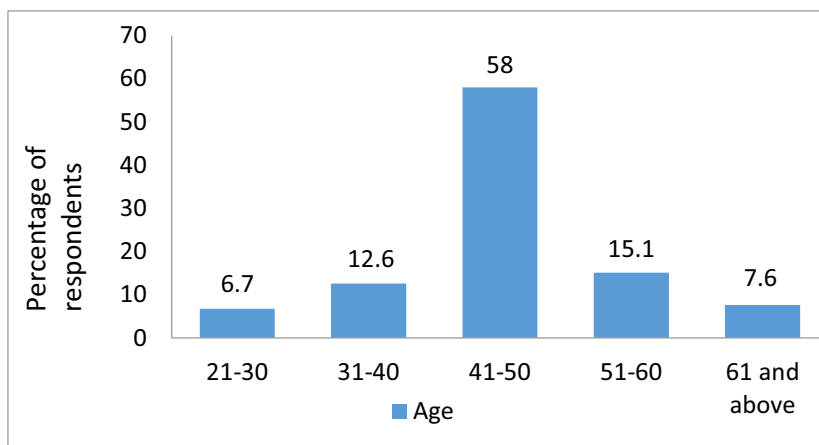
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**Table 1: Independent variables**

Variable	Indicator	Expected sign
Access to credit	access or no access to credit 1 if yes, and 0, otherwise	+/-
Age	age of the respondent in years	+/-
Education	1 stands for respondents with completed junior school (nine or more years in school), 0 otherwise	+/-
Marital status	1 for married respondent and 0 otherwise	+/-
Hhd size	total number of people in the household (headcount)	+/-
Ethnicity	1 for indigenes; 0, otherwise	+/-
Main occupation	1 for farming; 0, otherwise (years)	+/-
Years of farming	experience in farming activities (years)	+/-
Net farm income	income from farm operations (measured in Naira, the local currency)	+/-
Farm size	the total land area used for farming measured in hectares	+/-
Collateral	whether or not an hhd possesses assets which allow it to borrow (1 if yes, 0 if otherwise)	+/-
Interest rate	effect of interest rate on borrowing	+/-



**Figure 1: Distribution of respondents based on their marital status**



**Figure 2: Age distribution of respondents**

**Table 2: Socio-Economic characteristics and credit attributes of women farmers in the study area (n=119)**

Variable	Frequency	Percentage
<b>House hold size</b>		
1 to 5	41	34.5
6to 10	68	57.1
11 to 15	8	6.7
16 and above	2	1.7
<b>Main occupation</b>		
Farming	86	72.3
Trading	23	19.3
Sewing	5	4.2
Others	5	4.2
<b>Farming experience</b>		
< 5 years	20	16.8
5-10 years	71	59.7
11-15years	19	15.9
16-20 years	7	5.9
>20 years	2	1.7
<b>Farm size</b>		
<1 Hectare	75	63
1-2 Hectare	30	25.2
>2 Hectare	14	11.8
<b>Level of education</b>		
Tertiary school	32	26.9
Secondary education	63	52.9
Primary education	14	11.8
Islamic school	8	6.7
Others	2	1.7
<b>Sources of credit</b>		
Cooperative society	56	47.1
Microfinance bank	49	41.2
Commercial bank	6	5.1
Women association	2	1.6
Money lender	2	1.6
Friends and families	4	3.4
<b>Credit</b>		
Users of credit	107	89.9
Non-users of credit	12	10.1
<b>Type of collateral</b>		
Landed property	23	19.3
Company shares	6	5.1
Guarantors	90	75.6
<b>Interest rate</b>		
No interest rate	6	5
<5	2	1.7
5-10%	65	54.6
11-15%	25	21
16-20%	17	14.3
>20	4	3.4
<b>Net farm income(Naira)</b>		
<40,000	30	25.2
40,000-80,000	59	49.6
>80,000	30	25.2

*Source: Authors' calculations from field survey*

**Table 3: Probit Regression Estimates of Determinants of Access to Credit**

Variable	Coefficient	Std. error	z	P> z
Age (X <sub>1</sub> )	0.1608	0.0941	1.71*	0.087
Educational level (X <sub>2</sub> )	0.4889	0.2481	1.97*	0.049
Marital status(X <sub>3</sub> )	2.7772	1.1975	2.32**	0.020
Household Size(X <sub>4</sub> )	-0.1179	0.2801	-0.42	0.674
Ethnicity(X <sub>5</sub> )	0.3057	0.2684	1.14	0.255
Main Occupation(X <sub>6</sub> )	1.008	0.4696	2.15**	0.032
Farming experience(X <sub>7</sub> )	0.5765	0.2854	2.02**	0.043
Farm income(X <sub>8</sub> )	0.00001	8.91E-	1.30	0.195
Farm size(X <sub>9</sub> )	2.627	1.554	1.69*	0.091
Collateral(X <sub>10</sub> )	3.781	1.9591	1.93*	0.054
Interest rate(X <sub>11</sub> )	0.4999	0.1993	2.51**	0.012
Constant	3.4697	2.539	1.37	0.172
Prob > chi2	0.0000			