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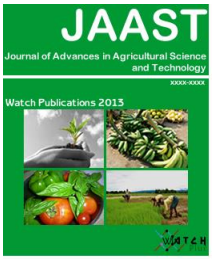

Factors influencing Farmers' Participation in Savings and Cooperative Societies in Niger State, Nigeria and its implication on Poverty reduction/alleviation

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Abstract

The study assessed Farmers' Participation in Savings and Credit Cooperative Societies: Mean per capita annual farm income and Poverty Reduction in Niger State, Nigeria. Combinations of purposive and random sampling techniques were used to select 85 and 72 beneficiaries and non-beneficiaries of saving and credit cooperative societies (SACCOS). Data were obtained through a well structured questionnaire. Foster-Greer-Thorbecke (FGT) poverty measures and multiple regression models were employed for data analysis. The result indicates that out of eight (8) variables included in the regression, only age had a negative coefficient and statistically not significant. Gender, secondary occupation, household size, educational level, farm income, non-farm income, interest rate charged had positive coefficient. Household size, farm income, non-farm income, interest rate charged and educational level are statistically significant at 1% and 10% levels of significance respectively. The study further revealed that about 33% and 67% of the beneficiaries and about 8% and 18% of the non-beneficiaries fall under the non-poor category before and after obtaining credit respectively. Poverty is marginally severe among the beneficiaries and non-beneficiaries but is more marginally severe among the non-beneficiaries. The study recommends that Non-governmental Organisation and local government council in the areas should intensify their efforts to boost the income diversification practices of farmers through provision of infrastructure especially feeder roads. This could enhance the level of farm and non-farm activities that could generate more income for the household and thereby help to combat poverty among the respondents.

KeyWords: *Savings, Credit Cooperative, Poverty, Crop farmers, Niger State.*

INTRODUCTION

In Nigeria, several efforts have been made to create jobs for the teaming able bodied people who are available for work but who are yet to find jobs (Goodluck, 2011). One key source of unemployment in Nigeria is dearth of capital required to combine with other factors of production, which are land, labour and entrepreneurship (Nieman *et al*., 2003). Although growth is critical for poverty reduction, focus on growth alone is not enough (Almas, 2013). Micro-lending has been considered as the latest panacea for poverty alleviation (Magbagbeola *et al*., 2010). There has been a growth in the recognition of the importance of empowering all people of their access to all the factors of production including credit (Ahmad et al., 2004).

Cooperative Societies all over the globe have been seen as one of the ways of reaching out to the un-banked and the neglected in the society and not a few have come to see it as an alternative to the regular banking, since it, in most case provides members of the group the financial incentives without the rigours usually experienced in banking halls (Adewakun, 2012).Traditional cooperatives are common throughout Nigeria, but these groups tend to be small, with a common bond based on membership of a kinship, societal and low professional group (Adewakun, 2012).

Savings and Credit Cooperative Societies are known to provide funding to their members at reasonable interest rate and without requirement of collateral. They are therefore vital organs for financing food crop production (Mavimbela et al., 2010). However, no known work have been done on the extent to which these organs have been helpful towards combating poverty in Nigeria. This study would attempt to fill this gap.

The micro finance power of cooperative societies cannot be overemphasized. Apart from ready access to micro credits, Small Scale Enterprises (SSEs) obtain loans with soft and convenient term. The major

emphasis in cooperative is on self-help, thus people cooperate because they realize that it is extremely difficult to achieve some goals alone (Ayoola, 2006; Alabi and Ahiawodzi, 2007; Oladejo, 2008; Yunus, 2008). The best way of pushing the limit of economic problem of scarcity is by working together. This is because more can be accomplished when people coordinate their efforts with each other take concerns and talents of other into considerations (Reeve, 2003). Invariably, cooperative societies remain the better alternative to economic reconstruction of the government, but its vast potentials have always been jettisoned by the Nigerian Government (Zarafshani *et al*., 2010). This study therefore analyzed the role of savings and credit cooperative societies on poverty reduction among the farmers in the study area. Specifically the study assessed the factors influencing farmers' participation in savings and credit cooperative societies and poverty status of the farmers in the study area.

MATERIALS AND METHOD

Niger State lies in the north central part of the country's geopolitical zones, between Latitude 9° 30" north of the equator and Longitude 6° 15" east of the prime meridian. It is one of the 36 States of Nigeria, created out of the defunct North- Western State. It shares border with the Republic of Benin (West), Zamfara State (North), Kebbi (North West), Kogi (South), Kwara (South West), Kaduna (North East) and the FCT (South East) . It comprises 25 local government areas (LGAs) grouped into 3 administrative zones; A, B, C with 8, 9 and 8 LGAs respectively. It is the largest state in Nigeria, as it covers about 86,000Sqkm (or about 8.6million hectares) representing about 9.3% of the total land area of the country. The farmers produce food crops such as guinea-corn, maize, cassava, cowpea and rice at subsistence level. At the end of 2012, the poverty rate of Niger State was estimated at 33.8% (National Bureau of Statistics, 2012). Based on the annual growth rate of 3.4%, the state has a projected population of 5,235,294 and 5,416,354 by 2014 and 2015 respectively (UNFPA, 2009).

Sampling Procedure

Combinations of purposive and random sampling techniques were used for this study. The first stage involved a purposive selection of these three (3) local government areas because of the availability of more members of savings and credit cooperative societies (SACCOS) of beneficiaries and non- beneficiaries with documented records among the three senatorial zones of the state. The three (3) local government areas selected represent the three (3) senatorial zones of the state.

The Local Government Areas covered include; Lapai (South), Bosso (East) and Wushishi (North). In the second stage, about 10% of the respondents from the beneficiaries and non-beneficiaries of SACCOS from each of the three (3) LGAs were randomly selected with the aid of lottery method from the list of cooperators provided by the desk officer from Niger state Fadama coordination office.

Methods of Data Collection

Primary data were used for this study. These were collected with the aid of structured questionnaire. Information collected include: socio-economic characteristics of savings and credit cooperative societies of beneficiaries and non-beneficiaries of SACCOS credit such as age, education level, household size, secondary occupation, farms size, farming experience, annual income, farm and non-farm income, amount of contribution by members of savings and credit cooperative societies.

The outputs of the major crops grown by the respondents were determined (maize, sorghum, millet, melon, soya bean, beniseed, cowpea, groundnut and rice) into kg-Grain Equivalents.

Analytical Techniques

Descriptive statistics such as; percentages, frequency distribution table were used to describe the socio-economic characteristics of the farmers.

Foster-Greer-Thorbecke (FGT) poverty measures;

Foster-Greer-Thorbecke (1984) was used to determine the poverty status of savings and credit cooperative societies of beneficiaries and non-beneficiaries before and after obtaining credit. The model is specified as:

$$P_\alpha = \frac{1}{N}\sum_{i=1}^{Hi}\left(\frac{Z - Y_i}{Z}\right)^\alpha$$

$P_0 = \frac{H_O}{N}$ ---------- (i)

$P_1 = \frac{1}{N}\sum_{i=1}^{Hi}\left(\frac{Z-Y}{Z}\right)$ ----------(ii)

$P_2 = \frac{1}{N}\sum_{i=2}^{Hi}\left(\frac{Z-Y}{Z}\right)^2$ ----------(iii)

Where,

P is the poverty index, α is a non-negative parameter, which takes the values 0, 1 and 2. As the exponent increases the "aversion" to poverty as measured by FGT index increases. When α =0, this index gives the head count ratio or the incidence of poverty which will be the percentage of beneficiaries and non-beneficiaries of savings and credit cooperative societies that are classified poor in the area. When α =I, this index

measures the poverty depth that is the proportion of the poverty line that the average poor will require to attain to the poverty line while severity of poverty is measured when α =2, Which is the mean of square proportion of the poverty gap.

When multiplied by 100, it gives the percentage by which a poor household's per capita annual farm income should increase to push them out of poverty.

N= No of Respondents.
Hi = Head count of the poor (Number of poor farm household).
Yi = Mean per capita annual farm income in Naira.
Z = Poverty line using 2/3 of mean per capita annual farm income of beneficiaries and non-beneficiaries of savings and credit cooperative societies in the study areas.

Construction of the Poverty Line

According to (FOS, 1999) and (Canagarajah and Thomas, 2002), there is no official poverty line in Nigeria and as such many earlier studies have used poverty lines which are proportions of the average per capita income or expenditure. However, in this study per capita annual farm income was used. Therefore, the poverty line was defined as the two-thirds (2/3) and one-third (1/3) of the mean value of mean per capita annual farm income for beneficiaries and non-beneficiaries before and after obtaining credit in the study area.

PCFI = TFI/HHS----------(iv)
MPCFI = TFI /TNR ---------- (v)
PL = 2/3 or 1/3 * MPCFI ---------- (vi)

Where:

PCFI = Per Capita Annual Farm Income
TFI = Total Farm Income
HHS = Household Size
MPCFI = Mean Per Capita Annual Farm Income
TNR = Total Number of Respondent
TFI = Total Farm Income
PL = Poverty Line

The Poverty line was placed at two-third and one-third mean per capita annual farm income of respondents as adopted by FOS (1999) and the World Bank/FOS/NPC (1998). Based on this, the respondents were classified into three groups:

- Non-Poor: those with annual farm income above two-third mean per capita annual farm income, i.e. (above ₦192,885.30 and ₦193,409.70 per annum before and after obtaining credit).
- Moderate Poor: those with annual farm income between one-third and two-third mean per capita annual farm income, i.e.(between ₦96,442.66 and ₦192,885.30 per annum before while between ₦96,704.86 and ₦193,409.70 per annum after obtaining credit).
- Core poor: those with annual farm income below one-third mean per capita annual farm income, i.e. (below ₦96,442.66 and below ₦96,704.86 per annum before and after obtaining credit respectively).

Multiple regression analysis

This was used to determine the factors that influence the level of participation of members in saving and credit cooperative societies. Amount of contribution by members of savings and credit cooperative societies was used as proxy for the level of participation of members in saving and credit cooperative societies.
The regression model specification is

$$Y= \beta_0 +\beta_1X_1+ \beta_2X_2+ \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7+ \beta_8X_8+ e$$

Where;

$Y_{i=}$ Amount of Contribution by Members (Naira/Month).
X_1=Age (Years).
X_2= Sex (Male=1, Female=0).
X_3= Secondary Occupation (Civil Servant=1, Artisan=2, Trading=3, Fishing=4, Others=5).
X_4=Household Size (Number of Persons).
X_5=Education (Year of Schooling).
X_6= Total Farm Income (Naira/annum).
X_7=Total Non-Farm Income (Naira/annum).
X_8=Interest Charged on Credit (Naira/annum).
β_i = The coefficients for the respective variables.

RESULTS AND DISCUSSION

Factors Influencing the Level of Participation of Members in Savings and Credit Cooperative Societies

Factors that influence the level of participation of members in savings and credit cooperative societies are presented in Table 1. Amount of contribution by members was used as proxy for the level of participation of members in SACCOS. It was found that the f-value is 32.749 and statistically significant at 1% level of significance with the adjusted R^{-2} value of 0.647. The f-ratio was statistically significant implying that the joint effects of most of the included variables influence the level of participation of members in SACCOS. The Adjusted R^{-2} indicates that the independent variables explained 64.7% variations in the dependent variable. It indicates that of the eight (8) variables included in the regression model sex, secondary occupation, household size, educational level, farm income, non-farm income, interest rate charged had positive coefficient. Household size, farm income, non-farm income, interest rate charged and educational level are statistically significant at 1% and 10% levels of significance respectively. Only

Table 1: Factors influencing the level of participation of members in Savings and Credit Cooperative Societies

Variable	Coefficients	Standard Error	T-Value
Constant	3398.929*	1999.460	1.700
Age(X1)	-1828.970	2699.770	-0.677
Sex(X2)	426.465	623.683	0.684
Secondary Occupation(X3)	3099.834	4376.200	0.708
Household Size(X4)	0.042***	0.0103	4.078
Educational Level(X5)	0.028*	0.015	1.867
Farm Income(X6)	0.046***	0.014	3.286
Non-Farm Income(X7)	0.203***	0.076	2.671
Interest Rate Charged(X8)	0.956*	0.558	1.713
R-Square	0.667		
Adjusted R-Square	0.647		
F-Value	32.749***		

***Significant at 1%, **Significant at 5% and *Significant at 10%

age had a negative coefficient and statistically not significant. The coefficient of household sizes was found to be positive and significantly influences the willingness of participation of members in SACCOS. This conforms to a priori expectation and confirmed by studies such as NBS (2007). It indicates that household sizes had an influence on the level of participation of members in SACCOS. This is because a large household size means more responsibility to the household head and thereby makes household head depend on SACCOS as source of credit.

The coefficient of educational level was found to be positive and statistically significant. This implies that educational attainment influence the level of participation of members in savings and credit cooperative societies. This conforms to a prior expectation. Education creates awareness about opportunities existing in SACCOS. This result agrees with the findings of Elsie (2006) and Sivaram (2000) that level of education play a significant role in the participation of members in SACCOS.

The coefficient of farm income was found to be positive and significantly influences the level of participation of members in SACCOS. This result conforms to a priori expectation. Thus, farmers with high income are more likely to participate in SACCOs compared with those with low income. It implies that propensity to save increase with farm income. This confirms the theory that households allocate less of income to consumption and more to saving as income rise.

The coefficient of non-farm income was found to be positive and significantly influences farmers' willingness to participate in SACCOS. This conforms to a priori expectation. That is, farmers who engaged in non-farming activities were more likely to participate in SACCOS than those who did not engage in any non-farm activities. A possible reason is that farmers who engaged in non-farm activities diversify their income sources and have access to more capital for use in farming.

The interest rate charged on credit was found to be positive and statistically significant. This does not conform to a prior expectation. It implies that interest rate charged on credit positively influences farmer's willingness to participate in savings and credit cooperative societies. This may be attributed to the fact that the interest rate charged by cooperative societies (15%) is much lower than the going commercial rates of between 25% and 30%. This result agrees with the findings of Adaigho and Izeke (2009) that farmers would like to save even when there is increase in interest rate.

The coefficient of age was found to be negative and statistically non- significant. This result conforms to a priori expectation. It implies that age negatively influenced farmers' willingness to participate in saving and credit cooperative societies. It means that as they get older; their level of participation in savings and credit cooperative societies decreases. The mean age of beneficiaries and non-beneficiaries in the study areas was found to be 41 and 38 years respectively. The implication is that as they get older; the less their diversification in off-farm income activities, the less their income, propensity to participate in SACCOS and the less their credit. This outcome agrees with the theory of Keynes who opined that old age is associated with less saving and increase consumption.

Poverty Status of beneficiaries and non-beneficiaries of SACCOS Credit

The study (Table 2) established poverty thresholds based on the 2/3 and 1/3 mean per capita annual farm income (MPCFI) for beneficiaries and non-beneficiaries of SACCOS Credit before and after obtaining credit. The year considered for before is 2009 and after is 2013. It was found that 33% and 67% of the beneficiaries and approximately 8% and 18% of the non-beneficiaries fall under the non-poor category before and after obtaining credit respectively. About 65% and 33% of the beneficiaries' and approximately 85% and 81% of the non - beneficiaries fall under moderate poor category

Table 2: Poverty Status of beneficiaries and non-beneficiaries of SACCOS Credit

Poverty Category	Beneficiaries Before	Beneficiaries After	Non-Beneficiaries Before	Non-Beneficiaries After
Non-Poor	28 (32.94)	57 (67.06)	6 (8.33)	13 (18.06)
Moderate Poor	55 (64.71)	28 (32.94)	61 (84.73)	58 (80.55)
Core Poor	2 (2.35)	0 (0.00)	5 (6.94)	1 (1.39)
FGT Poverty Indices				
Poverty Incidence (Po)	0.67	0.33	0.92	0.82
Poverty Depth (P_1)	0.13	0.06	0.27	0.17
Poverty Severity (P_2)	0.12	0.02	0.10	0.04
POVERTY LINES:	BEFORE		AFTER	
MPCFI	= ₦ 289,328.00 Per annum		= ₦290,114.60 Per annum	
2/3*(MPCFI)	= ₦ 192,885.00 Per annum		= ₦193,409.70 Per annum	
1/3*(MPCFI)	= ₦ 96,442.66 Per annum		= ₦ 96,704.86 Per annum	

before and after obtaining credit. About 2% and 0% of the beneficiaries and approximately 7% and 1% fall under the core pore category before and after obtaining credit. It indicates that there are higher percentages 65% of moderate poor and approximately 67% of non-poor categories among beneficiaries before and after obtaining credit respectively. Also, there are higher percentages 85% and approximately 81% of the moderate poor category among non-beneficiaries before and after obtaining credit respectively.

It was found that 67% and 33% of the beneficiaries and approximately 92% and 82% of the non-beneficiaries were considered poor before and after obtaining credit respectively. It indicates that larger percentages 92% and 82% of the non-beneficiaries were considered poor as compared to approximately 67% and 33% of the beneficiaries before and after obtaining credit respectively. The implication is that there is a reduction in poverty among the beneficiaries after obtaining credit; this could be due to beneficiaries' access to SACCOS credit.

It was found that the poverty depth index for beneficiaries was 0.13 before and 0.06 after obtaining credit, while, that for non-beneficiaries' was 0.27 before and 0.17 after obtaining credit. It indicates that non-beneficiaries had greater poverty depth index than the beneficiaries which means that the degree of poverty among non-beneficiaries was more compared with the beneficiaries. The implication is that respondents among the beneficiaries need approximately 6% which translates into ₦11,604.58 while the non-beneficiaries need approximately 17% which translates into ₦ 32,879.65 annually in addition to their mean per capita annual farm income to attain the poverty line after obtaining credit.

Finally, it was found that the non-beneficiaries' had a poverty severity index of 0.10 and 00.4 while the beneficiaries had a poverty severity index of 0.12 and 0.02 before and after obtaining credit respectively. It indicates that the non-beneficiaries had higher percentage (4%) of the poorest after obtaining credit while the beneficiaries had higher percentage (12%) of the poorest before obtaining credit. Although, poverty is marginally severe among the respondents after obtaining credit but is more severe among the non-beneficiaries after obtaining credit. This implies that approximately 2% of the beneficiaries constitute the poorest among the respondents while approximately 4% of the non-beneficiaries constitute the poorest among the respondents after obtaining credit. This result is in consistent with the findings of Adebayo (2004) who reported that though the participating bee farmers had larger number of poor, the degree of poverty among the non-participating bee farmers was more when compared with the participating bee farmers and poverty is marginally more severe among the non-participants.

Hypothesis Testing for difference in annual farm income of Farmer's beneficiaries and non-beneficiaries of SACCO's credit.

The result of the hypothesis testing of annual farm income of beneficiaries and non- beneficiaries is presented in Table 3. The value of annual farm income of the farmer's beneficiaries and non- beneficiaries of SACCO's Credit before and after obtaining credit was tested. It was found that the mean annual farm income of beneficiaries and non- beneficiaries was 317750.46 and 244506.94. The t-calculated is 2.33 and t-critical is 1.98 and statistically significant at 5% level of significance. It indicates that the t-calculated is higher than the t-critical and statically significant.

CONCLUSION AND RECOMMENDATIONS

Savings and Credit Cooperative Societies have been found associated with poverty reduction and increased level of mean per capita annum farm income. The higher

Table 3: Hypothesis testing for differences in annual farm income of farmer's beneficiaries and non-beneficiaries of SACCO's Credit

	Mean	Variance	N	T-cal.	Critical T.
Beneficiaries	317750.46	1.07E+11	85		
				2.33**	1.98
Non-Beneficiaries	244506.94	1.28E+11	72		

** Significant at 5%

poverty severity index of 0.04 existed among the respondents that are non-beneficiaries compared with the beneficiaries with the severity index of 0.02 after obtaining credit. Poverty is marginally more severe among the non-beneficiaries by 4%. These suggest that if the programme continues, the farmers stand a chance of moving out of poverty. However, the level of involvement in savings and credit cooperative societies was influenced by farmers' specific socio-economic factors. These include household size, educational level, farm income, non-farm income and interest rate charged at various levels of significance. The study recommends that Non-governmental Organisation and local government council in the areas should intensify their efforts to boost the income diversification practices of farmers through provision of infrastructure especially feeder roads. This could enhance the level of farm and non-farm activities that could generate more income for the household and thereby help to combat poverty among the respondents.

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