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RESEARCH ARTICLE

Influence of Household Factors on Repayment of Group Loans in Farmers' Multipurpose Cooperative Societies in Anambra State, Nigeria

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ABSTRACT

The study examined how the household factors of members of Farmers' Multipurpose cooperative societies influence their abilities to repay group loans. The study was conducted in Anambra State, Nigeria. Data were collected using structured questionnaire that was administered to a total of 296 members of Farmers' multipurpose cooperative societies randomly selected from the three geopolitical zones of the state. Ten selected farmers' household factors were regressed on group loan repayment using multiple regression analysis. Frequency distribution, percentages and means were used to analyze the socio-economic characteristics of the selected farmers as well as those factors that lead to group loan default among these respondents. The regression coefficients from the lead regression function showed that household size, value of assets, off farm income, dependency ratio and total value of loans were household factors significant in influencing group loan repayment. The study also showed that the perception of possible loan forgiveness in the programme, impossibility of foreclosure of assets, failure of other farmers in the group to repay and thinking of the loan as national cake/grant were precursors to delinquency in group loans.

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INTRODUCTION

Rural finance in Nigeria has partly been dominated by policies and programmes that confront the problems of inadequate credit and low repayment among rural investors. Group lending of recent is celebrated as a means of improving repayment largely because of the joint liability contract and its ability in dealing with the problems of information asymmetry, moral hazard and adverse selection that bed evil the rural credit market (Hermes *et al.*, 2006; Karlan, 2007; Ahlin and Townsend, 2007). Group lending is a programme in which loans are made to individual clients who are part of a group, but the members of the borrower group are jointly liable for loans default by individual group members (Sharma and Zeller, 2000). This joint liability may entail a cut off of future credit to groups which do not repay loans and a legal agreement of group members to repay defaulted balances of other group members. In Nigeria, Farmers' multipurpose cooperative societies (FMCS) have become the most preponderant in group lending schemes particularly in the Agriculture sector. As multipurpose societies, they have the potential advantage of satisfying the diverse needs of farmers (credit inclusive). Moreso, the upsurge of theoretical writings confirm joint liability lending as mechanism leading to more and more effective screening, monitoring and enforcement among group members (Sharma and Zeller, 2000; Chowdury, 2005). These group actions, incentives and compositions emerged as a way of reducing default and transaction cost in rural credit markets (Wenner, 1995; Zeller, 1998; Ghatak, 1999; Paxton *et al.*, 2000; Townsend, 2003; Ahlin and Townsend, 2007). Accordingly, international donors, development partners, Federal government of Nigeria and Anambra State government have embraced and spent millions of dollars on agricultural group lending programmes promoted through FMCS (Fadama, National Programme on Food Security (NPFS), Rural Finance Institution Building Programme (RUFIN), State Supervised Agricultural Credit Programme, National Poverty Eradication Programme (NAPEP) and several other Poverty Lending programmes. Despite these outlays, most of these programmes have experienced low loan recovery, high administrative cost and failure to serve large number of small holders (World Bank, 2006). Besides, some economic theorists had questioned the

efficacy of group lending in achieving improved repayment particularly in agricultural credit (Jain, 1999; Morduch, 1999). Empirically, Mkpado and Arene (2007) in their study in Nigeria found that group credit repayments were mixed. Also, Diagne *et al.* (2000) in a study with Malawi Rural Finance Company (MRFC) found that peer monitoring rarely occurs in credit groups, and when it does, not to improve repayments. Again, Paxton *et al*. (2000), Zeller *et al.* (2001), and Onyuma and Ouma (2005) had questioned whether replications of group-based financial institutions in African socio-economic environment would result in the same impacts.

Apart from the mixed results on repayment, these studies on group lending with joint liability had largely focused on the roles of group actions and composition in controlling delinquency. None had succinctly related the borrowing households' varying conditions and abilities to make repayment under the group lending paradigm as important contributors to reducing default in group lending. Particularly for FMCS which has constituted the most widely used and registered form of formal farmers' group in Nigeria. These scenarios have created gaps and provided basis for raising vital research questions – The questions here are how significant for reducing delinquency in group-based agricultural credits are the borrowing household characteristics? What factors empirically account for failure of these group credit programmes in engendering loan repayment despite the robustly canvassed criteria for screening, peer monitoring, enforcement and mutual insurance? The findings of this study will aid policy formulation and redirection, particularly in the design and operation of Rural Finance Programmes. Accordingly, the objectives of the study are to identify the socio economic characteristics of farmer-clients with group loans; determine the influence of borrowers' household characteristics on group loan repayment and find out those critical factors that predispose farm households to default in group lending schemes.

METHODOLOGY

The study was carried out in Anambra State located in South East, Nigeria. The State was created in 27th August 1991 and is one of the 36 States in Nigeria. Its capital is in Awka with 21 local government areas composing the State. The coordinates are 60°20′N 7°00′E. Anambra State has a total land area of 4884km^2 with total population of 4055,048 (2006 census) and 837/km^3 population density. The State is divided into three geopolitical zones which are Anambra-South, Anambra Central and Anambra North. Agriculture is the major occupation of the people of the State with economic activities centering largely on food production, processing, marketing and distributive trade. In 2007, the state's GDP was of $1,585 (anambra.ng.org).

A combination of purposive and multi stage random sampling technique was used to select respondents for the study across the three geopolitical zones of the state. In all, 27 Farmers' multipurpose cooperative societies and 296 farmer–members were selected for the study. Structured questionnaire was the instrument used to collect cross sectional data from these respondents. The data collected included demographic and household variables – Age of household head, gender, household size, farming experience, educational level, credit constraint status, dependency ratio, value of Assets, off farm income, total value of loans etc.

Descriptive statistics including frequency distribution, percentages and average were applied in analyzing the socio-economic and demographic profiles while multiple regression analysis was run to evaluate the effect of selected household factors of borrowers on rate of group locus repayment. Repayment rate as a dependent variable was a continuous variable censored at a lower bound of zero and upper bound of 100. The multiple regression model was fitted to test how the dependent variable can be explained by household characteristics of the borrowing farmer. The model postulated was implicitly specified as:

RPT = f(HOS, FME, VOA, OFI, CCS, DPR, AGE, FMD, TVL, HYS, e)
Where:
RPT= Rate of group loan repaid by farmer on the date when repayment falls due.
HOS = Household Size (number)
FME = Farming Experience (years)
VOA = Value of Assets (naira)
OFI = Off Farm Income/Month (naira)
CCS = Credit Constrained Status (credit constrained = 1, otherwise = 0)
DPR = Dependency Ratio (Proportion)
AGE = Age of Household Head (years)
FMD = Farm Diversification (engaged in more than one enterprise = 1, otherwise = 0)
TVL = Total value of loan accessed (naira)
HYS = Household Head years of schooling (years)
e = Error Term

The linear, semi-log, double log and exponential functional forms were tried using ordinary least square technique (OLS). This was because with the normality assumption for e, the OLS estimators are normally distributed and they are said to be best unbiased estimators (BUE) (Gujarati, 1995). The estimation of the econometric model was carried out using e-views 7 statistical package.

RESULTS AND DISCUSSION

Socio-economic characteristics of farmer-members of FMCS in group lending scheme

From Table 1, the distribution of respondents according to gender indicated there were more males (65.88 percent) than females (34.12 percent). This is supported by the findings of Adeyemo and Bamire (2005) that members of cooperatives are predominantly men. The mean household size from this study was 5.27 persons. According to Nigerian demographic and Health survey (2003), the average household size in Nigeria is 5.0 persons. This shows that the household size in this survey is representative of what obtains in Nigeria. The households in this study have had experience in farming ranging between 2 – 61 years. The mean years of farming experience was 24.37 years. However, majority of the farm-households (66.27 percent) have farming experience

between 17-46 years. It means from this result that farm-households involved in group lending scheme were very experienced in farming techniques and practices. The mean Age of the households head was 50.23 years. This compares with studies of Adeyemo and Bamire (2005) of 47 years; and Oke *et al.* (2007) of 50.52 years. Again, 60.13 percent of the Farm-households belonging to FMCS who accessed group loan were headed by persons of Age between 20 and 55 years. The mean number of years of Education of the household head was 7.53 years. The percentage of those without education was 26.68 percent which is less than the National average of 36 percent (NDHS, 2008); while for the farmers with tertiary education is 12.50 percent. This finding points to the fact that farm-household heads in this study had at least acquired primary school education which makes them literate.

Table 1: Distribution of Socio-demographic Profile of farmer-members of FMCS in the Group-lending Programme

Variables	Frequency	Percentage
Gender		
Male	195	65.88
Female	101	34.12
Total	296	100.00
Household size		
<5	117	39.52
5-9	165	55.74
10-14	14	4.73
Total	296	100.00
Mean	5.27	
Farming Experience (years)		
2-16	91	30.74
17-31	124	41.89
32-46	72	24.32
47-61	9	3.04
Total	296	100.00
Mean	24.37	
Age of household head		
20-35	49	16.55
36-45	58	19.59
46-55	71	23.99
> 55	118	39.86
Total	296	100.00
Mean	50.23	
Head of household level of Education (year)		
No formal school	76	25.68
Primary school	97	32.77
Secondary school	86	29.05
Tertiary school	37	12.50
Total	296	100.00
Mean	7.53	

Source: Field survey 2011

Borrowers Household Characteristics that Influence the repayment of group loans in FMCS

The result of 10 household factors regressed against repayment of group loan in FMCS is presented in Table 2. Of the four functional forms tried, the semi log functional form was chosen as the lead equation because it had the best fit based on its lowest value of Akaike Information Criterion (AIC). The coefficient of multiple determinations R-square (0.4820) indicated that 48.20 percent of the total variation of group loan repayment by farmer members of FMCS is explained by the 10 household factors included in the model. The regression model was significant at 5 percent. While the autonomous level of proportion of loan repayment at due date is 0.3482. Besides, five explanatory variables were statistically significant ($P \leq 0.005$) and these include household size, value of asset, off farm income, dependency ratio and total value of loan. Household size with a negative coefficient conforms to a priori expectation, implying that repayment increases with decreasing household size. This result is consistent with findings of Mejeha (2005) in which farmer cooperators who enjoyed group's social capital but had high household sizes diverted their loans for sustenance and upkeep of family members.

The regression coefficient for value of assets was positive. This result means that increasing farmer's productive asset holding increases the repayment of his group loan. This positive coefficient conforms to earlier findings of Rahji and Fakayode (2009). Value of Asset as a measure of wealth increases income and ability to self insure as well as reduces dependence on others against income shock. Reducing dependence on others may insulate a household against peer pressure exerted by group members, which is particularly important in promoting repayment. To this extent, increasing value of productive assets of a household under failure of peer monitoring may promote delinquency of a farmer in a group loan programme.

Off Farm Income with a positive coefficient conforms to apriori expectation. This implies that the rate of repayment increases with increasing households' income. This is explained by the fact that income other than that generated from farm operation can be used by the farmer to make repayment especially when faced with market failure. To this extent off-farm income diversification can be used to reduce covariate risks associated with borrowing with homogenous group like FMCS.

Dependency Ratio has a negative coefficient and it was as predicted. This indicates an indirect relationship between the number of dependents in a farmer's household and his ability to make repayment of any group loan received at the due date. Frequently, households with a greater number of dependents-children (0-14 years) and elderly (>64years) are perceived as more likely to be delinquent. Sharma and Zeller (2000) contradicted this result when they found that repayment rates in Bangladesh were better among group members composed of households with more dependents. It is likely that such households were more risk averse since the effect of adverse shocks is likely to be more serious on the children and elderly who are vulnerable.

For the total value of loan, the estimated regression coefficient was negative and it signified that the repayment of group loan at due date by farmer – cooperators increase with decreasing amount of loan. Thus, increasing the value of group loan to individual farmers in the study will decrease the rate of repayment. One reason for this is that increased values of loans may have created high indebtedness on some farmers. This would exist when farmers access loan sizes of unmanageable levels. This negative estimated coefficient suggests that farmer-clients of group loans in FMCS of

Table 2: Result of Multiple Regression of Household factors on Repayment of group loan

Variables	Functional Forms			
	Linear	Semi-Log	Double Log	Exponential
Constant	0.679253	0.348182	-1.621883	-0.530482
	(7.834829)**	(-1.3116683)NS	(-3.810183)**	(-3.963103)**
HOS	-0.019718	-0.132941	-0.223860	0.032987
	(-3.075181)**	(-3.773787)**	(-4.044466)**	(-3.300531)**
FME	-0.000135	0.014596	0.047550	0.001906
	(-0.092168)NS	(0.572975)NS	(1.188127)NS	(0.823246)NS
VOA	5.00E-08	0.088227	0.084574	4.54E-08
	(4.193318)**	(6.320321)**	(3601217)**	(2.543191)**
OFI	1.40E-07	0.033999	0.045885	1.45E-07
	(0.833759)NS	(2.643261)**	(2.156617)**	(0.586984)NS
CCS	0.0244190	0.020968	0.088451	0.102220
	(0.672554)NS	(0.578943)NS	(1.560229)NS	(1.828521)*
DPR	-0.035463	-0.084075	0.136011	-0.050089
	(-4.062286)**	(-3.995531)**	(-4.073340)**	(-3.790735)**
AGE	-0.001733	-0.041897	-0.031182	-0.000363
	(-1.277427)NS	(-1.021676)NS	(-0.487799)NS	(-0.174181)NS
FMD	0.066498	0.025385	0.005213	0.038417
	(2.185713)**	(0.841870)NS	(0.107821)NS	(0.810143)NS
TVL	-1.71E-07	-0.088227	-0.038390	3.60E-07
	(-1.707788)*	(6.320231)**	(-2.224232)**	(2.383418)**
HYS	0.009533	0.065232	0.134741	0.018188
	(3.094596)**	(1.623347)NS	(-2.099305)**	(3.804007)**
Model fit Tests				
R-squared	0.308588	0.482017	0.383212	0.295005
Adjusted R-squared	0.284157	0.451000	0.343419	0.266918
F-statistic	12.63075	15.54042	9.630193	10.50311
Prob (F-statistic)	0.000000**	0.000000**	0.00000**	0.000000**
Akaike information criterion	0.128489	-0.364974	0.500228	0.895658
Durbin Watson stat.	1.551823	1.784710	2.183518	1.609175

Source: Econometric analysis output from E-views 7 software on Field Data 2011; ** Significant at 5% level; * significant at 10%, NS- Not significant; Figures in parenthesis indicate t-statistic

Table 3: Factors Leading to Group Credit Default among Members of FMCS in Anambra State

Factors	Number of Responses	Percentage	Ranking
Possibility/incidence of loan forgiveness by government/programme	186	62.83*	6th
Unsecured loan that makes foreclosure of asset on default impossible	212	71.6*	2nd
Failure of other farmers in joint liability to repay their loans	186	62.83*	6th
Group disintegration and eventual loss of peer pressure	236	79.72*	1st
Crop /Enterprise failure	191	64.52*	5th
Insufficient funding of project	197	67.22*	4th
Short period of repayment	98	33.12	9th
Perception of loan as grant/National cake	210	70.94*	3rd
Late disbursement of loan	137	46.28	7th
Embezzlement of fund/Corruption	122	41.21	8th
Maximum Responding unit Multiple response recorded	296		

Source: Field Data, 2011 (Responses with percentages $\geq$ 50 were considered critical); *Items over 50 percentile

the study may also have diverted these loans to non-suggests that farmer-clients of group loans in FMCS of the study may have diverted these loans to non-productive uses or they were particularly at subsistence farming. This scenario in the group lending programme may result from failure of group dynamics (such as peer pressure, group homogeneity and group solidarity) in fostering repayment.

Factors Leading to Group Loan default among Members of FMCS

In Table 3, other than short period of repayment, late disbursement of funds and embezzlement (with responses <50 percent), all were identified by respondents as strong factors leading to default on group loans. The perception of possible loan forgiveness in the programme, impossibility of foreclosure of assets, failure of other farmers to repay and thinking of the loan as national cake/grant are precursors to loan delinquency. These factors had led to default arising from unwillingness to repay rather than inability to repay. Group disintegration may cause failure to repay loans because of the loss of peer pressure exerted on group members to repay. Group disintegration reflects a common problem with FMCS in Nigeria, where few survive after being used as agency to access credit. This factor was ranked as the most which contributed to group loan default among farmer members of FMCS. Crop/Enterprise failure was ranked as 5th factor leading onto default of group loans in FMCS. This situation arises when farmers do not have effective mechanisms for management and coping with risks. Insufficient funding of project was ranked 4th and is reflective of the unmet capital needs of the farmers.

Consequently, the unmet credit needs of these farmers have made them unable to successfully execute farming projects that would yield income from where they would have used to repay their group loans.

Conclusion

The study has provided empirical evidence supporting borrowers' household characteristics as significant contributors to group loan repayment in Farmers' multipurpose cooperative societies. To this extent, farm household factors, along with anecdotal factors of the group and programme are variables that conjointly and interdependently determine repayment of group loans in Agriculture. Another conclusion derived from this study is that the unwillingness to repay group loans observed among farmer – cooperators is conditioned by the programme factors of debt forgiveness, absence of physical collateral that would have enabled possible foreclosure of assets, perception of loans as grants and failure of other farmers in joint liability to repay their loans.

REFERENCES

Adeyemo R and AS Bamire, 2005. Savings and Investment patterns of Cooperative Farmers in South-Western Nigeria. J Social Sci, 11: 183-192.

Ahlin C and C Townsend, 2007. Using repayment data to test across models of Joint liability lending. Econo J, 117, F11-FSI.

Chowdury PR, 2005. Group lending: sequential financing, lender monitoring and joint liability. J Develop Econo, 77: 415-439.

Diagne A, F Simtowe, W Chimombo and C Mataya, 2000. Design and Sustainability issues of Rural Credit and Savings programs for Malawi. An Action Oriented Research programs for Malawi. An Action Oriented Research Project, IFPRI, Washington, DC.

Ghatak M, 1999. Group lending local information and peer selection. J Develop Econo, 60: 27-50.

Gujarati DN, 1995. Basic Econometrics 3rd edition McGraw-Hill Book, New York.

Hermes NR, Lensin K and HT Mehrteah, 2006. Does the group leader matter: the impact of monitoring activities and social ties of group leaders on the repayment performance of group-based lending in Eritrea. Afric Develop Review, 18: 72-79.

Jain P, 1999. Managing credit for the rural poor: lessons from the Grameen Bank. World Bank 24: 79-89.

Karlan D, 2007. Social Connections and group banking. Econo J, 117: F52-F84.

Mejeha RO, 2005. Determinants of Savings Mobilization in rural economy of Abia-State, Nigeria PhD dissertation, Department of Agricultural Economics, Micheal Okpara University of Agriculture Umudike Nigeria.

Mkpado M and CJ Arene, 2007. Effects of group administration on sustainability of Agricultural micro-credit groups in Nigeria. International Journal of Rural Studies, 14.

Morduch J, 1999. The microfinance Promise Journal of Economic Literature, 37: 1569-1614.

Nigeria Demographic and Health Survey, 2003. National Population Commission (NPC) Abuja, Nigeria.

Nigerian, Demographic and Health Survey, 2008. National Population Commission (NPC) Abuja, Nigeria.

Paxton J, D Graham and C Thraen, 2000. Modelling group loan repayment behaviour: new insights from Burkina Faso. Economic Development and Cultural Change, 48: 639-655.

Rahji MA and SB Fakayode, 2009. A multinomial logit analysis of agricultural credit rationing by commercial banks of Nigeria. Inter Res J Finan and Econo, 24: 90- 100.

Sharma M and M Zeller, 2000. Factors affecting repayment rates in group-based lending: findings from Bangladesh and Madagascar. International Food Policy Research Institute, Policy Brief No 9, Washington DC.

Wenner MD, 1995. Group Credit: a means to improve information transfer and loan repayment performance. The Journal of Development Studies, 2: 263-281.

World Bank, 2006. Getting Agriculture Going in Nigeria: Framework for a National Growth Strategy Report No 34618NG, Washington DC.

Zeller M, 1998. Determinants of repayment performance in credit groups: the role of program design, intra-group risk pooling and social cohesion. Econo Develop and Cultur Change, 46: 529-620.

Zeller M, A Sharma, A Ahmed and S Rashid, 2001. Group based financial institution for the rural poor in Bangladesh: an institutional and household level analysis. Research Report No 120 IFPRI, Washington DC.