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CREDIT CONSTRAINTS IN FARM HOUSEHOLDS IN SOUTH WEST NIGERIA: NATURE AND DETERMINANTS

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Abstract

 This study examined credit constraints in farm households in Southwest Nigeria. Multi-stage sampling technique was employed for the study. Direct elicitation approach and multinomial logit model was applied on the primary data collected in the study area. The results showed that 30.94% of the households were credit unconstrained while the remaining 69.06% were credit constrained with Quantity, Risk and Transaction cost constraints accounting for 17.81%, 21.25% and 30% respectively. The multinomial logit result showed that repayment capacity, repayment history (payment of last loan back), land ownership reduces the probability of the household to be risk constrained while access to extension service increases it. The sex of the household head, off farm income, repayment history will reduce the chance of the household being transaction cost constrained while access to extension service, dependency ratio, will increase the likelihood of the household to be transaction cost constrained. In addition, the coefficients of off farm income, repayment history (payment of last loan back), and land ownership were negative and statistically significant in determining the chance of the household being quantity constrained and a unit increase in them will reduce the likelihood of household being quantity constrained. While access to extension service and repayment capacity, is positive and statistically significant and therefore, an increase in them will increase the chance of the household to be quantity constrained.
Keywords: C*redit, constraints, households, quantity, risk, transaction cost.*
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1. Introduction

 The inability of the household to meet its credit need affects their living conditions and welfare (Li, et. al, 2011; Atamja & Yoo, 2021). However, credit can make a huge difference

in rural farm households. Credit enhances adoption of improved technologies (Simtowe, Zeller & Phiri, 2008; Khandker & Koolwal, 2014, Feleke, Manyong, Abdoulaye & Alene, 2016) and a lack of it is a major barrier to adoption of technology. Credit enables the farm households to purchase improved inputs and seedlings and thus, increase productivity and all things being equal, increased income and even allow the household to invest in non-farm income and thus mitigate the risks associated with agriculture.

According to Zeller, Diagne and Mataya (1998); Baumann, (2001); Duong and Izumida (2002); Zeller and Sharma, (2002) farm household ability to meet its credit need can influence farm production and income. Similarly, Conning and Udry (2007) pointed out that credit is essential for the farmer in that it helps famers to purchase more necessary production input and finance their running cost while in the long run it can help them to make profitable investments (Mukasa, Simpasa & Salamia, 2017). Credit and financial services have been recommended as tools for poverty alleviation, welfare improvement and as well as rural development. Studies have shown that it can reduce poverty, improve household consumption, and enhance welfare (Rosenzweig, 2001; Beck, Demirgüç-Kunt & Levine, 2007; Burgess & Pande, 2003; Mahjabeen, 2008; Kaboski & Townsend, 2012; Tran, 2014; Lin, Wang, Gan & Nguyen, 2019).

As a result of the benefits associated with credit, successive Nigerian Government over the years designed and established several credit schemes to ensure credit availability. These interventions include the Nigerian Agricultural and Cooperative Bank (1973), the Agricultural Credit Guarantee Scheme Fund (1978), Peoples Bank of Nigeria (1989), Community Bank (1990), Commercial Agricultural Credit Scheme (2009), and Bank of Agriculture (2011), Nigeria Incentive-Based Risk Sharing System for Agriculture lending (2013), Anchor Borrower Programme (2015) in addition to several microfinance banks and nongovernmental organisations that exist in the credit market space.

Despite these interventions, Enhancing Financial Innovation and Access (EFInA) in 2018 still reported that 60%, that is 59.4 million of adult population are non-banked, having neither mobile money nor bank account. Many rural households face credit constraint in the rural credit market space (Foltz, 2004; Li & Zhi, 2010; Chaudhuri & Cherical, 2012; Tran, 2014; Wang, Chen, He, & Zhang, 2018; Ojo & Baiyegunhi, 2020). Olomola and Gyimah-Brempong (2014) pointed out that credit constraints are more prevalent in agriculture than in other sectors. This is a result of imperfect market arising from either or both the demand side credit constraints: risk and transaction cost constraints or supply side constraints: quantity constraints (Stiglitz & Weiss, 1981; Boucher, Carter & Guirkinger, 2008; Boucher, Guirkinger & Trivelli, 2009). These credit constraints can affect rural farmers from purchasing necessary inputs and consequently ration their production and consumption choices (Dong, Lu & Featherstone, 2012). Therefore, as a result of the effect of credit constraints in the farm household, this study then seeks to understand empirically the nature of credit constraints and characterize them, adding to the few literatures available on the nature of credit constraints in Nigeria and also investigate the household characteristics influencing each credit constraints. This is with a view to promoting rural credit policies to alleviate these constraints.

2. Credit Constraints Measure

There are two approaches or measures used generally in literature in spotting out the credit constrained status of the household (Diagne, Zeller & Sharma, 2000; Gilligan, Harrower, & Quisumbing, 2005; Mukasa, Simpasa, & Salamia, 2017). The indirect method and the direct elicitation method.

The indirect method detects credit constrained status of the household from the violation of the implication of the life cycle/ permanent income hypothesis. This method makes use of household consumption and income data. According to Diagne et. al. (2000, page 4), "an

implication of life cycle/ permanent hypothesis is that in the absence of borrowing constraints, transitory income should not affect household consumption". Indirect method then test for the violation of this. Therefore, if there is major dependence of consumption on transitory income, it implies that a household is credit constraint. However, empirical conclusion that the household violation of the life cycle/permanent income hypothesis result to being credit constraint is indecisive and unclear, in that under uncertainty condition, the household may be a precautionary or prudent one and not necessarily credit constraint (Diagne et. al, 2000). In addition, the indirect method does not account for both binding (quantity constraint from the supply side) constraint and the non-binding constraints (that is, risk and transaction cost from demand side), it only accounts for binding constraint.

With respect to the Direct elicitation method (DEM), this approach makes use of survey-based questions that elicits the information from the respondents to know exactly if the household is credit constrained or not and if credit constrained, what form? Risk? Quantity? Transaction cost? It makes use of qualitative data. Several questions are asked to determine if they are constrained or not based on household responses. Studies such as Petrick, 2004; Foltz, 2004; Boucher et. al, 2008; Ali and Deininger, 2012 also made use of the direct elicitation method. The shortcoming of this approach is that even though it can tell us the nature of credit constrained household face, it cannot inform of us the extent. However, this study will make use of this approach because it captures both the binding and non-binding constraints of the household which indirect elicitation approach cannot capture.

2.1 Credit Constrained versus Unconstrained

Credit constraints are defined as the inability of the household or individual to meet credit need. It focuses both on the supply and demand side of credit. Boucher, Carter and Gurkinger (2008) highlighted that credit constraints are divided into three: quantity constraint, risk constraint and transaction cost constraints. Quantity constraints is a supply side constraint while risk and transaction cost are demand side constraints. Quantity constraints is when the borrower demand for credit is greater than what the lender is willing to supply. Here, the lender may give a partial loan or do not give at all to the borrower. In addition, non-applicants who perceived they will be rejected by the lender based on previous experiences or because they have inadequate collateral are classified also under quantity constrained households.

Risk rationing happens when the potential borrower who has a demand for credit do not apply because s/he fears that there will be a loss of his or her collaterals. Thus, the borrower withdraws from the credit market space so as not to lose his/her collaterals. Transaction cost which is also a demand side constraint is that in which a borrower has a demand for credit but will not apply because of the cost of borrowing. The cost of borrowing may be that the loan application is time consuming, there is complicated procedure and processing, distance or access to lender is difficult or the interest rate is high. While credit unconstrained household are those that receive the full amount of credit they applied for or those that did not apply at all because they have no demand for it.

3. Methodology

3.1 The Study Area

The study was carried out in Southwest, Nigeria. The South West Nigeria consists of six (6) states namely Ekiti, Lagos, Ogun, Ondo, Osun and Oyo. It lies between longitude 2° 31' and 6° 00'E and latitude 6°21' and 8° 37'N with a total land area of about 77,818 km^2 (Ojo and Baiyegunhi, 2020). The South West Nigeria is bounded by Edo and Delta States in the east, Kwara and Kogi States in the north, Republic of Benin in the west, and the Gulf of Guinea in

the south. The climate is equatorial with wet and dry seasons and relatively high humidity. Many people in the southwestern region engage in farming, production and processing, trading and civil service.

3.2 Sampling Procedure and Data Collection Method

A multistage sampling procedure was employed. Two states out of the six states in South West Nigeria were selected through random selection. The states randomly selected were Oyo and Ondo States, this is the first stage. In the second stage, four Local Government Areas (LGAs) were randomly selected each from Oyo and Ondo States, to make a total of 16 LGAs. While the third stage involved the random selection of five villages from each of the LGA, totaling 40 villages. The fourth stage then involved the selection of eight households from each of the villages, giving a sample size of 320 households. Primary data was employed in this study. The data was collected with the aid of pre-tested and structured questionnaire.

3.3 Analytical Techniques

As stated earlier, DEM was chosen because it can identify both the binding (quantity constraints) and non-binding constraints (risk and transaction cost constraints) of each household, it is also able to identify credit constraints status of even non borrowers and that cannot be captured by indirect method. A household was categorized as credit unconstrained if such households received full loan when they apply for loan. In addition, if a household have no need for loan and did not apply, they fall also under credit unconstrained households. Quantity constrained households were those that received either a partial loan or those that their credit application was rejected. Furthermore, those that did not apply because of the fear of rejection were also categorized as quantity constrained households. While risk constrained households were those that did not apply for credit because of the fear of losing collaterals. Transaction cost constrained households were those that did not apply because of high transaction cost, complicated and time-consuming processing.

Furthermore, the household credit constrained condition is estimated by a multinomial logit function. Following Chadhuri and Cherical 2012; Khonje et.al., 2018; Let S_a be the utility variable that is latent and cannot be directly observed

$$S_{ia} = \beta X_{ia} + \xi_{ia} \tag{1}$$

$$S = \begin{bmatrix} 1 \text{ if } S_{ia} > & Max_{c \neq 1} & S_{ic} \\ \vdots & \vdots & \vdots \\ A \text{ if } S_{ia} > & Max_{c \neq a} & S_{ic} \end{bmatrix} \tag{2}$$

where X_{ia} is the vector of independent variables that represent household socio economic characteristics. β is the vector of the parameter to be estimated and ξ_{ia} is the random error term.

The ith household will choose or fall under one category, j provided that the expected benefit or utility is greater than an alternative choice (c). We assume that our observed X in equation (1) does not correlate with the error term ε and that ε are independent and identically distributed (Gumbel distributed). The probability that the household will fall under any of the four-credit constraint category (the four-credit category are: unconstrained, risk constraints, transaction cost constraints and quantity constraints) can be expressed by a multinomial logit model stated as:

$$P_{ia} = \frac{\exp(\beta_a X_{ia})}{\sum_{c \neq 1}^{a} \exp(\beta_c X_{ic})} \tag{3}$$

where P_{ia} is the probability that the ith household will fall into any of the 'a' categories, 4 categories, a=1,2,3,4 that is unconstrained households, a=1, risk constrained households, a=2, transaction cost constraints, a=3 and quantity constraints households, a=4.

X_{ia} is household i characteristics and β_a is the vector of parameter relating to category a. However, unconstrained households a=1, becomes the reference category or base outcome.

Our explanatory variables are: Age of the household head (measured in number of years), Gender of household head (expressed as a dummy; 1= male and 0= female), Educational level of household head (measured as no of years of formal education), Household size (expressed as numbers), Off farm income (expressed as a dummy; 1= yes and 0= no), Social capital (no of association they belong to), Extension Services (expressed as a dummy; 1= yes and 0= no), Farm size (size of farm in hectares), Dependency ratio (no of dependents to total household size), Repayment capacity (Debt to income ratio), Pay last loan back (expressed as a dummy; 1= yes and 0= no) and Land ownership (expressed as a dummy; 1= yes and 0= no)

4. Results and Discussion

4.1 Credit Constraints Status of Farm Households

The distribution of credit constrained households and the unconstrained household is given in Table 1. 30.94% of the households are credit unconstrained while 69.06% of the households are credit constrained. This depicts that over two third of farm households in Southwest Nigeria are credit constrained. The table further shows the extent of their constraints. 17.81% of the households are quantity constrained, 21.25% are risk constrained while 30% are transaction cost constrained. Therefore, the farm households in the study area are more constrained in transaction cost. In the same vein, the result revealed the households are constraints more by demand side factors (risk constraints and transaction cost constraints) than supply side (quantity constraints). This is similar to the findings of Balana and Oyeyemi (2020).

Table 1. Credit Constrained Status of Farm Household

Constraint Status of Farm Household	Frequency	Percentage
Credit Unconstrained	99	30.94
Credit Constrained	221	69.06
Total	**320**	**100.00**
Credit Unconstrained	99	30.94
Quantity Constrained	57	17.81
Risk Constrained	68	21.25
Transaction Cost Constrained	96	30.0
Total	**320**	**100.0**

4.2 Determinants of Farm Household Credit Constrained Conditions

Credit constrained household was used as the base category and the effect of each independent variable on the credit constraints status is explained against the base category (Table 2). Access to extension service was positive and statistically significant for the three credit constraints status, showing that household that had access to extension service may likely fall into any of the three credit constrained categories.

Table 2. Multinomial Logit Regression Results

Constraints	Coefficient	Standard Error	Z	P>[Z]
Risk Constrained				
Age	.019623	.0242892	0.81	0.419
Sex of household head	-.6567622	.8646832	-0.76	0.448
Education	.0401195	.0653941	0.61	0.540
Household size	-.0493977	.0748858	-0.66	0.509
Off farm income	-.6985163	.5158356	-1.35	0.176
Social Capital	.1069012	.1392769	0.77	0.443
Extension Services	1.814375	.6669172	2.72	0.007***
Farm size	-.0033335	.0407934	-0.08	0.935
Dependency ratio	.1005749	.0956524	1.05	0.293
Repayment Capacity	-157.034	26.8635	-5.85	0.000***
Pay Last loan back (repayment history)	-5.826808	.9199161	-6.33	0.000***
Land ownership	-1.177894	.6659202	-1.77	0.077*
_cons	1.301646	1.906672	0.68	0.495
Transaction Cost constrained				
Age	.0387956	.025731	1.51	0.132
Sex of household head	-1.536415	.8334577	-1.84	0.065*
Education	.1041878	.0680415	1.53	0.126
Household size	-.001339	.0786906	-0.02	0.986
Off farm income	-.8539497	.5045842	-1.69	0.091*
Social Capital	.0734413	.138318	0.53	0.595
Extension Services	1.878616	.6658598	2.82	0.005***
Farm size	-.0302042	.048261	-0.63	0.531
Dependency ratio	.1629258	.0919785	1.77	0.077*
Repayment Capacity	2.581297	1.569652	1.64	0.100
Pay Last loan back (repayment history)	-21.70359	.5566632	-38.99	0.000***
Land ownership	-.7875773	.6860385	-1.15	0.251
_cons	.3223555	1.971005	0.16	0.870
Quantity Constrained				
Age	-.0064548	.0228756	-0.28	0.778
Sex of household head	-.3320877	.7154754	-0.46	0.643
Education	-.0654327	.063338	-1.03	0.302
Household size	-.0553601	.0954895	-0.58	0.562
Off farm income	-.7664812	.464746	-1.65	0.099*
Social Capital	.0810217	.1291998	0.63	0.531
Extension Services	1.074933	.5680024	1.89	0.058*
Farm size	-.0705181	.0799938	-0.88	0.378
Dependency ratio	.0532644	.0908332	0.59	0.558
Repayment Capacity	2.898828	1.712704	1.69	0.091*
Pay Last loan back (repayment history)	-2.39533	.4709208	-5.09	0.000***
Land ownership	-.8772247	.5294595	-1.66	0.098*
_cons	2.836759	1.793176	1.58	0.114

Note: Number of obs = 320 ; Wald chi2(36) = 7158.02 ; Prob > chi2 = 0.0000Log pseudolikelihood = -323.61184 ; Pseudo R2 = 0.2567; ***,**, * denotes significant at 1%, 5% and 10% respectively

Payment of last loan back was negative and statistically significant for risk constrained, transaction cost constrained, and quantity cost constrained households. The result revealed that the households who paid their last loan back (good repayment history) are significant less likely to be constrained in any constraints category.

Land ownership was statistically significant for risk constraint and quantity constraints but not for transaction cost constraints, however, with different signs. Households who own lands are less likely to be risk constrained compared to their counterparts who do not have. This is because land can be used as collateral especially for formal loan. However, the variable was positive for quantity constraint, that is households who own lands may likely suffer quantity constraints. This is because most informal loans do not require ownership of land to grant loan, and the loan accessed may be small in quantity to meet household credit need, therefore, they likely suffer quantity constraints.

Similarly, Repayment capacity was not statistically significant for transaction cost constraints but statistically significant for risk constraint (1%) and quantity constraints (10%). It is to be noted that it is however, with different signs. Thus, households who had a higher debt to income ratio are less likely to be risk constrained. The reason maybe that the household has possession of an asset that can be used as collateral. While households who had a higher debt to income ratio are more likely to be quantity constrained. This may be true, because with a higher debt to income ratio, it would reduce the loan size that the lender would grant and therefore these households fall into quantity constraints category.

Sex of the household head was negative and significant for only transaction cost constraint but not for the rest. The result showed that household headed by females are more likely to be transaction cost constrained than their male counterparts. In addition, Dependency ratio was positive and significant for only transaction cost constrained, thus household with a higher number of dependents to total household size are likely inclined to be transaction cost constrained.

Off farm income was significant for both transaction cost constrained and quantity cost constrained households, the direction is negative. The result implied that the higher the off-farm income of household, the lower the chance of the household will be transaction cost constrained and quantity cost constrained.

4.3 Post Estimation Marginal Effects of Multinomial Logit Model

The marginal effect of the multinomial logit regression was carried out (Table 3). The marginal effect measures the effect of a unit change in independent variables on the probability of the farm household being credit constrained in each of the four categories.

The coefficient of land ownership was statistically significant at 10% for both credit unconstrained and quantity constrained households, however with different signs. For credit unconstrained households, it was positive. Therefore, a percent increase in land ownership by households will increase the likelihood of a household becoming credit unconstrained by 23.7% while for quantity constrained household, it was negative and thus, a percent increase in land ownership by quantity constrained households will reduce the likelihood of a household becoming quantity credit constrained by 22.6% and vice versa. This showed that households who had ownership of lands were likely to credit unconstrained and also not be quantity constrained, this also means unconstrained.

Table 3. Marginal Effects of the Variables in the Estimated Multinomial Logit Model

Variables	Marginal Effects	Standard Error	Z	P> [Z]
Unconstrained				
Age	-.0014532	.0059315	-0.25	0.806
Sex of household head	.1116857	.1786303	0.63	0.532
Education	.0108881	.0156116	0.70	0.486
Household size	.004633	.0271977	0.17	0.865
Off farm income	.1820283	.1156885	1.57	0.116
Social Capital	-.0181053	.0322606	-0.56	0.575

Farm size	.0179574	.0193752	0.93	0.354
Dependency ratio	-.0143414	.0224874	-0.64	0.524
Land ownership	.237043	.1315181	1.80	0.071*
Repayment Capacity	.5735339	.5756958	1.00	0.319
Pay Last loan back (repayment history)	.6853853	.1167626	5.87	0.000***
Extension Services	-.2711071	.1385736	-1.96	0.050**
Risk Constrained				
Age	.0002537	.0003589	0.71	0.480
Sex of household head	-.0083046	.0116459	-0.71	0.476
Education	.0009796	.0008732	1.12	0.262
Household size	-.0000451	.0009965	-0.05	0.964
Off farm income	-.0054375	.0063791	-0.85	0.394
Social Capital	.0009073	.0015106	0.60	0.548
Farm size	.0003019	.0007343	0.41	0.681
Dependency ratio	.0010128	.001422	0.71	0.476
Land ownership	-.0099448	.0098871	-1.01	0.314
Repayment Capacity	-2.555042	.7681652	-3.33	0.001***
Pay Last loan back (repayment history)	-.0676126	.0329236	-2.05	0.040**
Extension Services	.0193535	.0122351	1.58	0.114
Transaction cost constrained				
Age	.0002055	.0001156	1.78	0.075*
Sex of household head	-.0076984	.0037622	-2.05	0.041**
Education	.0006959	.000297	2.34	0.019**
Household size	.0003367	.0003709	0.91	0.364
Off farm income	-.0027608	.0021919	-1.26	0.208
Social Capital	.0001576	.0005178	0.30	0.761
Farm size	-.0000619	.0002716	-0.23	0.820
Dependency ratio	.0006678	.0004148	1.61	0.107
Land ownership	-.0014517	.0030841	-0.47	0.638
Repayment Capacity	.0206923	.0088711	2.33	0.020**
Pay Last loan back (repayment history)	-.1097115	.0160367	-6.84	0.000***
Extension Services	.0071225	.0026282	2.71	0.007***
Quaantity Constraints				
Age	.0009941	.0058271	0.17	0.865
Sex of household head	-.0956827	.1757825	-0.54	0.586
Education	-.0125636	.0153662	-0.82	0.414
Household size	-.0049246	.027067	-0.18	0.856
Off farm income	-.1738299	.1142375	-1.52	0.128
Social Capital	.0170404	.0313153	0.54	0.586
Farm size	-.0181973	.0198959	-0.91	0.360
Dependency ratio	.0126608	.0223914	0.57	0.572
Land ownership	-.2256465	.1303997	-1.73	0.084*
Repayment Capacity	1.960816	.5767287	3.40	0.001***
Pay Last loan back (repayment history)	-.5080612	.1125432	-4.51	0.000***
Extension Services	.2446312	.1352499	1.81	0.070*

Note: ***,**, * denotes significant at 1%, 5% and 10% respectively

The payment of last loan back that is repayment history is statistically significant for all status. It was positive and significant at 1% for unconstrained households while it was negative and significant at 5%, 1%, 1% for risk, transaction cost and quantity constraints respectively. A percent increase in the payment of last loan back will increase the chance of the household to be credit unconstrained by 68.54%. In addition, a percent increase in the payment of last loan back will reduce the chance of the household to be risk, transaction cost, and quantity credit constrained by 6.8%, 11%, 50.8% respectively. Therefore, households who do not have good repayment history will be credit constrained, this is because bad repayment history will make lenders turn them down or no prior repayment history may likely reduce the loan size that can be offered.

Access to Extension service is negative and statistically significant at 5% for credit unconstrained households. The result showed that a percentage increase in the access to extension services will reduce the probability of household to be credit unconstrained by 27.1 %. In addition, access to extension services was positive and statistically significant at 1% and 10% for transaction cost constrained and quantity constrained respectively but not significant for risk constrained households. A percent increase in access to extension service will increase the probability of the household to be transaction cost constrained and quantity constrained by 0.7% and 24.5% respectively. The reason for this maybe there are not enough agents to give relevant information on credit packages. This result is in agreement to the findings of Ojo, Baiyegunhi and Salami (2019).

Repayment capacity (debt to income ratio) is negative and statistically significant at 1% for risk cost constrained but positive and statistically significant at 5% for transaction cost constrained and 1% for quantity cost constrained households. As the debt to loan ratio of the household increases it will increase the probability of the household to be transaction cost constrained by 2.07%, the household will have to spend more money on transaction cost to look for lender facilities that can borrow him even with his prevailing debt to income ratio. For example, a household head that needs a certain amount but cannot get from lenders from his present community because he has a high debt to loan ratio, will have to source for loan in another place, this may increase his transaction cost that he will spend to obtain that loan. For quantity constrained category, a percentage increase in the debt to loan ratio will increase the probability of the household to be quantity constrained. The higher debt to income ratio household may likely default, therefore lender may be skeptical in giving funds or may give only a part and therefore such households becomes quantity constrained.

Age is positive and statistically significant at 10% for transaction cost constrained only. As age of the household head increases, the probability that the household will be transaction cost constrained increases by 0.02%. The reason for this maybe that older household heads may tend not to be interested in complicated and time-consuming procedures associated in getting a loan as they grow older. In addition, most formal loan are the ones that have complicated and time-consuming procedures, older household head may then be interested in informal loan that can easily be accessible. Furthermore, education was positive and statistically significant at 5% for transaction cost constrained households. The result showed that a unit increase in years of formal education may increase the likelihood of the household to face transaction cost constraints. The reason for this may be that educated household heads may be aware of the total cost of transaction cost including application fee, waiting time, paper work cost and may decide he is better off not borrowing and thus becomes credit constrained as a result of transaction costs. Sex of the household head was negative and statistically significant at 5%. The result pinpoints that male headed households are less likely to be transaction cost constrained compared to female headed households in the rural credit market space. This is similar to the findings of Baiyegunhi (2008), Omonana et. al. (2010) for constrained households.

4. Summary

The results from the direct elicitation approach showed the distribution of credit constrained households and the credit unconstrained households. It revealed that 30.94% of the households were credit unconstrained while 69.06% of the households were credit constrained suggesting that credit constraint is a major issue in the study area. A further breakdown of the type of constraint revealed that 17.81% of the households were quantity constrained, 21.25% were risk constrained while 30% were transaction cost constrained. Thus, transaction cost account for a higher percentage of total credit constrained households.

The factors affecting each credit constrained condition was analysed using multinomial logit model. The coefficients of repayment capacity, pay last loan back (repayment history), and land ownership will reduce the likelihood of household being risk constrained while access to extension service will increase the likelihood of the household to be risk constrained.

The coefficients of sex of the household head (male headed household), off-farm income, pay last loan back (repayment history) will reduce the chance of household being transaction cost credit constrained while access to extension service, dependency ratio will increase the likelihood of the household to be transaction cost constrained. In addition, the coefficients of off farm income, pay last loan back (repayment history), and land ownership will reduce the likelihood of household being quantity constrained while access to extension service and repayment capacity will increase the chance of the household to be quantity constrained.

5. Conclusion and Recommendation

This study revealed that credit constraints are a major issue in farm households in Nigeria. Majority of farm households in the study area were credit constrained. The study further showed the nature of the constraints is more of demand side constraints than supply side. Households were mainly constrained in transaction cost, followed by risk constraints and lastly quantity constraints. Furthermore, across all the credit constraints status, good repayment history (payment of their last loan back) will reduce credit constraints while access to extension service will increase it. In addition, households are likely to reduce risk and quantity constraints if they have good repayment capacity and own lands. Also, households are likely to reduce transaction cost constraints if they are headed by males, have off farm income and have fewer dependents.

Thus, strong bureaucracies and complicated procedures associated with credit accessibility and availability should be removed to enable farm households' access credit easily. Microfinance units and community banks with ease of credit transaction should be established in local government areas and in rural communities to reduce credit constraints for farm households. Extension services needs to be strengthened, extension agents need to be equipped with updated credit information so as to reduce information gap on credit accessibility and availability. Farm households must be enlightened about the importance of good repayment history so as to increase their access not only to get loan regularly but also help to increase their loan size. Farm households also need to be educated on the benefits of having an off-farm income. Off farm income activities should also be encouraged in farm households to reduce credit constraints.

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