

SOCIO-ECONOMICS, DEFAULT RISK AND DETERMINANTS OF ACCESS TO MICRO CREDIT FROM COOPERATIVE SOCIETIES BY RURAL FARM HOUSEHOLDS IN ABIA STATE, NIGERIA

Abstract

This study on socio-economics, default risk and determinants of access to micro-credit from cooperative societies by rural farm households was carried out in Abia state, Nigeria. Longitudinal data on micro credit seeking and repayments for ninety (90) rural farm households in three agricultural zones of the state were collected for 2011 and 2012 farming seasons. The cooperatives and farm households were chosen following cluster random sampling technique. Results indicated 57 of the 90 farm households involved in this study receiving a total of ₦2, 947,140.00 from their cooperative societies and repaid ₦2, 210,230.00 within a required 24 months. The overall repayment performance of 74.99% was thus very good compared to the 23.78% default rate. The numbers of years of farming, taking farming as major occupation, years of farmers' membership to cooperative society, and farmer's deposit/savings in the cooperative society were factors that positively and very significantly ($P < 0.01$) influenced access to loans in the cooperative societies. Another factor that positively but moderately ($P < 0.5$) influenced access to cooperative loans was members demanding for credit after being denied loan(s) from formal sources (spillover demand). The only negative significant factor that moderately influenced access to cooperative loans was default in repaying previous credit. These factors emphasized that devout commitment to ideals of cooperative movement assures access to members of available loans in a cooperative society. Cooperators should participate actively in their union activities, contribute meaningful deposits/savings, and invest accessed loans mainly in quick yielding enterprises and where opportunity exists engage in viable off-farm jobs to earn extra income that enhance their cash flows.

Keywords: Default risks, semi-formal credit, registered cooperative societies, deposits.

1.0 Introduction

Farming in rural Nigeria has widely changed from being activity aimed at providing food and fiber for household subsistence to one providing for the market (commercial farming). Like every competitive commercial engagement, farmers are not able to adequately finance their operations alone with their personal savings and therefore have relied much on funds borrowed from different sources at some varying degrees of accessibility. Accesses to credit have been recognized as one major determinant of economic growth (Thorsten *et. al.*, 2000). Agriculture is considered by fund lending institutions as occupation with great risks, on account of

vulnerability of its enterprises to failures with low coverage of dependable formal insurance policy, especially at level of small scale operation. This have accounted for apathy in lending as expressed by commercial banks in Nigeria (Mbubaegbu, 2011).

There are however many credit sources open to farmers to meet their needs for funds as they shop for credit from formal and informal credit displays and from some semi-formal sources made possible by beneficiaries themselves and/or concerned stakeholders. Formal credit is provided by Governments, corporate finance establishments –commercial banks, development bank (Bank of Agriculture) and microfinance banks; the informal credits are provided by money lenders, farmers groups, non-registered farmers cooperative societies, Rotating Savings and Credit Association (RoSCA), product traders, farm input suppliers and relations of the farmers. The semi-formal sources of farm credit in Nigeria are essentially registered Cooperative societies and Microfinance Institutions owned by Non-Governmental Organizations (NGO-MFIs) (Badiru, n.d; and Babatund, *et. al.*, 2007). Semi-formal credit sources offer relatively lower interest charges and accept flexible collaterals with loans targeted to selected areas and selected type of farmers (who have no access to formal loans) (Guirkinger, 2005). Lenders have to decide loan applicants to favour after considering some factors including costs of the credit and risks associated with the applicants since chance remains unceasingly at work within the credit markets. In like manner, farmers have to decide which sources to approach for loans after considering some conditions attached to the available loans.

Risks in this case are those potential losses incurable by action of entering into credit transactions (likelihood), the probability of occurrence of which can be estimated. These risks among others include loan repayment default, information asymmetry, and decline in farm yield, product price instability, and high interest charges on loans. Loan repayment defaults or default risk in cooperative society loans therefore is that possibility that a cooperative loan beneficiary is unable to meet interest and/or principal repayment obligations on a loan agreement (Abel and Eberly, 2004). Incidences of default on repayments of formal loans have been reported in Nigeria (Njoku and Nzenwa, 1990; Njoku and Odii, 1991; Njoku and Obasi, 1991; Oke, *et. al.*, 2007).

Small-scale farmers in Nigeria have complained of denied access to loans from commercial banks on account of their inability to provide necessary collaterals demanded by the banks (Mbubaegbu, 2011; Osuala *et. al.*, 2012). Formal credit institutions on their part have indicted small scale farm borrowers as customers on who they incur high transaction costs with poor repayment of borrowed funds (Obamuyi, 2007; Agbo and Chidebelu, 2010). To help strengthen farming operations with external funds, farmers have on their part embraced calls to form cooperative societies and pool their deposits/savings for lending to needy members (Adeyemo and Banire, 2005, Babatund, *et. al.*, 2007). Some cooperative societies are not registered and are likened to farmers groups or informal lenders. Registration of cooperatives gives them quasi formal status and permits them to run businesses without hindrances. Registered cooperative societies lend money to their members based on members deposits (their savings), peer collaterals and some other factors that benefit such members (Adeyemo and Banire, 2005; Badiru, n.d). In spite of these inbuilt assurances there are evidences of default risk or credit default with borrowing members of registered cooperative societies (Ojiako and Ogbukwa, 2012). Cooperative societies have rules that govern their operations including giving out their deposits or on-lending facilities as loans to their members or others.

To what extent the observed defaults in loan repayments have hindered access to new loans in cooperative societies have truly not been widely investigated in Nigeria. This study therefore had its specific objectives to: (i) describe household level socio-economic of beneficiaries of farm microcredit from registered cooperative societies in rural Abia State; (ii) assess credit default exhibited by rural farmer beneficiaries of micro credit from registered cooperative societies in the study area; and (iii) determine factors that influenced farmers' access to credit from registered cooperative societies in the state.

2.0 Methodology

2.1 Study Area:

This study was conducted in Abia State, Nigeria. This state is one of the south-eastern states of Nigeria lying between longitudes $04^{\circ} 45'$ and $06^{\circ} 17'$ East of the Greenwich Meridian and latitudes $07^{\circ} 00'$ and $08^{\circ} 10'$ North of the Equator. Occupying an area of 5,833.7 Km² (ABSEEDS, 2004), Abia is located 596 Km away from Lagos and 498 Km away from Abuja,

the Federal Capital Territory (ABSEEDS, 2004). The state with its administrative headquarters at Umuahia has a population of 2,833,999 consisting of 1,434,193 males and 1,399,806 females (FRN, 2007), and is made up of seventeen (17) local Government Areas (LGAs), with three Agricultural zones. The Agricultural zones are Aba, Umuahia, and Ohafia that are inhabited by about 315,910 farm households (ADP, 1995). Abia State is notable for production of tree crops like oil palm, Cocoa, Cashew, and Rubber. Livestock farming in the state produce poultry, pigs, goats, sheep and rabbits. Food crops grown in the state are Cassava, Yam, Rice, Plantain, Banana, cowpeas, vegetables, melon, pineapples and maize. The commonest farming system in Abia State agricultural zones is mixed farming (growing crops and rearing livestock) with most farmers operating on scales that classify them as smallholders. These farmers facilitate their operations by belonging to one cooperative society or another (ADP, 1995).

2.2 Sampling Technique:

Ninety (90) rural farm households who are members of registered cooperative societies were selected using cluster random sampling techniques in rural cooperative societies, chosen from the three agricultural zones of the state. The chosen cooperative societies are Multipurpose Cooperative Society (MPCS) Umuasua and MPCS Ugwu Nkpa from Ohafia agricultural zone; Ulonna South Micro Irrigation MPCS Limited Afugiri and Oganihu Cassava MPCS Itu Oloko from Umuahia agricultural zone; Solace Farmers MPCS Mgboko Umete and Progressive Farmers MPCS Umuara Isiala Okpu from Aba zone. The cooperatives were chosen by random process and formed clusters from which thirty (30) member farm households were randomly chosen from each of Aba, Umuahia, and Ohafia agricultural zones of the State. A member farm household was defined for this study in line with Anderson (2002) as an economic unit consisting of either a single person or a group of persons who live together and depend on common income and within the limits of that income, exercise choices in meeting specific objectives with at least one member describing their major occupation as farming.

2.3 Data Collection:

Longitudinal data were collected for two consecutive farming years (2011 and 2012) from the chosen farmers with the same questionnaire administered to each chosen member farm household by personal interview method. Three enumerators were involved in this exercise,

collecting data simultaneously from cooperative member farm households across the agricultural zones of the state. Information on length of time member households had been in membership to cooperative societies, gender of head of cooperative member household, household farming experience, household size, farm size, deposits in cooperatives, amount of credit sought from cooperative society, amount of loan received from cooperative society, and amount of previously received loan that is in default. Other data gathered with the questionnaire included interest charged on sourced micro loan, amount of borrowed funds repaid, duration (term) of the loan, whether refused credit by formal source and major occupation of the member household.

2.4 Data Analytical Techniques:

A combination of descriptive and inferential statistical tools was used in analyzing the data collected for this study. Frequency, percentages and means were used to describe socio-demographic characteristics of the farm households and specific characteristics of cooperative societies. Factors that influenced farmers' access to micro farm loans from cooperative societies were determined with a limited response dependent variable model- the maximum likelihood multiple regression probit model. This model of limited dependent variable was as introduced by Tobin (1958) and applied by Amamiya (1981) and corrected for bias (Heckman, 1976) in selection of respondents. The model as observed by Anim and Lyne, 1994 has ability to generate bounded probability estimates for each observation and assumes that the underlying error term follows a normal distribution as is the case with continuous variables. This probit model was stated as follows:

$$Y_{ij} = \alpha_i + \beta_j \sum_{k=1}^s H_{ijks} + \varepsilon_{ij} \quad \dots (1)$$

Where the H_{ijks} are vectors of s independent variables of the j th household seeking and using services of funds borrowed from cooperative societies for farm investments; The explained variable Y_{ij} is a vector of binary variables such that $Y_{ij}=1$ if the j th household had access to micro credit, and 0 otherwise. Since Y_{ij} can only assume two different values for accessing micro credit 1 or 0 otherwise.

The expected probability was defined as follows:

$$E(Y_{ij}) = E \left[\alpha_j + \beta_j \sum_{k=1}^s H_{ijks} + \varepsilon_{ij} \right]$$

$$= \alpha_j + \beta_j \sum_{k=1}^s H_{ij} E(H_{ij}) \quad \dots (2)$$

Equation (2) defines the household's and cooperative's characteristics (H_{ij}) likely to influence getting access to micro loans from the cooperatives for farm investment. The empirical model was specified for access to rural cooperatives micro loans for farmers as follows:

$$\begin{aligned} EXP_{ij} = & \beta_0 + \beta_1 \ln(FS_{ij}) + \beta_2 \ln(EX_{ij}) + \beta_3 \ln(OC_{ij}) + \beta_4 \ln(CD_{ij}) + \beta_5 \ln(RC_{ij}) \\ & + \beta_6 \ln(HS_{ij}) + \beta_7 \ln(YM_{ij}) + \beta_8 \ln(GD_{ij}) + \beta_9 \ln(NE_{ij}) + \beta_{10} \ln(PD_{ij}) \\ & + \beta_{11} \ln(IC_{ij}) + \beta_{12} \ln(SV_{ij}) + \varepsilon_{ij} \quad \dots (3) \end{aligned}$$

The independent variables (continuous and binary) are as defined in Table 1.0. The dependent variable for equation (3) is household's chances of getting access to cooperative micro loans as defined in equation (1).

Table 1.0 Description of Variables analyzed by Probit Regression Model

Variable	Variable Type	Expected Sign Eqn. 3	Description of Variable
EXP _{ij}	Binary		1 if jth household got access to loan from Cooperative society for farm investment; 0 if otherwise Eqn. (3);

FS _{ij}	Binary	+	1 if size of farmland is at most 3.0 hectares or number of livestock is at most 50 heads; 0 if otherwise;
EX _{ij}	Continuous	-	Number of years in farming;
OC _{ij}	Binary	+	1 if household major occupation was farming; 0 if otherwise;
CD _{ij}	Continuous	-	Amount of credit sought for farm investment in Naira;
RC _{ij}	Continuous	-/+	1 if refused credit by formal source (spillover farmer); 0 if otherwise;
HS _{ij}	Continuous	+	Household size (a single person or a group of persons living together and depending on common income and within limits of that income, exercise choices in meeting specific objectives);
YM _{ij}	Continuous	+/-	Number of years in membership of cooperative (years);
GD _{ij}	Binary	+/-	1 if male; 0 if otherwise;
NE _{ij}	Binary	+	1 if an old member of Cooperative Society; 0 if otherwise;
PD _{ij}	Continuous	-	Amount of previous credit from Cooperative in default (Naira);
IC _{ij}	Continuous	-/+	Interest charged by cooperative society on borrowed fund in Naira;
SV _{ij}	Continuous	+	Amount Household deposits/Savings in Cooperative Naira.

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206 3.0 Results and Discussion

207 3.1 General Characteristics

208 The characteristics of sampled ninety (90) cooperative farm households in Abia states of Nigeria
209 are as summarized in Table 2.0.

210 Table 2.0 revealed that farm sizes to a good proportion of the farm households (40.0%) was less
211 than one hectare (mean 0.84ha) with only a small proportion (16.7%) cultivating more than three
212 hectares (mean 5.26 ha). Amongst the cooperative farmers households a relatively large
213 proportion (43.3%) cultivated between 1.0 ha and 3.0 ha of farmland with a mean of 2.72ha.
214 These distributions confirm that the farmers in the cooperative societies in the study area were by
215 scale of operation small-scale operators. Ugwumba *et. al.*, (2010) revealed that small sizes of
216 farms amongst smallholders in southeastern Nigeria call for some form of Integration especially
217 to a proportion (47.62%) with some crop-livestock integration potential. One third of households

in the area (33.3%) skewed to at most six members. Less than this proportion (25.0%) of the households however, had larger sizes of at least thirteen (13) members, with a relatively larger proportion (41.7%) housing between seven and thirteen members. The mean size of the farm households ranged from approximately five to fifteen members. Large household sizes have negative implications on effective use of loans and their repayments (Njoku and Obasi, 1991).

Table 2.0 revealed further that there were more male household heads (67.8%) than female household heads (23.2%) of the cooperative farm households in the study area. Amongst these households, 57 or 63.3% had access to cooperative loans with 33 or 36.7% of not having access to the loans. There were 21 or 63.6% of households in cooperative societies that had no access to the loans on account of having not applied for the loans within the period. Not applying for the loan may not necessarily mean that the affected household did not need the loan but may be on account of not fulfilling the internal condition for applying for the loan. In cooperative societies involved in this study, the minimum loan to members was ₦20, 000.00 with some getting as much as ₦60,000.00 depending on some internal criteria. Qualification for these loans requires a member applicant to have deposited (saved) at least 75.0% (₦15, 000.00) of the minimum loans with the cooperative union. Table 2.0 revealed that 15.2% of the non applicants to loans did so because they had not saved the minimum amount required by the union's regulation. Another 27.3% of those denied access had not operated as members for at least one year. These conditions were necessary to enable the union(s) attest to the loan applicant's true membership and his/her commitment to the ideals of cooperative society. Being a member for at least twelve months will help harmonize any asymmetry to internal information co-needed by the union and the prospective borrower. Another reasonable proportion of applicants that were denied access to the loans (57.5%) had not pay off their previous loans from the union(s). Default in repayment of borrowed funds was thus a risk that hindered subsequent demand as well as willingness to grant further loans from a source.

Table 2.0 Characteristics of Cooperative and Farm Households in Abia State Nigeria, 2012

Variable	Number	Meanof	Percentage
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		continuous Variables n=90	(%)
Annual Farm Size (Hectares):			
≤ 1.0	34	0.84	40.0
1.0 – 3.0	36	2.72	43.3
>3.0	20	5.26	16.7
Household Size (Number):			
1- 6	30	4.84	33.3
7 – 13	35	7.91	41.7
>13	25	14.82	25.0
Gender of Household Head			
Male	61		67.8
Female	29		23.2
Access to Loan status:			
Had access to cooperative loan	57		63.3
Had no access to cooperative loan	33		36.7
Reasons for no access to cooperative loan:			
Did not apply for credit	21		63.6
Applied but application was rejected	6		18.2
Just applied, awaiting for reply	4		12.1
Withdrew request after being granted loan	2		6.1
Total	33		100.0
Reason for Rejection of Application For Cooperative Loan			
Did not saved at least ₦15,000.00 as required	5		15.2
Have not operated as member for at least one year	9		27.3
Did not completely pay off previous loan (default)	19		57.5
Total	33		100.0

Source: Field survey: 2012
₦150.00 ≈ US \$1.00

247 **3.2 Accessed Cooperative Loans, Repayment Performance and Defaults**

248 Table 3.0 revealed the volume of credit received by cooperative household members from the
 249 societies involved in this study and their repayment performances.

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252 **Table 3.0 Loan Received, Repayment and Default By Cooperative Societies in Abia State**

Agric. Zone	Cooperative Society	Number of Beneficiaries	Loan Received	Amount Repaid	Percentage Repayment	Amount Not	Percentage Default
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			From coop. (N'000)	(N'000)	(%)	repaid (N'000)	(%)
Ohafia	Umuasua						
	FMCS Isuikwuato	5	175.00	118.00	67.43	57.00	32.57
	Ugwu Nkpa						
	FMCS Bende	9	379.00	251.19	66.28	127.81	33.72
Umuahia	Ulonna South						
	FMCS Afugiri	11	563.00	392.17	69.66	170.83	30.34
	Oganihu cassava						
	FMCS Itu Olokoro	10	507.00	352.30	69.49	154.70	30.51
Aba	Progressive FMCS						
	Umuara Isiala-Okpu	12	719.00	602.45	83.79	116.55	16.21
	Osisioma Ngwa						
	Solace FMCS						
	Mgboko Umuete	10	604.14	530.12	87.75	74.02	12.25
	Obi-Ngwa						
Total		57	2,947.14	2,210.23	74.99	700.91	23.78

Source: Field survey: 2012
N150.00 ≈ US \$1.00

Table 3.0 shows that 57 of the 90 farm households involved in this study received a total of N2, 947,140.00 from their cooperative societies and repaid N2, 210,230.00 within a required 24 months. The overall repayment performance of 74.99% was therefore very good compared to the 23.78% default rate. The high loan repayment seen amongst these farm households could be attributed to two reasons. First, there was the group pressure of cooperatives on their member loan-beneficiaries which compelled such beneficiaries to meet their repayment obligations strictly with no flimsy excuses. Second, there was existence of opportunities for extra income from non-farm sources to farmers in one of the agricultural zones (Aba) of the state. This reason was revealed by distribution of repaid loans by the agricultural zones. Agricultural zones of Ohafia and Umuahia offered least opportunities for off-farm employments to farmers to enable them earn some extra income to help service farm loans. This most likely accounted for high default range of 30.51% to 33.72% posted by farmer-beneficiaries in Ohafia and Umuahia zones compared to low default range of 12.25% to 16.21% posted by farmers in Aba agricultural zone. The reasons for the observed defaults as reported by farmers were, short duration allowed for repayments; and unfavourable farm input/output ratios.

3.3 Determinants of Access to Farmers Cooperative Loans

Table 3.0 shows that the number of years of farming, taking farming as major occupation, years of farmers' membership to cooperative society, and farmer's deposit/savings in the cooperative society are factors that positively and very significantly ($P < 0.01$) influenced access to loans in cooperative societies. This means that highly experienced farmers that had long been members of cooperative societies, and have deposited reasonable sums of money with cooperative societies as savings had unhindered access to loans from the societies. These factors emphasized that devout commitment to ideals of cooperative movement assures members access to available loans in a cooperative society. Other factor that positively influenced access to cooperative loans was members demanding for credit after being denied loan(s) from formal sources (spillover demand). This factor had a moderate but positive significant ($P < 0.5$) influence on access to cooperative loan.

The only negative significant factor that influenced access to cooperative loans was previous credit in default. Truly, a well managed source of loan that crave for sustainable credibility should frown at loan defaults and could freely deny chronic defaulters the access to subsequent loans. This at best is to convince prospective loan applicants of the need to appreciate paying back their debts on schedule. It is important to mention that gender as a factor was not significant in influencing access to cooperative loans. This was on grounds of the principle of no discrimination on members that govern the cooperative movement. Male and female members had equal opportunities to getting cooperative loans provided the member applicant had met other loan management requirements. The goodness-of-fit as measured by the pseudo R^2 shows that the chosen explanatory variables in the probit model explained variations in access to cooperative loans in the state. The log likelihood indicates that the slope coefficient explaining access to loans is significantly different from zero at $p < 0.05$.

Table 3. Bivariate Probit Determinants of Farm Household Access To Cooperative Loans in Abia state.

Independent Variable	Parameter Code	Probit estimator Coefficient	t-value
Constant	β_0	-3.34***	-6.45
Farm Size	FS	0.062	0.471
Number of years of Farming	EX	0.084***	3.44
Major Occupation	OC	0.0018***	9.41
Credit Demanded	CD	-0.0048	-0.072
Refused Credit by Formal source	CR	3.51**	2.92
Household size	HS	-0.016	-0.521
Years of Membership in Cooperative	YM	0.009***	4.324
Gender	GD	1.92	1.371
New Entrant to Cooperative	NE	-1.44	-1.422
Previous Credit in Default	PD	-0.026**	-2.63
Interest Charged on Loan	IC	-0.992	-1.54
Savings/Household Deposits in Cooperative	SV	0.00023***	3.21
Pseudo R ²		0.721	
Log Likelihood		-74.821	

Dependent Variable = Access to Cooperative credit yes=1; Otherwise=0. *** Significant at 1.0%; Significant at 5.0%; Significant at 10.0%.

Source:Field Survey, 2012

4.0 Conclusions and Implications to Policy

Farmers in Abia state, belong to registered cooperative societies where they participate and derive benefits to better their lots. Farm credit generated within these cooperatives is recycled amongst the societies as members borrow and repay. As many as 57 of the 90 farm households involved in this study received a total of ₦2, 947,140.00 from their cooperative societies and repaid ₦2, 210,230.00 within a required 24 months. Though the overall repayment performance was very good there was still concern to remedy the observed default rate. Default in repayment of borrowed funds is a risk that hinders subsequent demand as well as willingness to grant further loans from a source. Socioeconomic factors like numbers of years of farming, taking farming as major occupation, years of farmers' membership to cooperative society, and farmer's deposit/savings in the cooperative society were factors that positively and very significantly influenced access to loans in cooperative societies. Another factor that positively and moderately influenced access to cooperative loans was members demanding for credit possibly as last resort after being denied loan(s) from formal sources (spillover demand). The only negative significant

factor that moderately influenced access to cooperative loans was default in repaying previous credit. There was however no discrimination in granting access to credit by the cooperative societies on basis of gender. This was in line with the principles governing the cooperative movement. The cooperative societies accommodated their members who had no access to formal loans agreeably with the 2005 findings of Guirkingner in rural Peru.

As part of motivational policy, farmers who are yet to join cooperative societies should do so and participate actively in line with agreed principles of the union in order that they enjoy all rights and privileges of being a member. Participation of members in cooperative business should be stimulated by cooperative societies by cooperative societies themselves by allowing members unhindered access to training in enterprise and loan management competencies. Cooperators who benefit from union loans should learn to invest their credit on enterprises that guarantee quick financial returns and where the opportunity arises, should combine farm work with some viable off-farm jobs that allow earning of extra income. This means striving to maintain increased cash flows within the competences of their loan portfolios.

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