Full Length Research

Impact of Savings and Credit Cooperative Societies on Poverty Status of Crop Farmers in Niger State, Nigeria

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The study assessed the impact of savings and credit cooperative societies on poverty status of crop farmers in Niger State. 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. Descriptive statistics, Foster-Greer-Thorbecke (FGT) poverty measures and Double Different Estimator were employed for data analysis. Results showed that 61% of the beneficiaries and non-beneficiaries were between the ages of 37-48 years. The mean ages for farmer's beneficiaries and non-beneficiaries of SACCO's credit were 41 and 38 years respectively. Majority (76%) of the beneficiaries and 84% of the non-beneficiaries had some form of educational level of qualification. The mean household size for farmer's beneficiaries and non-beneficiaries of SACCO's credit were 11 and 10 respectively. It was found 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. The findings further showed that the double difference estimates of the crop output of farmer's beneficiaries and non-beneficiaries of SACCO's Credit had a positive value which indicates that credit had positive impact on the crop output of beneficiaries. It is recommended that farmer's savings and credit cooperative societies should source more loans and make it available to members, so that farmers could expand for large scale crop farming and also mechanized farming; this would further improve their living standard and help combat poverty.

Keyword: Savings, Credit Cooperative, Poverty, Crop farmers, Niger State

INTRODUCTION

The concern about the threat posed by poverty has led the Nigerian government to devote considerable attention to alleviating its scourge through various aid programmes, sometimes in collaboration with the civil society and donor agencies (Girei *et al* ., 2013). According to Girei *et al.* (2013), some of these programmes include: Agricultural Development Programme (1975), Operation Feed the Nation (1986), National Directorate for Employment (1987), National Fadama Development Programme I (1992), Family Support Programme (1996), National Poverty Eradication Programme (2001), Special Programme on Food Security (2001), National Fadama II Programme (2004), National Special Food Security Programme (2005), National Fadama III Programme (2009) and Sure-P programme (2013). Despite all these programmes, the percentage of the population living below the poverty line in Nigeria is still a subject of

concern to government and donor agencies (National Bureau of Statistic, 2011). The willingness of the low income group to borrow and repay at seemingly high interest confirm the view that their financial problems has more to do with access to funds as put by (Anyanwu, 2004). According to Jidenma (2007) the poor lacked good credit history because they never gained access to credit in the first place, thus the poverty level continues to aggravate as observed by Akanji (2006) and Ojo (2009). Also small and medium enterprises that have been described as the nerve of a nation's economy are suffering from poor funding (Basu, Balvy and Yulek, 2004; Oladejo and Dada, 2008).

Over time, savings and credit cooperative societies have been trying to address members' demands by mobilizing funds and granting credit to members. However, they have not been able to grow their wealth sufficiently through accumulation of enough institutional capital to finance non-withdrawable capital funded assets, provide cushion to absorb losses and impairment of members' savings. However, previous studies (Agrawal et al., 2002; Adeyemo & Bamire, 2005; Deji, 2005; Asher, 2007; Ogsi et al., 2007) have shown that lack of growth of savings and credit cooperative societies wealth has threatened their sustainability such that they have not been able to absorb their operational losses. As a result of this the small holder crop farmers' cooperatives societies such as savings and credit cooperative societies received financial assistance from World Bank in which the Fadama development association serve as a link (National Fadama Development Program III, 2009).

Savings and Credit Cooperative Societies (SACCOs) are important in the provision of financial and banking services to low income households who for economic reasons cannot be covered by the activities of formal banks and financial institutions (Mwakajumilo, 2008). SACCOs performs three major functions in relations to its members and general economic development of the country. In particular, these functions are collecting savings from its members, giving loans to its members and giving financial and non-financial advice to its members in order to facilitate SACCOs members utilize well the micro credit they have borrowed from SACCOs. In some cases, some government and private institutions may also give financial assistance to SACCOs in order to enable them give micro credit to their members (Mwakajumilo, 2008).

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 analyze impact of savings and credit cooperative societies' in combating poverty among crop farmers in the study areas. The specific objectives are to identify the socio-economic characteristics of farmers' beneficiaries and non-beneficiaries of SACCO's credit, determine poverty statuses of farmers' beneficiaries and non-beneficiaries of SACCO's credit and to evaluate the impact of credit in poverty alleviation of farmers' beneficiaries and non-beneficiaries of SACCO's credit.

MATERIALS AND METHOD

The study area

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% (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 farmers' 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 L.G.A (South), Bosso L.G.A (East) and Wushishi L.G.A (North). In the second stage, about 10% of the respondents from the two (2) groups 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 farmers' beneficiaries and non-beneficiaries of SACCO'S 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 following crops grown by the respondents were determined (maize, sorghum, millet, melon, soya bean, benniseed, cowpea, groundnut and rice) into kg-Grain Equivalents.

Analytical Techniques

Descriptive statistics

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 farmers' 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 = 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 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).

Double difference estimator

This model was used to analyze the impact of credit on the crop output of farmers' beneficiaries and non-beneficiaries of SACCO's credit. Information on both beneficiaries and non-beneficiaries were provided for before and after obtaining credit, it is literally a "difference of difference" (Albouy, 2010). The outputs of the following crops grown by the respondents were determined (maize, sorghum, millet, melon, soya bean, beniseed, cowpea, groundnut and rice) into kg-Grain Equivalents.

Note: % change in Crop output = Crop output after – Crop output before × 100%

Crop output before

A positive double mean difference indicates a credit impact on beneficiaries, while a negative double mean difference indicates that the credit had no impact on beneficiaries (Nkonya *et al* ., 2008)The model is specified as:

$$DDE=\left[\left(\frac{1}{P}\sum_{i}^{p}\left(\overline{Y}_{tia}-\overline{Y}_{tib}\right)\right)-\left(\frac{I}{C}\sum_{j}^{c}\left(\overline{Y}_{oja}-Yojb\right.\right.\right.\dots\dots\dots\dots\dots\dots\dots \text{ (vii)}$$

Where:

$\overline{Y}_{tia}-\overline{Y}_{tib}$ = difference of average crop output of beneficiaries after and before obtaining credit, respectively.

$\overline{Y}_{oja}-\overline{Y}_{ojb}$ = difference of average crop output of non-beneficiaries after and before obtaining credit, respectively.

P = number of beneficiaries.
C = number of non-beneficiaries.
DDE = the difference between the average changes in crop output for beneficiaries and non-beneficiaries.

RESULTS AND DISCUSSION

Socio-Economic Characteristics of Respondents

In this section the general socio-economic characteristics of saving and credit cooperative societies of farmer's beneficiaries and non-beneficiaries of SACCO's credit is provided. These include age, and household size, farming experience, secondary occupation, farm size and educational level as shown in Table 1.

Age distribution

The result in Table 1 revealed that majority, about 61% of the beneficiaries and non-beneficiaries were between the ages of 37-48 years. The mean ages for farmer's beneficiaries and non-beneficiaries of SACCO's credit were 41 and 38 years respectively. This implies that majority of respondents are still within a productive and active working age range, hence their ability to participate or produce to earn some income from farming and non-farming activities. This finding concurred with the findings of Windapo and Olowu (2001) and Bzugu *et al.* (2005) who reveal that productive and active persons participates more in agricultural and community development activities such cooperative societies.

Educational level

It was found that about 40% of the beneficiaries and 38% of the non-beneficiaries had secondary education. About 36% of the beneficiaries and 46% of the non-beneficiaries had primary education. About 11% of the

Table 1: Socio-Economic Characteristics of Respondents in the Study Area

	Beneficiaries		Non –Beneficiaries	
Characteristics	Frequency	Percentage (%)	Frequency	Percentage (%)
Age				
25-30	7	8	12	17
31-36	12	14	13	18
37-42	31	36	31	43
43-48	21	25	12	17
49-54	12	14	2	3
55-60	2	2	2	3
Mean		41		38
Educational level				
No formal education	11	13	8	11
Primary education	31	36	33	46
Secondary education	34	40	27	38
Tertiary education	9	11	4	6
Household size				
2-7	28	33	25	35
8-13	25	30	31	43
14-19	23	27	11	15
20-25	9	11	5	7
Mean		11		10
Farming experience				
3-10	10	12	5	7
11-18	14	16	24	33
19-26	25	29	20	28
27-34	17	20	11	15
35-42	13	15	10	14
43-50	6	7	2	3
Mean		25		23
Secondary occupation				
Civil servant	10	12	13	18
Artisan	8	10	7	10
Trading	42	49	39	54
Fishing	14	16	12	17
Others	11	13	1	1
Farm size				
1.0-1.9	0	0	13	18
2.0-2.9	12	14	7	10
3.0-3.9	28	33	39	54
4.0-4.9	29	34	12	17
5.0 and above	16	19	1	1
Mean		4		3
Total	**85**	**100**	**72**	**100**

beneficiaries and 6% of the non-beneficiaries had tertiary education. Majority about 76% of the beneficiaries and 84% of the non-beneficiaries had some form of educational level of qualification. This might be because most of those who understand the value of cooperative societies and join them were those who had a certain level of education and some civil servants. The educational background would no doubt

Table 2: Poverty Statuses and Indices of Farmer's Beneficiaries and Non-Beneficiaries of SACCO's Credit

Poverty Category	Beneficiaries		Non-Beneficiaries	
	Before	After	Before	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 (P1)	0.13	0.06	0.27	0.17
Poverty Severity (P2)	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

help in decision making especially in terms of meaningful managerial decisions, leadership and investments. This result concurred with the finding of Idrisa *et al.* (2007).

Household size

Majority about 62% of beneficiaries and 78% of non-beneficiaries had between 2-13 household sizes. The mean household size for farmer's beneficiaries and non-beneficiaries of SACCO's credit were 11 and 10 respectively. The implication is that the relatively large household size may likely enhance the family labour supply on the farms, hence supporting favorably, productive capacities of the farmers already enhanced by their age. This corroborate with the findings of Adegbite and Oluwalana (2004) and Adegbite *et al.* (2007) that the larger the household size, the higher the likelihood of sustainable labour efficiency on farmers' farm, given the constant labour supply.

Farming experience

It was found that majority about 66% of the beneficiaries and 76% of non-beneficiaries had between 11-34 years of farming experience. The mean farming experience for farmers beneficiaries and non-beneficiaries of SACCO's Credit were 25 and 23 years respectively. Farming experience is used as a measure of management ability, the more experience the farmer is, the more his ability to make farm decision. This result

showed that most of the respondents had long years of farming experience, implying that such farmers are likely to make decisions that would increase their output and income. This finding is in tandem with the findings of Kebbeh *et al.* (2003).

Farm size

It was found that majority about 67% of the beneficiaries and 71% of non-beneficiaries had between 3.0-4.9 hectare of the same farmland while about 19% of the beneficiaries and 1% of non-beneficiaries had 5.0 and above hectare of farmland.

The mean farm size for beneficiaries and non-beneficiaries were 4 and 3 hectares respectively. This implies that majority of the respondents still fall within the range of small-medium holder farmers (Geofrery, 2004). This finding is in resonance with the findings of Oladele and Mokgadi (2013).

Poverty Statuses and Indices of Farmers' Beneficiaries and Non-Beneficiaries of SACCO's Credit

The poverty statuses and indices of respondents are presented in Table 2. The study established poverty thresholds based on the 2/3 and 1/3 mean per capita annual farm income (MPCFI) for farmer's beneficiaries and non-beneficiaries of SACCO's Credit before and after obtaining credit. The year considered for before is 2009 and after is 2013. It was found that about 33% and

Table 3: Double Difference Estimates of the Impact of Credit on Crop Output of Farmer's Beneficiaries and Non-Beneficiaries of SACCO's Credit

	Crop Output		Difference between Periods
	Before(Kg)	After(Kg)	
Beneficiaries	2187.65	2761.18	573.53
Non-Beneficiaries	1943.33	2220.83	277.50
Difference Between Groups	244.32	540.35	296.03

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. About 65% and 33% of the beneficiaries' and about 85% and 81% of the non-beneficiaries fall under moderate poor category before and after obtaining credit. About 2% and 0% of the beneficiaries and about 7% and 1% fall under the core pore category before and after obtaining credit. It indicates that there are higher percentages about 65% of moderate poor and about 67% of non-poor categories among beneficiaries before and after obtaining credit respectively. Also, there are higher percentages about 85% and about 81% of the moderate poor category among non-beneficiaries before and after obtaining credit respectively.

It was found that about 67% and 33% of the beneficiaries and about 92% and 82% of the non-beneficiaries were considered poor before and after obtaining credit respectively. It indicates that larger percentages about 92% and 82% of the non-beneficiaries were considered poor as compared to about 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 SACCO's 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 about 6% which translates into ₦11,604.58 while the non-beneficiaries need about 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 about 4% of the poorest after obtaining credit while the beneficiaries had higher percentage about 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 about 2% of the beneficiaries constitute the poorest among the respondents while about 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.

Double Difference Estimates of the Impact of Credit on Crop Output of Farmer's Beneficiaries and Non-Beneficiaries of SACCO's Credit

The double differences estimates of the impact of credit on crop output of respondents are presented in Table 3. The mean output difference of the beneficiaries was 2187.65 kg and 2761.18 kg before and after obtaining credit. The difference between after and before values is 573.53kg, which is the first single difference. The mean output difference of the non- beneficiaries were 1943.33kg and 2220.83 kg before and after obtaining credit. The difference between before and after values is 277.50kg, which is the second single difference. The double difference, that is, the difference between the two output differences [573.53- 277.50] is 296.03kg. It indicates that the double difference estimates of the crop output of farmer's beneficiaries and non-beneficiaries of SACCO's Credit had a positive value. The implication is that credit had positive impact on the crop output of beneficiaries. A positive double mean difference in output value indicates positive impact of

credit on beneficiaries output (Nkonya *et al.*, 2008). Also, the beneficiaries and non-beneficiaries were able to increase their crop output by 26% and 14% respectively.

CONCLUSION AND RECOMMENDATIONS

Savings and Credit Cooperative Societies have been able to achieve some of its stated objectives. It has helped to improve crop output and per capita annual farm income of farmer beneficiaries of SACCO's Credit. There is however, more room for improvement in crop output and per capita annual farm income of the farmers. The higher 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 suggests that if the programme continues, the farmers stand a chance of moving out of poverty.

The study recommends that the savings and credit cooperative societies' credit had positive impact on the crop output and annual farm income of beneficiaries on their small-medium holder farm. It is recommended that farmer's savings and credit cooperative societies should source more loans and make it available to members, so that farmers could expand for large scale crop farming and also mechanized farming; this would further improve their living standard and help combat poverty.

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