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THE PATTERNS AND DETERMINANTS OF AGRICULTURAL CREDIT USE AMONG FARM HOUSEHOLDS IN OYO STATE, NIGERIA

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ABSTRACT

The study examined the patterns and determinants of agricultural credit use among farming households in Oyo State, Nigeria. The primary data used for the study were obtained from a cross sectional survey of 114 farm households drawn by multi-stage random sampling technique. Both descriptive statistics and multiple regressions were used to analyze the data obtained. The study revealed that 47.4% of farm households in the State were in the age bracket of 51-60 years with mean age of 58 years while majority (86.8%) were farmers. Also, 48.2% had no formal education and 22.8% had between 7-12 years of formal education. Over half of the farm households (58%) maintained a household size of 5 – 8 with mean size of five while 27.2% and 26.3% had between 11-20 years and 21-30 years of farming experience. In addition, 52% of the respondents in the State patronized the cooperative societies with mean loan requested as ₦108,157.89, mean loan released as ₦97,763.15 and mean loan repaid being ₦70,898.24. The major constraints faced by the rural farm households in accessing loans include high interest rate (21.9%) and lack of collateral (14.9%). Farm size ($p<0.01$), membership of a social organization ($p<0.01$), number of adult males in households ($p<0.01$) and off farm income ($p<0.05$) had positive significant influence on the amount of credit the household can secure. The adjusted R^2 of 60.7% indicates that 60.7% of the variations in the amount of credit/loan obtained were explained by the specified variables in the model. The study recommends that government should organize, strengthen and harmonize the activities of the various cooperative societies with the aim of making them more effective in microcredit utilization.

Keywords: Farm households, Determinants, Multiple regressions, Agricultural credit, Oyo State, Interest rate, Multi-stage sampling.

Contribution/ Originality

The study is one of very few studies which have investigated the pattern of use of credit among farm households in Oyo State, Nigeria for purposes of farming and non-farming activities as well as identifying factors having significant influence on the amount of credit the farmers can access in their locality.

1. INTRODUCTION

A number of scholars (Carter and Wiebe, 1990; Hazarika and Alwangi, 2003) among others have argued that agricultural development is a pre-condition for the development of the Nigerian economy because of the important roles of the sector. The sector employs about two-thirds of the country's total labor force and provides a livelihood for about 90 per cent of the rural population. As such, in order to re-direct the economy and ensure that agricultural production is boosted, several government policy measures have been taken at various times to inject capital into the agricultural sector. From 1973 to date, some of the programmes which have been launched by successive governments are Nigeria Agricultural and Cooperative Bank (NACB) established in 1973, Rural Banking Scheme (RBS) established in 1977, Agricultural Credit Guarantee Scheme Fund (ACGSF) established in 1978, Operation Feed the Nation (OFN) established in 1979, and Green Revolution Programme (GRP) established in 1981. These programmes were meant to avail the agricultural sector the opportunity to use better production technology to pave way for increased agricultural production (Aihonsu, 2001). The Nigeria Agricultural Cooperative Bank (NACB) was later changed to Nigeria Agricultural Cooperative and Rural Development Bank (NACRDB) while Agricultural Credit Support Scheme (ACSS) was introduced in 2006 with the aim of providing credit to farmers, cooperative societies and other rural economic actors to enable them engage in meaningful productive economic activities (Attah, 2008).

According to Odu (1996), credit availability assists in procuring physical inputs, which can induce large productive capacity. Its provisions are in recognition of the industry as the main source of livelihood of large sectors of population and the great difficulties of accumulating capital at low levels in that sector. Credit could be secured either through formal or informal sources. However, due to the high interest rate charged by formal institutions especially commercial and micro-finance banks in giving out loans, it is difficult for small scale farmers to access credit from this source. As a result the informal sector becomes the next alternative for farmers seeking for credit. The informal market receives wide patronage because of the accessibility and flexibility of services, but the loans are usually short term since the scale of operation of the average individual lender is small. Despite efforts at providing microcredit in the past through the creation of agricultural development banks, special lending schemes, and the support of the growth of cooperatives and other self-help groups (SHGs), the supply of micro-credit in Nigeria is still inadequate in relation to demand. This suggests that there is some inefficiency in microfinance operations in Nigeria due to some institutional inadequacies such as undercapitalization, inefficient management and regulatory and supervisory loopholes. This invariably has inhibited the flow of

micro-credit into agriculture (Adeyemi, 2008). This paper therefore is designed to assess the pattern of use of the various sources of credit and determine the factors affecting the amount of credit received by farm households in the study area.

2. MATERIALS AND METHODS

This study employed a multi stage sampling procedure to select 114 farm households in Oyo State, in the South Western zone of Nigeria. Oyo State is made up of 33 Local Government Areas with 3 senatorial districts. It has an area of about 28, 454 square kilometers and a total population of 5,591,589 according to census figure of 2006 (National Bureau of Statistics, 2006). It lies within latitude 8^{o}E and longitude 4^{O}E and exhibits the typical tropical climate of averagely high temperatures, high relative humidity and generally two rainfall maxima regimes during the rainfall period of March to October.

The first stage of the sampling technique is the random selection of Ogbomoso and Ibadan-Ibarapa Agricultural Development Programme (ADP) zones. This is followed by the selection of three blocks out of the six blocks from the Ibadan- lbarapa zone and two blocks out of the five blocks from the Ogbomoso zone to give a total of five blocks. The next stage is the random selection of two cells from each block selected from the zones to give 10 cells. The fourth stage was the random selection of two farming communities from each of the cells selected while the final stage was the random selection of eight farm households in each village that falls within the farming communities selected. Only data collected from 114 farm households that used credit were included in the final analysis. Descriptive and Multiple regression analyses were adopted to assess the pattern of use and the factors determining the amount of agricultural credit the farm households are able to access from the various sources available to them. The model used is specified as

$Y_i = bo + biXi + \varepsilon_i$

Where: Yi = Represents the amount of credit obtained by farm households.

X_1 = Farm size (hectares), X_2 =Highest educational level (years of formal schooling)

X_3 = Farming experience (years), X_4 = Age of household head s(years), X_5 = Sex (male = 1, female = 0), X_6 = Number of adult males in household, X_7 = Number of adult females in household, X_8 = Off farm income (₦), X_9 = Previous credit rescheduled (credit rescheduled = 1 and 0 otherwise). This was used to represent the credit history of the borrower. A farmer who default or rescheduled the payment of his previous loan will likely be denied access to other loan. X_{10} = Membership of a social organization (Member of a group=1 and 0 otherwise), εi = error term

Table-1. Socio-economic Characteristics of respondents

Variables	Frequency	Percentage		
Main Occupation			**Total**	**%**
Farming	99	86.8	196	84.8
Civil Service	5	4.4	11	4.9
Business	4	3.5	7	3.0
Artisan	5	4.4	16	6.9
Others	1	0.9	1	0.4
Total	**114**	**100**	**231**	**100**
Farming Experience				
1-10	9	7.9		
11-20	31	27.2		
21-30	30	26.3		
31-40	29	25.4		
41-50	14	12.3		
51-60	1	0.9		
61-70	-	-		
Total	**114**	**100**		
Mean Experience	29			
Years of Formal Education				
No formal education	55	48.2		
1-6	24	21.1		
7-12	26	22.8		
13 and above	9	7.9		
Total	**114**	**100**		
Mean education	6.4			
Households Size				
1-4	45	39.5		
5-8	67	58.7		
9-12	2	1.8		
13 and above	-	-		
Total	**114**	**100**		
Age (yrs)				
1-30	-	-		
31-40	-	-		
41-50	26	22.8		
51-60	54	47.4		
61-70	30	26.3		
71& above	4	3.5		
Total	**114**	**100**		
Mean Age	**58**			
Farm Size (ha)				
< 0.99	10	8.8		
1.00-1.99	38	33.3		
2.00-2.99	33	28.9		
3.00-3.99	9	7.9		
4.00-4.99	11	9.6		
5.00-5.99	9	7.9		
6.00 & above	4	3.6		
Total	**114**	**100**		
Mean size	**2.4**			

Source: Field Survey Data, 2010

3. RESULTS AND DISCUSSIONS

3.1. Description of the Socio-Economic Characteristics of Farm Households in the Study Area

The study as presented in Table 1 revealed that 47.4% of the farm household heads sampled in Oyo State have their age in the bracket of 51-60 years with mean age of 58 years. Majority (86.8%) of them were involved in farming business as their main occupation with 48.2% not having any formal education while 53.5% had between 11-30 years of farming experience. Furthermore, over half of the farm households maintained a household size that is between 5-8 with mean farm size of 2.4ha and mean farm income of ₦356,024.

3.2. Sources of Agricultural Credit in the Study Area

The major sources of credit available to farm households in the study area as shown in table 2 include cooperative societies, government agencies, micro- finance banks, commercial banks, Non-Governmental Organization (N.G.O), friends and relatives and private money lenders. Over half (52%) of the farm households in the State patronized the cooperative societies with mean credit applied for as ₦108,157.89, mean credit released as ₦97,763.15 and mean credit repaid as ₦70,898.24 while 0.57% and 1.71% farm households obtained credit facilities from Commercial banks and private money lenders respectively. The obvious reason for the high patronage was because majority of the households were members of cooperative societies where they contribute certain amount of money regularly. In addition, interest rate was not charged arbitrarily and all members had access to money contributed once the conditions laid down are met. Therefore, any policy measure by the government on credit issues should take into account the activities of the various cooperative societies in order to ensure they are effective in their credit delivery to farmers.

Friends and relatives were the second important source of credit commonly patronized due to the ease of accessing loans and sometimes being interest free. However, the amount of loanable fund available to borrow was usually small and may not meet the needs of an average farm household.

3.3. Usage of the Credit Sum Accessed

The usage of the credit sum secured by the farm households from the various sources are presented in table 3. The loan sum obtained was used either for farming, non-farming business or to meet other household needs including consumption. However, because of the prominent role played by farming among the farm households in the State, a greater percentage of the loan secured was used for crop production compared to non-farm business and household needs. The major constraints faced by the rural farm households in accessing loans include high interest rate (21.9%), lack of collateral (14.9%) and unduly long procedure and processing (13.2%).

Table-2. Distribution of Households by credit sources usage, mean amount of credit applied for, released and repaid in Oyo State.

Sources of credit	Credit usage/ %	Mean credit applied for ₦	Mean credit released ₦	Mean credit repaid ₦
Friends and relatives	37 (21.14%)	16,008.77 (2,679.78)	13,903.50 (,3623.30)	8,513.15 (1,778.51)
Private money Lender	3 (1.71)	789.47 (50.65)	789.47 (50.65)	460.52 (112.54)
Cooperative Societies	91 (52.00%)	108,157.89 (10,105.22	97,763.15 (8,172.64)	70,898.24 (6,639.86)
Government Agencies	10 (5.71%)	4,824.56 (1,735.78)	4,692.98 (1,706.68)	3,017.54 (1,205.73)
Micro finance Banks	16 (9.14%)	16,771.91 (2,433.01)	16,771.91 (1,433.01)	11,807.01 (2,351.96)
Commercial Banks	1 (0.57%)	3,070.17 (1,198.72)	2,719.29 (777,63)	1,140.35 (634.45)
Non-Governmental Organization	17 (9.73%)	1,973.68 (598.23)	1,973.68 (498.23)	771.92 (41.49)

Source: Field Survey Data, 2010.

Figures in parenthesis are the standard error of mean and percentage of credit usage

Table-3. Distribution of households by credit usage in Oyo State

Sources of credit	Mean amount of credit used for farming purpose (₦)	Mean amount of credit used for non-farming purpose (₦)	Mean amount of credit used for household needs (₦)
Friends and relatives	17,236.84 (3,714.67)	3,102.56 (1,388.46)	5,184.21 (1,526.20)
Friends and Relatives	614.03 (42.66)	256.41 (17.73)	87.71 (11.36)
Cooperative Societies	74,710.52 (10,411.31)	29,816.23 (3,244.71)	10,692.98 (2,506.92)
Government Agencies	4,035.08 (1,479.77)	128.20 (8.70)	219.29 (19.26)
Micro finance Banks	14,649.48 (3,357.26)	9,145.29 (2,620.58)	1,271.92 (542.94)
Commercial Banks	1,025,64 (824.04)	350.87 (19.50)	170.94 (18.49)
Non-Governmental Organization	1,710.52 (761.11)	2,641.02 (901.57)	87.72 (15.30)

Source: Field Survey Data, 2010.

Figures in parenthesis are the standard error of mean

3.4. Result of the Regression Analysis

Out of all the variables regressed, farm size ($p<0.01$), Age($p<0.01$), number of adult males in the households ($p<0.01$), membership of a social organization ($p<0.01$), farming experience ($p<0.05$) and off farm income ($p<0.05$) have positive significant influence on the amount of credit the household can secure except for age of the household heads. These conform *to a prior*

expectation. This implies that as the farm household heads get older, his involvement in farming activities and his ability to access credit decreases because most credit agencies will prefer to give loan to younger farmers than older ones. Farmers with relatively long years of experience in farming will have better knowledge of farming and ability to use necessary inputs efficiently.

Membership of associations among farming communities enables them to have access to credit and productive inputs such as improved seeds, fertilizer and tractor use which are better sought on group basis than individually. Farm households with access to other sources of income outside of farming will likely be considered for credit because the possibility of paying back the loan granted is higher when compared to other farm households without off farm income. Farm households having large farm size under cultivation with higher number of adult males will possibly have access to more credit because more adult males in a household meant that more quality labour would be available for carrying out farming activities thus making the production process more efficient.

The adjusted R^2 was 60.7% which means that 61% of the variations in the amount of credit obtained were explained by the specified variables in the model. The F-value was also significant at 1 percent which shows the goodness of fit of the functional form chosen for the analysis.

Table-4. Regression analysis result

Variables	Linear Coefficient	t- values
X_i= Farm size	0.319***	3.671
X_2= Highest education level	0.075	0.660
X_3= Farming experience	0.235**	2.044
X_4=Age of household head	-0.085***	-3.126
X_5= Sex	0.062	0.630
X_6= Adult males in households(no)	0.065***	2.706
X_7= Adult female in households(no)	-0.072	-0.786
X_8= Off farm income	0.115**	2.157
X_9= Previous loan rescheduled	-0.039	-0.449
X_{10}=Membership of social organization	0.299***	3.549
Constant (bo)	-25.060**	-2.142
R^2		0.628
R^2 (Adjusted)		0.607
F- value		5.459***

Source: Field survey data, 2010

*** = significant at P < 0.01;** = significant at P < 0.05;* = Significant at P< 0.10

4. CONCLUSION

Six different sources of credit were identified in Oyo State while the most patronized source was the cooperative societies from which 52% of the farm households secured credit with mean credit applied for as ₦108,157.89, mean credit released as ₦97,763.15 and mean credit repaid as ₦70,898.24. This shows the importance and popularity of this source in Oyo State. Multiple regression analysis carried out revealed that the amount of credit secured by farm households in Oyo State was significantly influenced by farming experience, off farm income, age of farm

household heads, membership of a social organization and number of adult males in households. This indicates that the amount of credit that can be accessed by farm households in the State increases with increase in any of the regressed factors.

5. RECOMMENDATIONS

Since over half of the rural farm households sampled in the state patronized the cooperative societies, it is recommended that government at both State and Local Government levels should organize, strengthen and harmonize their activities with the aim of making them more effective and functional in credit delivery to rural farmers.

Rural farmers should be encouraged to join community social groups as well as get involved in off-farm activities that can bring additional income to the households. Membership of association will afford the farm households the opportunity to access productive inputs which are better sought by group rather than individual.

Credit delivery mechanism targeting the poor farm households should be developed by government at the three levels of governance to divert substantial and timely credit to rural farmers at reduced interest rate and improve repayment period.

REFERENCES

Adeyemi, K.S., 2008. Institutional reforms for efficient microfinance operations in Nigeria. Central Bank of Nigeria Bullion, 32(1): 26-34.

Aihonsu, S.O., 2001. Bank loan default by small scale farmers in Ogun State, Nigeria. The Ogun Journal of Agricultural Science, 15(1): 11-20.

Attah, A.A., 2008. Banks contribution to agricultural development. The Nigerian Microfinance Newsletter, 6(2): 16-19.

Carter, M.R. and K.D. Wiebe, 1990. Access to capital and its impact on agraria structure and productivity in Kenya. American Journal of Agricultural Economics, 72(5): 1146-1150.

Hazarika, G. and J. Alwangi, 2003. Access to credit plot size and costi inefficiency among smallholder tobacco cultivators in Malawi. Agricultural Economics, 29(2): 99-109.

National Bureau of Statistics, 2006. Census figure by States and local fovernment areas, Nigeria. Available from www.nbs.ng.gov [Accessed July, 2013].

Odu, P.C., 1996. Problem and prospects in agricultural financing in Nigeria under economic deregulation. Central Bank of Nigeria Bulletin, 20(3): 31-48.