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Contributions of Farmer Cooperatives to Arable Crop Production in Umuahia North Local Government Area in Abia State, Nigeria

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Abstract:

In recognition of the need for collective action and networking among farmers the study investigated the contributions of farmer's cooperative societies to arable crop production in Umuahia North Local Government Area of Abia State. Purposive and random sampling techniques were employed to select 120 respondents, including cooperators and non-cooperators. Data were analyzed using descriptive and inferential statistics. Many of the respondents were between 21-40 years, 33% and 23.4% of cooperators and non-cooperators respectively had secondary education. Forty percent and 25% of cooperators and non-cooperators respectively were engaged in farming and trading. Respondents (cooperators) highlighted major benefits accruing from cooperative membership including easy access to credit, easy access to farm inputs, avenue for disposal of produce, and opportunity for accessing arable crop production innovations. The major problems associated with arable crop farmers were insufficient card (21%) high transportation cost (3.33%) and storage of farm labour (8.3%). Since cooperative societies serves as vehicle for enhancing rural people welfare and agricultural development, cooperative education is essential for both cooperators and non-cooperators. Loans should be made available to co-operative organizations and cooperative learning centers established in Abia state.

Keywords: *Farmers cooperators, Arable crop production, Inter-connectedness, Networking*

1. Introduction

Cooperatives play crucial role in reducing poverty, improving food security and generating employment opportunities (UN, 2012) farmers organization play a significant role as an institutional vehicle for promoting agricultural development through helping farmers solve common problem in relation to agricultural inputs, credit, technical knowledge and marketing of produce. All these services aim at improving farming activities and enabling them to gain economic benefits to sustain their well-being pelimiria and Justin (2015). Farmers organization (cooperative) emerged in the world die to farmers felt need such as sharing of local resources (land, labour and water) and market pressures (prices and access to services credit, input supply and advisory services or for purely social security and food security (Wennink *et al.*, 2007).

However, most of these cooperatives were created and managed under government directives, most cooperatives lack accountability and hence were uneconomically viable Nonetheless due to the mismanagement and corruption of government official in Nigeria.

Most cooperatives failed to actualize the goal; consequently, farmers cannot access input and technologies at affordable prices. Subsequently a small number of small-scale farmers remain poor and cannot influence policies that affect their well-being hence the need for formulation of farmer's organization. Generally, cooperation among farmers in search for common solutions to their problem is seen as one of the major in promoting the well-being of farmers, even if cooperative encounter shortcomings Grigoryan *et al.*, (2008).

Accordingly, during the 1990s developing countries, Nigeria included, encourage formulation of farmers' cooperative organization at different levels in order to enable their incorporation into research extension system and other services (Carney, 1996) the formation of farmers organization is an important tool of assuring that farmers improve their standard of living. Farmers' cooperative organization provide a wide range of services such as sourcing of agricultural inputs, access to knowledge and information, reduced cost of inputs and transportation of goods to market. Allow collective lobbying for

desired changes and as such they have the potential to positively influence agricultural policy outcome. Mapi La *et al.*, (2010). Furthermore, farmer's cooperative organization might be a good vehicle for donors to reach farmers, as a group living in sparsely populated rural areas with weak infrastructure, this would in turn facilitate assistance in terms of grants or loans that can enable these farmers improve their well-being (Bachike, 2009).

Despite the fact that farmer's cooperative organization play a crucial role in the development of rural agriculture and farmers well - being, there is a lack of clear indication on their contributions to the general agricultural production of individual farmers especially in Umuahia North Local Government Area in Abia State, Nigeria. The paper therefore, aims at describing the socio-economic characteristics of the farmers, with cooperators and non-cooperators, determine the constraints associated with the agricultural activities of the farmers who are cooperators, examine the contribution of farmers cooperatives to respondent well-being, factors influencing farmers members to cooperatives societies in the study area.

2. Methodology

The study employed purposive and random sampling technique, the Local Government Area consists of 10 autonomous communities, and the study involved 120 respondents. (60 cooperators and 60 non-cooperators) in order to address the specific objectives, both primary and secondary data were collected. A structured questionnaire and interview schedule were used for primary data selection, descriptive statistics such as frequencies, percentage were determined in order to answer objective 1,2,three points,likert-type scale was used to generate data for objective three and a bench mark of 2.0 as decision rule was taken. probit regression model were carried out to answer objective four. The regression model used is shown below.

$$Y = B_0 + B_1X_i + B_2X_{i2} + B_3X_{i3} + B_4X_{i4} + B_5X_{i5} + B_6X_{i6} + B_7X_{i7} + B_8X_{i8} + B_9X_{i9} + \alpha$$

Y = dependent variable (members =1, non-members =0)

B_0 = constant

$B_1 - B_9$ = are regression coefficient which is a determinant in of change to Y

$X_1 - X_9$ = independent variables

er = error term

X_1 = Access to market information (information and demand.

X_2 = Access to extension services

X_3 = use of inorganic fertilizers

X_4 = use of pesticides

X_5 = Access to credit

X_6 = Use of herbicide

X_7 = Use of improve seeds

X_8 = respondents education level

X_9 = respondent marital status

3. Result and Discussion

Characteristics		FCOs Members, (N=60)		Nonmembers (N=60)	
		Frequency	Percentage	Frequency	Percentage
Age	23-35	21	38.8	38	47.5
	36-60	37	55.6	42	52.5
	61-above	2	2.6	-	-
	Total	60	100.00	60	100.00
Sex	Male	37	65	31	58.1
	Female	23	35	29	46.9
	Total	60	100.00	60	100.00
Marital status	Single	10	16.67	14	23.33
	Married	35	58.33	30	50.00
	Widowed	11	18.33	10	16.67
	Divorce	4	6.67	6	10.00
	Total	60	100.00	60	100.00
Educational level	No formal education	4	6.67	15	26.67
	Primary education	10	16.67	20	33.33
	Secondary education	26	43.33	14	23.33
	Tertiary education	20	33.33	10	16.67
	Total	60	100.00	60	100.00

Characteristics		FCOs Members, (N=60)		Nonmembers (N=60)	
		Frequency	Percentage	Frequency	Percentage
Household size	0-4	12	20.00	10	16.67
	10-14	10	16.7	38	63.33
	Total	60	100.00	60	100.00
Major occupation	Farming	40	70	35	65
	Petty trading	20	30	25	35
	Total	60	100.00	60	100.00
minor occupation	Livestock activities	22	35.1	20	33.33
	Wage employment	15	26.67	20	33.33
	Carpentry	12	20.00	10	16.67
	Weaving	11	18.33	10	16.67
	Total	60	100.00	60	100.00
Farm size (hectares)	0.00-0.99	0	00.00	54	90.00
	1.00-1.99	6	10.00	3	5.00
	2.00-2.99	10	16.67	2	3.33
	3.00-3.99	15	25.00	1	1.67
	4.00-4.99	29	48.33	0	00.00
	Total	60	100.00	60	100.00

Table 1: Demographic and Socio-Economic Characteristics of the Respondent N-120

Source: Field Data, 2014

3.1. Annual Farm Income

Cooperators			Non-cooperators	
Farm income (₦)	Frequency	Percentage	Frequency	Percentage
100-10,000	0	0.00	21	35.00
11,000-20,000	3	5.00	15	25.00
21,000-30,000	12	20.00	15	25.00
31,000-40,000	15	25.00	5	8.03
41,000-50,000	30	50.00	4	6.07
Total	60	100.0	60	100.0

Table 2

Source: Field Data, 2014

Respondent 'socio-economic aspects such as age, sex, marital status educational level, household size and respondent's occupation, farm size and farm income are as shown in table 1. Table 1

Generally, these characteristics have some influence on farmer's involvement in farming and decision to join farmers' cooperative organization (FCOs) age for instance is a variable which can determine the period of one's entry into agricultural production and other activities. In addition, one's age can influence an individual's preference of whether or not to participate in certain activities. Table 1 shows that more than half of the respondents (both FCOs and non - members) were above 35 years; 83.8 and 77.5% of both FCOs members and non-members were males. Additionally, more than 84% of both FCOs and members and non-members were married and had completed primary both and secondary education 43.33%, while non-members 33.33% completed primary school show that farming was the main economic activity of the co-operators. Most of the cooperators had a household size ranging from 5-9 persons. Most of the FCOs had large farm size and an annual income range of ₦11,000=40,000, 50% than non-FCOs members who have ₦11,000 - ₦20,000 as the range of the annual income. Most of the FCOs belong to the multi-purpose cooperative organizations. About 40% of the farmers' cooperative organizations source for their information through extension services.

Problems	Frequency	Percentage
Insufficient land	25	41.67
Land fragmentation	16	26.67
High cost of farm input	8	13.33
Shortage of farm labour	5	8.33
Incidence of pest and disease	4	6.67
High transportation	2	3.33
Total	60	100.00

Table 3: Distribution of Respondent's Problems Associated with Agricultural Production

Table 3 showed the distribution of respondents according to the problems associated with agricultural production in the study area. According to the result, insufficient land (41.67%), land fragmentation (26.67%) and high cost of farm input (13.33%). This implies that farmers in the study area were faced with several problems in the study area.

4. Examine Contribution of Farmers Cooperative Societies to Arable Crop Farming

Contributions	Σx	Std. Dv	\bar{x}
Access to market information	162	.69612	2.05
Access to extension services	188	.56168	2.38
Use of inorganic fertilizers	178	.72445	2.25
Access to credit	182	.53957	2.30
Use of improved seeds	188	.56168	2.38
Training of farmers	202	1.9612	2.72
Grand mean			2.34

Table 4: Distribution of Respondents According to Contribution of Farmers' Cooperative Societies

Source: Field Survey, 2014

Key: Very Often (VO) =3, Often (O) =2, Not Often (NO) =1, Bench Mark Mean = 2.0

Decision: $\bar{x} > 2.0$ Agreed, $\bar{x} < 1.9$ Disagree

Table 4 showed the distribution of respondents according to contribution of farmers' cooperative societies to arable crop farming in the study area. The grand mean of 2.34 confirmed that cooperative farmers in the study area contributed immensely to arable crop farming in the study area. The contribution of cooperative farmers to arable crop farming includes training of farmers ($\bar{x} = 2.72$), use of improved seeds ($\bar{x} = 2.38$), access to extension services ($\bar{x} = 2.38$), access to credit ($\bar{x} = 2.30$), use of inorganic fertilizers ($\bar{x} = 2.25$), and access to market information ($\bar{x} = 2.05$). The result implied that cooperative farmers made serious contribution to arable crop farming in the study area.

4.1 Factors Influencing Farmer's Membership to Farmer's cooperatives Societies

Parameter	Estimate	Std. Error	Z - value
Sex	-.005	.171	-.030
Age	.009	.010	9.079***
Marital	.156	.174	.896
Household	.002	.030	4.064***
Education	.017	.016	7.029***
Main occupation	.013	.049	.264
Farming experience	.006	.016	2.398**
Income	0.000	0.000	3.882***
Intercept	2.387	.459	5.202***
Chi - square	71.577***		
Df	52		

Table 5: Probit Regression Estimates of the Determinants of Membership to Cooperative Societies

Field Survey, 2016

Key: * Significance At 10%, ** Significance At 5%, *** Significance At 1% ***

Table 5 showed the probit regression estimates of the determinants of membership to cooperative societies in the study area. The intercept and Chi-square was statistically significant at 1% and indicates regression line of best fit and the fitness of the model used for the analysis. The coefficient of age was positive and statistically significant at 1% level of probability. The result implied that an increase in the age of the farmers will increase the probability of their membership to cooperative societies.

The coefficient household size was positive and statistically significant at 1% level of probability. This implies that an increase in the farmer's household size will lead to a corresponding increase in the probability of cooperative membership. The coefficient of farming experience was statistically significant at 1% and positively related to membership to cooperative societies. This implies that a unit in farming experience of the farmer will lead to a corresponding increase in the probability cooperative membership in the study area.

The coefficient of income was statistically significant at 1% level of probability and positively related. The result implies that an increase in the farmer's income will lead to an increase in the probability of cooperative membership in the study area.

5. Conclusion and Recommendation

Farmers' cooperative organizations (FCOs) are important in farming household's agricultural development. The paper therefore investigated the contributions of farmers cooperatives to agricultural production in Umuahia North Local Government Area of Abia State. Based on the findings from the study, it can be concluded that FCOs members access more services than is the case with non-members, these findings help them to raise their productivity. Generally, the higher yields were a result of combination of factors these include, easy access to agricultural input, extension services and marketing information are the core objectives of farmer's organization. Insufficient land and high transportation cost were among the constraints faced by the cooperators in the study area. It is recommended that rural farm households be encouraged to form or join farmers' cooperative organization, as these have a great potential of increasing farmers income and asset ownership. Government and extension agents should embark on more enlightenment campaigns about the importance of cooperative societies, through formation of schools on farmer's co-operative organizations in the study area.

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