



Effect of Cooperative Membership on Poverty Status of Smallholder Farmers in Yewa Division Ogun State, Nigeria

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Abstract

The study assessed the effect of cooperative membership on the poverty status of smallholder farmers in Ogun State, Nigeria. Multi-staged sampling technique was used to select 120 farmers and primary data were collected using a questionnaire. Data were analyzed using descriptive analysis such as percentages, mean, frequency counts and Probit regression. Results showed that an average farmer was 49 years and they possessed adequate and relevant knowledge as to the dealings of the cooperatives because they were averagely educated and most of them were married. The majority of them lived in a rented block apartment. In addition, more than half of the respondents belonged to the non-poor class of the poverty line. It was found that the probability of being poor decreased with an increase in educational attainment, and cooperative experience. Furthermore, the presence of secondary occupation increased the probability of co-operators escaping poverty. The study also confirmed that having access to loans, and amounts of loans accessed could lead farmers out of poverty. The study concludes that farmers in the study area were not poor but needed higher loan amounts to expand their businesses. It is therefore recommended that Cooperative societies should be enlightened through sensitization on the proper utilization of loans accessed as this will help them generate more income that could lift them above the poverty line.

Keywords: *Smallholder, Farmers, Cooperative, Poverty, Ogun State*

Introduction

Co-operatives play an important role in improving smallholder farmers' livelihoods and reducing poverty by enabling economic growth, skills development, partnership building and creating employment. In Africa, the 2017–2020 International Co-operative Alliance (ICA, 2020) Co-operative Development Strategy considers co-operatives key to boosting socioeconomic development. Amongst smallholder farmers, co-operatives can mitigate market failures which lead to high transaction costs (Nugusse *et al.*, 2013). Co-operatives facilitate the collective purchase of inputs and marketing of produce, which lower the cost of production, enhances bargaining power for favourable prices and builds resilience (Sugden *et al.*, 2021). The emergence of agricultural cooperatives is widely viewed as an important arrangement that can help overcome the constraints that impede smallholders in developing countries from taking advantage of agricultural production and marketing opportunities which will improve their overall welfare (World Bank, 2015). In developing countries, the agricultural sector employs more than 50% of the economically active population and contributes to more than 25% of the gross domestic product and smallholder agriculture is

believed to be an important component in these countries (World Bank, 2015). Agricultural reform in low-income countries is challenged by numerous market inefficiencies, including limited access to credit, information inefficiencies (e.g., dissemination of information about new technologies and crop varieties) and constraints on labour and land (Jack, 2013). Agricultural cooperatives are increasingly advocated by governments, non-governmental organizations (NGOs) and researchers as a means to overcoming the problems confronting low-income countries' agricultural reform (Kindness and Gordon, 2001; Hazell, 2005).

Cooperatives are considered a useful mechanism to manage risks for members. Through the cooperative, members could pool their limited resources together to improve agricultural output and this will enhance socioeconomic activities in the rural areas (Ebonyi and Jimoh, 2002; Akpomedaye, 2017). The main aim of the cooperative is to produce goods and deliver services, satisfy the legislative needs of members and also to promote cooperation, relations, participation and consequently to promote inter-personal connections. Cooperative societies provide services that benefit both members and the local community (USDA, 2020).

Cooperative society at the rural community level is an organization that is meant to fight all dimensions of poverty among rural cooperators. It is supposed to identify the economic opportunities of the poor rural cooperators, empower them by defending their interests, and provide financial security. Thus, these organizations aim to drive away poverty at the rural community level. However, the different cooperative societies operational in Yewa Division of Ogun State do not seem to be anywhere near the achievement of this goal. It is against this background that this study sets out to examine how cooperative societies operating in this area have been carrying out cooperative responsibilities among participants to reduce the suffering of the poor in rural areas. This research will provide answers to the following research questions: What are the types of existing cooperatives in the study area? What is the poverty status of farmers and what effect does participation in cooperative society have on the poverty status of smallholder farmers in the study area?

Methodology

Study Area

The study was carried out in the Yewa Division of Ogun State, Nigeria. Ogun State is in the South-West rainforest zone of Nigeria. Created on the third of February 1976, Ogun State lies on the latitude 6055-70N and longitude 3046-4015E (NPC, 2006). Its latitude and longitude by the Greenwich Meridian is 260 and 360 respectively. It is bounded in the west by the Republic of Benin, on the east by Ondo State, on the North by Oyo State Arid, and on the South by Lagos State and the Atlantic Ocean. The average rainfall in the State range between 1250mm and 1800mm with a slight bimodal rainfall distribution which peaks in June and October while the dry season stretches from mid-November to March. Temperature ranges from 240C to 340C and average relative humidity of 80% to 90%. Yewa Division accounts for five (5) Local Government Areas namely Yewa South, Yewa North, Imeko-Afon and Ipokia, while the Ado-Odo/Ota LGA forms the 5th Awori part of the senatorial district. They are primarily agriculturalists involved in the production of cassava, maize, yam, tomatoes, melon, cocoyam and other arable crops.

Sampling Procedure

This study targeted cooperators in Yewa Division of Ogun State whether they are members of agricultural cooperative societies or not. A multi-stage sampling technique was used in selecting cooperators in the study area for the interview. The first stage involved the purposive selection of three (3) Local Government Areas out of the five (5) Local Government Areas of the division due to proximity to the research base and period of research. The selected local government areas were Yewa North, Imeko-Afon and Ado-Odo/Ota. In the second stage, four (4) communities were randomly selected in each Local Government which resulted in twelve (12) communities/villages (Ado-odo, Alapoti, Ilogbo, Igbesa, Ayetoro, Sawonjo, Igan, Saala, Imeko, Idofa, Ilara and Obada). In the last stage, a random

selection of Ten (10) farmers from each community/village. Thus, a total of one hundred and twenty (120) farmers' cooperators were interviewed for this study.

Method of Data Analysis

Descriptive statistics was used to profile the socio-economic characteristics and profile the level of participation of farmers in agricultural cooperative societies. The descriptive statistics include an analysis of frequency distribution, tables and percentages. The poverty status of respondents was determined using the income approach and computed using Foster, Greer and Thorbecke model. The model specification was as follows:

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

Where: $P\alpha$ = Poverty index; N = the size of the population under study (120); Z = poverty line; $Z - Y$ = the gap between the poverty line and the income for each poor individual; q = number of individuals below the poverty line; Y_i = capital income of the i th poor household; α = non-negative poverty aversion parameter that takes the value 0, 1, 2.

Poverty line was adopted from Ighoro and Omoregbee (2016). Which was the two-third mean income of respondents in the study area. Based on this, respondents were classified into two groups:

- **Non-Poor:** those with income above two-thirds mean income of respondents, i.e. $NP > 2/3$ (mean income)
- **Poor:** those with income between one-third and the two-thirds mean income of respondents, i.e. between $1/3$ and $2/3$ (mean income)

Effect of Participation in Cooperatives on the Poverty Status of Farmers: The Probit regression model was used to analyze the effect of membership of cooperatives on poverty status. The model is expressed implicitly:

$$Y^* = X\beta + \varepsilon$$

$$Y_i = \begin{cases} 1 & \text{if } Y^* > 0 \\ 0 & \text{if } Y^* \leq 0 \end{cases}$$

$$W = f(X_1 + X_2 + X_3 + \dots + X_{17} + e_i)$$

Where

W = poverty status of cooperators (Non-poor= 1, poor= 0)

X_1 = age of the cooperators (number/year); X_2 = gender (male= 1, 0 otherwise); X_3 = educational level (number of years spent in school); X_4 = marital status (married=1, otherwise=0); X_5 = household size (number); X_6 = dependency ratio (working household members/non-working members); X_7 = cooperative experience (year); X_8 = size of shop/office (large = 2; medium = 1; small = 0); X_9 = participation in secondary occupation (Yes = 1; 0 if otherwise); X_{10} = amount of loan accessed in the last

one year (naira); X_{11} = Value of assets owned (Naira); X_{12} = access to safe water (Yes = 1; 0 if otherwise); X_{13} = access to good healthcare (Yes = 1; 0 if otherwise); X_{14} = access to toilet facilities (Yes = 1; 0 if otherwise); X_{15} = access to accessible roads (Yes = 1; 0 if otherwise) e_i = error term.

Results and Discussion

Community Characteristics

Table 1 explicitly presents the availability of basic amenities in the study area. Majorly, the study area is composed of roads that were not motorable 44.2%. Power supply had proven to be important for the survival of all types of businesses and the well-being of dwellers. Here is the present state of electricity in the study area. Unlike access roads, majority (85.0%) of the respondents were connected to national grid while a few (15.0%) were not connected. This implies that majority of them will have to spend less on alternative sources of power supply (Petrol, diesel or Solar inverter) when there is PHCN power supply. This result corroborates the findings of Akinbode (2013) who noted that the sampled respondents relied on power supply from the federal government-owned (now in the process of being privatized) Power Holding Company of Nigeria (PHCN) complemented by the use of petrol or diesel powered generators. In addition, the study found that borehole was the major source of water available to the community dwellers of Yewa Division. The results of these findings support that of Akinbode (2013) who reported that boreholes, government pipe-borne water and covered well were the major sources of drinking water for the households in Ogun State.

Socioeconomic Characteristics of Respondents

The Socioeconomic characteristics of sampled farmers are presented in Table 2. The result revealed that majority of the farmers were female (52%), married (76.9%) with an average age of 49 years and the mean years of education of 9 years. This indicates that the farmers were still economically active both in their farms and in their cooperative societies. This result agrees with Ogunnaike *et al.* (2019) who stated that farmers in Ogun State were within their active age. Furthermore, the result revealed that majority (54.2%) of the respondents lived in a rented apartment with an average of 10 years' experience in cooperatives.

Types of Existing Cooperatives

The study sought to identify the various types of cooperative societies that existed in the study area as presented in Table 3 below. Multipurpose Cooperative Societies and Credit and Thrift Cooperative Societies were the only two societies found in the study area. However, the majority (89.5%) belonged to multipurpose cooperative societies while a few percentages (10.5%) were credit and thrift cooperators. This result is supported by that of Adetunji *et al.* (2008) who opined that the multipurpose cooperative is more suited to meet the diverse needs and interests of cooperators than other cooperative types. In addition, Ighoro and Omoregbee (2016) noted that membership in

the credit and thrift society is attributed to the fact that it provides necessary funds for members' petty needs, without stringent collaterals but multipurpose best suit members.

Poverty Status of Respondents

It was expected that participation in a cooperative society will positively affect the members and reduce poverty among them because poverty reduction is one purpose of a cooperative society. The results of the present study as presented in Table 4 revealed that more than half (50.8%) of the respondents belonged to the non-poor class of poverty line. This means that out of the sampled 120 respondents, 61 of them were not poor. Inferentially, they had their Mean Per Capital Expenditure equal to or above the MPCE (N2,207.56) in the study area. In addition, the result found that almost half of the respondents (49.2%) were in the poor class. The implication of this is that 59 of the 120 respondents had their Mean Per Capital Expenditure between one-third and two-thirds mean income of respondents. The finding of this study is in agreement with Olorunsanya *et al.* (2011) and Akerele and Adewuyi (2011) who found that 47% and 81% of cooperators belonged to the poor class.

Effect of Participation in cooperative society on the poverty level of Cooperators

It is expected that participation in a cooperative society will positively affect members and reduce poverty among them in that being a member of a cooperative society is able to alleviate poverty. As a matter of fact, poverty reduction is one purpose of a cooperative society. Table 5 explicitly presents the results of the analysis. The results of the analysis as presented in the Table above revealed that year spent in school, cooperative experience, presence of secondary occupation, access to loan, amount of loan accessed, access to safe water, access to good and tarred roads, and access to good communication network signal were statistically significant. Education is vital for boosting the productivity of the human factor and making people more aware of opportunities for earning a living or income generation from all sources. In this wise, sampled cooperators who were educated were found to be less likely to be poor when compared with those that are not educated as the level of education of the cooperators was statistically significant at a 10% significant level, and inversely (negatively) related to the probability of the members being poor. The implication of this is that the probability of being poor decreases with an increase in the educational attainment of the members of a household. The result is consistent with the findings from previous studies (Afolabi and Ganiyu, 2021; Olagunju *et al.* 2021; Manda *et al.*, 2020). Further evidence was given by (Ogwumike and Akinnibosun, 2013), to confirm that there is a link between educational attainment, the income-earning potential of the members and poverty. They pointed out that there is a minimum level of education necessary to enhance appreciation and adoption of new technologies that can be instrumental in increasing household

productivity, and thereby earn more income. The increased income will enable the households to move out of poverty.

The cooperative experience was negatively signed and statistically significant at 10 percent level of significance. The implication of this is that the poverty level of members will decrease by 90% with an increase in years of cooperatives participation. This finding is in conformity with a *prior expectation* and in line with the conclusions of (Adeyeye, 2001; Action Aid Nigeria, 2009; Adekoya, 2014). The analysis also revealed that having a secondary occupation was positively signed and statistically significant at 5 per cent level. This result implies that farmers with a secondary source of income have a reduced probability of being poor. It can therefore be inferred that cooperative experience gives a chance to climb above poverty level in that it gives access to credit facilities which in turn enable cooperative members to expand the scope of their businesses or for diversification. These findings support that of Akerele and Adewuyi (2011) who noted that more years of cooperative experience brings trust on the part of loan dispensers and adequate loan usage on the part of a cooperator thus, access to adequate credit for business expansion and diversification. The study also found that the amount of loan accessed was negative and statistically significant at 5%. This implies that it may not be enough to have access to credit facilities, an increase in the amount of loans accessed reduces the probability of being poor. Access to safe water, toilet facilities and motorable roads were also positively significant. It implied that cooperative members who have increased their income will have the capacity to build or rent apartments, and offices in a place, or locality with safe and clean water for consumption thereby reducing the probability of being poor.

Conclusion

This study assessed the effect of Cooperative membership on the poverty level of farmers in Yewa division, Ogun State, Nigeria. Evidence provided in this work has shown that multipurpose society is the most common cooperative in the study area. Also, more than half of the cooperators were not poor. This study also found that the probability of being poor decreases with an increase in educational attainment, cooperative experience, participation in secondary occupation, having access to loan, and amount of loan accessed. Based on the findings of this study, the study therefore recommends among others; Improvement in enhancement of human capital through investment in formal education. This should involve training in life skills and vocations which would help stimulate the innate entrepreneurial potentials of the people and expand the frontier of their income generating capacities and become more productive. Cooperative societies should be enlightened through sensitization on proper utilization of loan accessed as this will help them generate more income that could lift them above the poverty line. Efforts by both governments and non-governmental agencies in the area of infrastructural

development (provision electricity supply, boreholes, pipe borne water, among others) would go a long way to improve the living condition of people in the study area

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Table 1: Distribution of Respondents by Basic Amenities

Characteristics	Frequency	Percentage
Access roads		
Tarred and in good state	9	7.5
Tarred, but in poor state	43	35.8
Un-tarred but motor-able	25	20.8
Not motor-able	53	44.2
Access to Electricity		
Linked to National Grid	102	85.0
Not Linked to National Grid	18	15.0
Water Sources		
Pipe-borne	18	15.0
Borehole	79	65.8
Well water	12	10.0
Stream	2	1.7
Two or more (e.g, well and stream)	9	7.5
Toilet Facilities		
Water closet	98	81.7
Pit latrine	18	15.0
None	4	3.3

Source: Field Survey, 2021

Table 2: Distribution of cooperators by Socioeconomic Characteristics

Socioeconomic Characteristics	Frequency	Percentage
Age (Years)		
≤ 40	23	19.2
41 – 50	71	59.2
51 – 60	12	10.0
61 and above	24	20.0
Mean Age	49	
Sex		
Male	57	47.5
Female	63	52.5
Religion		
Christianity	64	53.3
Islamic	45	37.5
Traditional	11	9.2
Educational Status		
No formal Education	8	6.7
Primary Education	10	8.3
Secondary Education	41	34.2
OND/NCE	21	17.5
B.Sc/HND	16	13.3
Apprenticeship	24	20
Mean Years of Formal Education	9	
Marital Status		
Single	16	13.3
Married	92	76.7
Divorced	5	4.2
Widowed	4	3.3
Separated	3	2.5
Occupation of Cooperators		
Trading	44	36.7
Self employed	32	26.7
Civil servant	18	15.0
Artisan	14	11.7
Farming	12	10.0
Ownership of Building		
Household Head	4	3.3
Spouse	50	41.7
Rented apartment	65	54.2
Experience		
1 – 10	62	51.7
11 – 20	36	30.0
21 – 30	16	13.3
31 – 40	5	4.2
41 and above	1	0.8
Mean	10	

Source: Field Survey, 2021

Table 3: Types of Existing Cooperatives in the Study Area

Existing Cooperative	Frequency	Percentage
Multipurpose Society	91	75.8
Credit and Thrift	29	2.4
Fishery Cooperative	-	-
Housing Cooperative	-	-
Marketing Cooperative	-	-
Consumer Cooperative	-	-
Farmers' Cooperative	-	-
Total	120	100

Source: Field Survey, 2021

Table 4: Distribution of Sampled Cooperators by Poverty Profile.

Poverty status	Frequency	Percentage
Non-poor	61	50.8
Poor	59	49.2
Total	120	100

Source: Field Survey, 2021

Table 5: Effect of Participation in Cooperative Society on the Poverty level of Cooperators

Variable	Coefficient	T-value
Constant	- 19.253	- 1.459
Age	6.559	1.528
Gender	3.573	0.845
Years of education	- 0.084*	- 1.965
Marital status	0.000	1.448
Household Size	- 0.472	- 1.523
Dependency ratio	0.000	1.236
Cooperative Experience	- 0.076*	- 1.925
Size of shop/office	0.322	1.572
Participation in Secondary Occupation	0.080**	2.390
Amount of loan accessed	-0.715**	- 1.980
Value of assets owned	0.816	0.286
Access to Safe Water	0.000**	2.489
Access to Good Healthcare	3.907	0.693
Access to Good Toilet Facilities	0.9***	2.586
Access to Good and Tarred road	1.186***	2.541
Log-likelihood	-51.604	
Chi- Square	31.751	

Source: Field Survey, 2021.