ANALYSIS OF INCOME AND POVERTY LEVELS OF AGRICULTURAL CO-OPERATORS AND NON – CO-OPERATORS IN ABIA STATE, NIGERIA

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Abstract
This study analysed income and poverty levels of agricultural co-operators and non- co-operators in Abia State, Nigeria. Simple random sampling technique was used to select160 respondents (80 co-operators and 80 non – co-operators). Data were collected with two sets of structured questionnaire and analysed with descriptive statistics, Foster Greer and Thorbecke (FGT) class of poverty and Z – test analysis. The result of socio-economic characteristics showed that 63.8% of co-operators and 61.2% of non–co-operators were males, 62.5% (co-operators)and 56.2% (non-co-operators) were married, as against 47.5% and 48.75% of cooperative and non-cooperative farmers that acquired secondary education with mean farm incomes of₦201, 000 (co-operators) and ₦140, 000.00 (non - co-operators).The result revealed thatco-operators had increased income (90%), higher farm yield (83.75%) and extension education on production, processing and marketing of produce (81.25%) as benefits.The Z-test analysis showed that the income of cooperative farmers were significantly higher than the non-cooperative farmers at 1% level of probability.Resultshowed that the poverty levels of cooperative farmers were reduced because of cooperative membership than their counterparts at 1% level of probability. Awareness and sensitisation on cooperative membership need to be intensified for increased access to farm inputs, income and poverty reduction.

Keywords:*Income, Poverty, Cooperativeness, Agriculture*

Introduction

Cooperative as defined by International Cooperative Alliance (ICA, 2009) is an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly-owned and democratically–controlled enterprise. Agricultural cooperatives are important in the socioeconomic development of the rural economy. DFID (2010), argue that cooperatives make an important contribution to sustained economic growth and to making markets function better for poor people. The United Nations study has acknowledged important direct and indirect impacts on socio-economic development in terms of promoting and supporting entrepreneurial development, creating productive employment, raising incomes and helping to reduce poverty while enhancing social inclusion, social protection and community-building. Several studies argue that cooperatives not only directly benefit their members, but also have positive effects on the rest of the society (UNSIN, 2014). More specifically, agricultural cooperatives play an important role in food production and distribution, and in supporting long-term food security.Cooperative enables low income people toaccess financial and non-financial services that are packaged in a manner thatenable those who are unable to access formal financial services, i.e.comparative access to small loans, saving schemes and other services for workingcapital and income generation (Nathan *et al*., 2004).

Essentially, poverty in Nigeria, as in most other developing countries is a rural phenomenon. According to United Nations Trust Fund for Human subjects (UNTFHS, 2009), the poverty level of Nigeria currently stands at about 70%, up from 27% in 1980. The 2007 Human Development Index stood at 0.466, ranking Nigeria as 151 out of 177 countries. The country takes 57th position among the 95 poorest countries in the world. The prevalence and dimensions of poverty in Nigeria does not need further explanation and debate. This is because such terms like absolute, abject and extreme have all been used to qualify the poverty situation in Nigeria (Nwaobiala and Nwosu, 2015). Poverty reduction is given priority attention through measures to accelerate economic growth and through targeted social institutions. However, a significant reduction in poverty requires sustained long-term double digit growth. This is a major challenge, given that public sector funds are still being invested in loss making public enterprises and policy implementation remains weak (IDS, 2006). It is reported that the current rate of reduction of poverty in Nigeria is too slow to meet the targets set for 2015 (NPC, 2008). However, evidence suggests that the key to alleviating poverty in many parts of the world is a more productive and profitable agricultural sector that facilitates formation of cooperative societies.

Basically, poverty entails low income, low or no access to production inputs, low productivity, illiteracy and lack of access to information and basic necessities of life. It describes a condition of low income that leads to low saving, resulting in low investment and, as a consequence of that, productivity remains low (Adegeye and Dittoh, 2005). Farmers are said to be trapped in this vicious poverty cycle due to their low output, low farm production; their income remains low and they are unable to make the necessary investments in farm expansion. The consequence of this is that they are unable to improve their living standard.

According to World Bank (2015) approximately 100 million people live on less than US$1/day, 64% of Nigerians live below the poverty line and over one third live in extreme poverty (those who cannot afford 2,900 calories per day) (UNDP, 2016). The rising profile of poverty in Nigeria is assuming a worrisome dimension as empirical studies have shown. The persistent difficulties encountered by government in creating awareness and helping rural families to satisfy their basic minimum needs, increased income and reduce poverty through co-operative formation is yet to be ascertained in the study area.In view of the above stated facts, this study was undertaken to analyse the income and poverty levels of agricultural co-operators and non - co-operators in Abia State, Nigeria.

The specific objectives were to:

- describe selected socio-economic characteristics of co-operators and non-co-operators;
- ascertain the benefits co-operators derive from cooperative societies;
- determine and compare the income levels of co-operators and non-co-operators in the study area; and,
- determine and compare the income levels of co-operators and non-co-operators in the study area;

Methodology

The study was conducted in Abia State of Nigeria, which was created on the 27th August, 1991; out of the old Imo State. It is one of the five states in the South-East geo-political zone of Nigeria. Abia State comprises of 17 Local Government Areas (LGAs), grouped into three Agricultural zones, which include: Aba, Ohafia and Umuahia.The State is located within latitudes 4^o 41^1 and 6^o 14^1 N and longitudes 7^0 10^1 and 8^0 0^1E. The geographical location makes it a land-locked State. It occupies a land area of about 5243.775 sq. Km^2 which is approximately 5.8% of the total land area of Nigeria with less than half of this land area being economically utilized (ABSEEDS, 2005). It shares common boundaries to the North with Ebonyi State, to the South and Southwest with Rivers State and to the East; and to Southeast with Cross River, Imo and AkwaIbom States. Abia State is located within the forest belt of Nigeria. Purposive and multistage random sampling techniques were adopted in the study. The lists of co-operators were obtained from the Abia State Ministry of cooperatives and Abia State planning Commission, Umuahia. This formed the sampling frame covering members from the selected cooperatives. From the list, 10 cooperative societies were randomly selected across the state. Furthermore, 8 co-operators each were randomly selected from the selected cooperative societies to give a total of 80 co-operators. Also, 80 non-co-operators were randomly selected from the areas where the co-operators were selected. Thisgave a grand sample size of 160 respondents.Descriptive statistics such as frequency counts, percentages and means, Foster Greer and Thorbecke (FGT) class of povertyand Z – test were adopted in the study.

Model Specification

i. Foster Greer and ThorbeckeFGT, (1984) class of poverty measures was used to determine the poverty levels of co-operators and non – co-operators in the study area.

The FGT class of poverty measure is defined by:

$$P\propto = 1/n \sum_{i=1}^{q}(z - yt/z) \propto$$

Where:

Pα= Poverty index;

N = the size of the population under study (160);

Z = poverty line; Z - Y = the gap between the poverty line and the income for each poor individual;

q = number of individual below the poverty line;

Yi = capita income of the ith poor household; α= non-negative poverty aversion parameter that takes the value 0, 1, 2.

As the exponent, increases the "aversion" to poverty as measured by FGT index increases.

Where =0, the index gives the head count ratio or the incidence of poverty which is the percentage of Co-operative member and non-members that are classified poor in the area.

Where =1, the index measures the poverty depth, it means percentage shortfall of income below poverty line while severity of poverty is measured when =2.

ii. The "Z"- test was used to test no significant difference between income and poverty levels of cooperative and non – cooperative farmers in the study area.

$$Z = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}}$$

$n_1 + n_2 - 2$ degrees of freedom

Where "Z" = "Z" statistic

$\bar{X}_1$ = Sample mean for income/poverty levels of co-operators

$\bar{X}_2$ = Sample mean for income/poverty levels of non - co-operators

σ^2_1 = Standard deviation for income/poverty levels of co-operators

σ^2_2 = Standard deviation for income/poverty levels of non - co-operators

n_1 = Sample size for co-operators

n_2 = Sample size for non-co-operators

Results and Discussion

Selected Socio-economic Characteristics of Farmers

Gender

The distribution of the respondents according to gender is shown in Table1. The table showed that a large proportion (63.8%) of the co-operative farmers were males while a moderate proportion (36.2%) were females. Also, large proportions (61.2%) of non-cooperative farmers were males while 38.8% were females. The result is in tandem with the findings of Anyiro and Oriaku (2011) as they found that majority of members of cooperative societies were males.

Marital Status

Result of marital status among co-operators and non-co-operatorsrevealed that a large proportion (62.5%) of cooperative and a good proportion (56.2%) of non-cooperative members were married. The table further indicated that 33.8% and 43.8% of cooperative and non - cooperative members were single respectively, while a few (3.8%) of cooperative farmers were divorced. This result corroborates with Iwuchukwu*et al,* (2013), that greater proportions of farmers were married.

Level of Education

Data in Table 1 shows that a moderate proportion 47.5% and 48.75% of cooperative and non-cooperative farmers acquired secondary education as against 42.5% (cooperative farmers) and 33.8% (non-cooperative farmers) that had tertiary education. Education has to do with the ability to acquire new knowledge and use relevant information. This result agrees with the findings of Jamilu*et al.,* (2014) that farmers that belonged to cooperative societies wereeducated.

Farm Income

The result of farm income of respondents indicate that a moderate proportion (35.0%) and (31.2%) of co-operators and non - co-operators had farm income ranging between ₦ 101,000 - ₦150,000 and ₦51,000 – ₦100,000 respectively. The mean farm income for co-operators was₦201, 000 while the non - co-operators had ₦140,000.00. The result indicated that cooperative farmers earn higher income from farming activities more than their non-cooperative counterparts (Ogbonna and Nwaobiala, 2015).

Table 1: Distribution of the Socioeconomic Characteristics of Co-operators and Non- Co-operators

	Co-operators (n =80)		Non Co-operators (n =80)	
Variables	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Gender				
Male	51	63.8	49	61.2
Female	29	36.2	31	38.8
Marital status				
Married	50	62.5	45	56.2
Single	27	33.8	35	43.8
Divorced	3	3.8	0	0.0
Level of Education				
No formal education	2	2.5	6	7.5
Primary education	6	7.5	8	10.0
Secondary education	38	47.5	39	48.75
Tertiary	34	42.5	27	33.8
Farm income (₦)				
10,000-50,000	6	7.5	25	31.2
51,000-100,000	25	31.2	37	46.2
1001,000-150,000	9	11.2	8	10.0
151,000-200,000	28	35.0	7	8.8
201,000-250,000	12	15.0	3	3.7
Mean	**201,000**		**140,658.8**	

Source: *Field Survey, 2015*

Benefits Derived From Cooperative Societies AmongRespondents

The benefits of membership to cooperative societies according to co-operators in the study area are shown in Table 2. The table revealed that majority (90.00%) of the co-operators ascribed to increased income as a benefit of membership to cooperatives societies, higher farm yield (83.75%) and provision of extension education in production, processing and marketing of agricultural products (81.25%) were benefit derived from cooperative membership. Furthermore, improved living conditions (66.9%), provision of locally needed services and employment avenue for distribution of food crops, fertilizers, seedlings, credit among others (58.75%), and provision of health and recreational facilities (51.25%) were all perceived as benefits of membership to cooperatives societies by cooperatives farmers in the study area. This result is in agreement with the findings of Nwaru and Onuoha

(2010), those agricultural cooperative members in Imo State identified increased farm income as a result of higher farm yield as a major benefit derived from the association. In the same vein, Onwudinjo, (2012) assert that farmers' cooperative societies helps to enhance farming activities and in turn boost yield of farmers.

Table 2: Distribution of Respondents According Benefits of Cooperative Societies

Benefits	Frequency	Percentage
Increased income	72	90.00
Higher farm yield	67	83.75
Improved living conditions	54	67.50
Provide locally needed services and employment avenues for distribution of food crops, fertilizers, seedlings, credits etc.	47	58.75
Provide extension education in production, processing, marketing of agricultural products	65	81.25
Provision of health and recreational facilities	41	51.25

Source: *Field Survey, 2015*
Multiple Responses Recorded

Income Levels of Co-operators and Non - Co-operators

The result of difference in income levels of co-operators and non- co-operators in the study area in shown in Table 3 The table reveals that the mean income of the co-operators was ₦296, 222.50, while that of non - co-operators was ₦164, 527.50.The difference in income levels between the two groups of co-operators was ₦131, 695.00, with standard deviation of ₦41, 032.00. The standard deviations were also lower than the means indicating that there were no wide variations in income. The result shows that the calculated "Z" is 5.86 and is highly significant at 1.0% level of probability. The micro-finance power of cooperative societies cannot be over-emphasized. Small scale enterprises have been promoted greatly by micro-finance institutes, the major and most geographically spread of which are cooperative societies that help increase the income levels of members (Akinwumi, 2006; Ayoola, 2006;Oladejo, 2008).

Table 3: Comparative Analysis of Income between Co-operators and non-Co-operators in the Study Area

Variables	Mean Monthly Income	Standard Deviation	Z-Cal
Cooperators	296,222.50	166,707.00	
Non Cooperators	164,527.50	125,675.00	5.86**
Mean Difference	131,695.00	41,032.00	

Source:*Field Survey, 2015* Decision =Accept

Poverty levels of Co-operators and non-Co-operators

The result of a difference in poverty levels of co-operators and non - co-operators in the study area is shown in Table 4. The table reveals that the mean poverty levels of the co-operators was ₦198,469.10, while that of non - co-operators was ₦110,233.40.The difference in poverty levels between the two groups of co-operators was ₦11,0233.40, with standard deviation of ₦27,491.05. The standard deviations were also lower than the means indicating that there were no wide variations in poverty profile of the respondents. The result shows that the calculated "Z" is 5.64 and is highly significant at 1.0% level of probability. The inability of the poor and low income group to have access to credits in Nigeria has contributed largely to the increased rate of poverty and food insecurity in Nigeria (Adereti and Oladejo, 2008; Salman and Akinbosoye,2013).

Table 4: Comparative Analysis of Poverty Levels between co-operators and non-Co-operators in the Study Area

Variables	Mean Poverty status	Standard Deviation	Z-Cal
Cooperators	198,469.10	111,693.40	
Non Cooperators	88,235.70	84,202.35	5.64***
Mean Difference	11,0233.40	27,491.05	

Source:*Field Survey, 2015* Decision =Accept

Poverty Levels of Co-operators and non - Co-operators

The result in Table 5 shows the estimated poverty levels of respondents in the study area. The results show that the study area was dominated by the non-poor (70% for co-operators and 63.75% for non-co-operators). About 17.50% and 10.00% of the co-operators and non-co-operators were moderately poor respectively. The same scenario also was prevalent among the extremely poor (12.50%) for co-

operators and 26.25% for non-co-operators. Among the respondents, the extremely poor dominated within the non-co-operators. This may be as a result of the mean income of the respondents. The mean income of the non-co-operators was lower (₦164, 527.00) than their counterpart who are co-operators (₦296, 222.00). There is a growing trend of global acceptability of cooperative societies as enhancer factor of micro-enterprises and poverty reduction strategy (Oladejo, 2008; Yunus, 2008; Umebali, 2004).

Conclusion and Recommendations

Results from the study revealed that farmers benefited from cooperative membership throughincreased income, higher farm yield and processing and marketing of agricultural products. Also, the incomes of cooperative farmers were significantly higher than the non - cooperative farmers, while cooperative societies reduced poverty of members than non – co-operators.The study therefore recommends sensitization on the need to join cooperative societies by government and stakeholders and pooling of farm produce for easy access to improved farm inputs in order to increase income and reduce poverty.

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