

# PROPENSITY OF FARMERS TO SUBSCRIBE TO FARMERS' GROUPS IN DELTA STATE, NIGERIA

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## ABSTRACT

This study was carried out in Delta State, Nigeria to determine the factors that influence farmers to subscribe to farmers' groups. One hundred and fifty farmers were randomly selected and data were collected from them with the application of a questionnaire and interview schedule. The data were treated with the use of description statistics and Tobit regression Analysis. Subscription to membership of farmers' groups was found to be poor as evidenced in the subscription index (0.427). The marital status of farmers, educational level, household size, farm size, farming experience, extension visit and contact with other farmers were discovered to be correlates of the propensity of farmers to subscribe to self-help groups. It was recommended that extension agencies sensitize the leadership of such groups to satisfy members first; organize leadership training for such leaders; and re-orient farmers on the benefits of farmers' self-help groups.

## INTRODUCTION

Farmers' groups are regarded as instrumental social groups. Ofuoku and Chukwuji (2012) opine that these farmers groups may be regarded as socio-economic groups because they are formed to accomplish some common social and economic goals in relation to their farming activities. Farmers subscribe to such groups because they can use the membership to accomplish their social and economic goals. According to Iwala *et al* (2006), agriculture is a sure pathway towards poverty reduction, improved income distribution, diversification and rapid industrialization.

Farmers subscribe to farmers' groups for access to credit facilities. In such groups, members harness their financial resources for the benefit of members (Ofuoku *et al*; 2008). These groups also create access to agricultural information. As a result of the dearth of field extension agents,

extension activities are carried out in groups (Ofuoku and Urang, 2008). In their study, Ofuoku and Urang (2009) discovered that the most important reasons for subscription to such farmers' groups is access to credit facilities and extension information.

Ofuoku and Chukwuji (2012) observed that farmers' groups in Delta State experienced growth between 2002 and 2006, but between 2007 and 2011, they started experiencing a decreasing trend in membership subscription. This implies that they lost members either as a result of death or dissatisfaction. Individual members have needs which they want to satisfy through membership of such farmers' groups. Ofuoku *et al* (2008), Ofuoku and Urang (2009) assert that farmers would remain in their various groups if their needs were satisfied by the group.

No reaction takes place in a vacuum. There are situations that prompt people into reacting in certain manner. Farmers, in reaction to their situations are prompted to take some decisions and act on them. The question to be asked now is on the correlates of farmers' decision to subscribe to membership of farmers' groups. A lot of studies have been carried out on farmers' groups, but not much has been done on determinants of farmers' decision to subscribe to farmers' groups. This justifies further study on farmers' group issues.

## THEORETICAL FRAMEWORK

Farmers are engaged in decision making on a daily basis to settle questions which arise from the day-to-day and season to season operations of the farm (Agbam, 2006). Similarly they are involved in decision making as a result of their daily experiences on their farms (Ofuoku *et al*, 2011). This implies mental confrontation with the structure of ideas, problems and the settlement of these issue into concrete action, guidelines or actionable opinions (Ofuoku *et al*, 2008). This

entails taking into consideration all factors, whether the farms' production and social environment; making choices, discriminating on the basis of feasibility, and identifying consequences for alternative actions.

Farmers' propensity to subscribe to farmers' groups is informed by the challenges they confront in their farming business. The farmers' sources of information' determine the decision they take. According to Agbamu (2006), sources of information and acquired knowledge from those sources constitute the bedrock on which farmers base their decisions. Consequently the sources of information which farmers rely on to improve their production level gird the theoretical issues in decision making of the farmers.

The benefit of subscribing to farmers' self-help groups such as access to credit, access to extension service/information, cheap farm input, sharing of experiences and ideas, and collective marketing of farm produce are fundamental to farmers' decision to subscribe to such groups.

The socio-economic characteristics of the farmers are very important as they contribute to their propensity to subscribe. The benefits of subscribing to farmers' groups will be attained if farmers do not encounter challenges in decision making. The conceptual framework for analyzing decision making is gender, marital status, educational level, household size, farm size, farming experience, extension contact and contact with other farmers.

A farmer's decision for or against subscription to farmers' group is a mental process, consisting of several stages. Such activity will provide firm knowledge on which action can be based, with regard to persuading farmers (Ofuoku *et al*, 2011) to try group membership, to provide the information necessary for actual action and provide information needed to access results of decisions and hopefully to confirm them.

This study was conducted to determine the factors that influence the propensity of farmers to subscribe to membership of farmers' groups in Delta State, Nigeria. It is therefore hypothesized that the socio-economic characteristics of farmers do not significantly influence their propensity to subscribe to farmers' groups.

## METHODOLOGY

This study was conducted in Delta State, Nigeria. The three agricultural zones of Delta State Agricultural Development programme (DTADP) were used. A multi-stage random sampling technique was used to select the sample size. First, two local government areas were selected from each of the three zones resulting in the selection of six local government areas for this study.

Secondly, twenty-five farmers were randomly selected from the list of registered farmers in the selected local government area. The list was accessed at the three DTADP zone offices. This resulted in the selection of 150 farmers.

Data were collected from the respondents with the use of a structured interview schedule administered to less formally educated respondents and those who had no formal education, while a questionnaire was used for those who had a reasonable level of formal education.

The data collected were treated with the use of descriptive statistics such as frequency counts and percentages. The hypothesis was addressed with the application of Tobit model to estimate the propensity of farmers to exhibit farmers' group membership subscription behavior. Group membership index was computed by dividing the grand mean (overall) membership score by the number of membership stages.

### Model specification

The decision to subscribe to farmers' groups embodies both the socio-economic characteristics of the farmers, the endogenous (the characteristics and benefits of group membership) and the exogenous (institutional characteristics of the farmers' groups) such that the observed subscription to farmers group is hypothesized to be a result of these farmers' socio-system continuum.

In order to achieve the objectives of this study, the Tobit model was used to estimate farmers' propensity to exhibit subscription behavior. The Tobit model originally developed by Tobit (1958) is expressed thus:

$$Y = X\beta + E$$

where  $\beta$  is a vector of unknown coefficients,  $X$  is a vector of independent variables, and  $E$  is an error term that is assumed to be independently distributed with mean zero and a variance of 52.  $Y$  is a latent variable that is observable. If data for the dependent variable is above the limiting factor, zero in this case,  $Y$  is observed as a continuous variable. If  $Y$  is at the limiting factors, it is held at zero. This relationship is presented mathematically in the following two questions:

$$Y = Y^* \text{ if } Y^* > Y_0, \quad Y = 0 \text{ if } Y^* < Y_0$$

where  $Y_0$  is the limiting factor.

These two equations represent a censored distribution of the data. The Tobit model can be used to estimate the expected value  $Y_1$  as a function of a set of explanatory variables ( $X$ ) weighted by the probability that  $Y_1 > 0$  (Tobit 1958). Long and Freese, 2006. The expected intensity of subscription to farmers' group,  $E(Y)$  is:

$$E(Y) = X\beta F(Z) + 6F(Z) \text{ and } Z = X\beta/6.$$

where  $F(Z)$  is the cumulative normal distribution of  $z$ ,  $f(z)$  is the value of the derivative of the normal curve at a given point (unit normal density),  $z$  is the z-score for the area under normal curve, and  $\beta$  is the standard error of the error (Oladele, 2005). The coefficients for variables in the model,  $\beta$ , do not represent marginal effects directly, but the sign of the coefficient will give the researcher in respect of the direction of the effect. The definition of variables utilized in the estimation of the Tobit model is as follows:

$Y$  = farmers' propensity to subscribe to farmers' groups (Yes = 1, No = 0)

$X_1$  = Gender (Married = 1, female = 0)

$X_2$  = Marital status (married = 1, otherwise = 0)

$X_3$  = level of education (tertiary = 3, secondary = 2, primary = 1, none = 0)

$X_4$  = household size (7-9 people = 2; 4-6 = 1; 1-3 = 0)

$X_5$  = farm size (>6ha = 3; 5-6ha = 2; 3-4ha = 1; <3ha = 0)

$X_6$  = farming experience (>20yrs = 4; 16-20 = 3; 11-15 = 2; 6-10 = 1, 5 and below = 0)

$X_7$  = Extension visit (yes = 1; no = 0)

$X_8$  = contact with other farmers (Yes = 1; no = 0)

## RESULT AND DISCUSSION

### Group Membership Status of Farmers

Table 1 indicates that many farmers had not subscribed to farmers' groups yet, while some withdrew their membership. The low subscription levels, according to respondents, were prompted by the experience of those who withdrew from the groups. This is congruent with Ofuoku and Chukwuji (2012) who observed that most groups experienced loss of members due to dissatisfaction. Farmers would remain in their various groups if their needs were satisfied (Ofuoku and Urang, 2009). Once the individual farmers' needs are satisfied the group remains cohesive. Cohesiveness is the extent to which members of a group want to continue as members of the group.

Members of these farmers' groups subscribe to them to access credit, cheap inputs and extension information. Dissatisfaction and fewer members is attributed to the weakness of the leadership. Ogonwo and Eke (1999) suggest that democratic leadership which facilitates a group's performance and attainment of group and individual goals enhances group cohesiveness.

**Table 1: Distribution of farmers according to group membership subscription**

Subscription Stages	Cassava farmers Association (n=38)	Yam farmers Association (n = 38)	Fish farmers Association (n = 37)	Poultry farmers Association (n =37)
Awareness	14.2	10.4	3.4	6.6
Interest	7.4	22.6	18.2	13.4
Evaluation	29.0	24.6	22.6	18.0
Trial (probation)	33.1	10.2	16.4	22.8
Subscription	16.3	15.0	18.6	30.4
Withdrawal	0	12.8	12.8	6.2
Total	100	95.6	92.0	97.4
Mean adoption score	2.63	2.50	2.49	2.63

Mean of means (Grand mean) membership score = 2.56

Membership index = 0.427

### **Estimation of farmers' property to subscribe to farmers' group**

The results of the Tobit model (Table 2) indicate that seven of the socio-economic variables significantly influence the propensity of farmers to subscribe to farmers' groups. These include marital status, educational level, household size, farm size, farming experience, extension contact and contact with other farmers.

Marital status (X2) correlated at 0.05 level of significance. This is in consonance with a priori expectation. This implies that one of the factors that enhance the propensity of farmers to subscribe to farmers' groups is marital status. Marriage means added responsibilities. With the added responsibility the average farmer seeks ways to enhance his farming business through regular extension contact and access to farm related information, credit, exchange of ideas and access to cheap input.

Educational level (X3) positively and significantly correlated. This is congruent with a priori expectation. Educated farmers reason progressively and they behave progressively. Formal education enhances the farmer's comprehension of the importance of farmers' self-help groups. According to Agbam, (2006), formal education enables farmers to obtain useful information from bulletins, agriculture newsletters and other sources. Once farmer access related information, they understand the functioning of such groups. This understanding helps the decision of farmers to subscribe to such groups.

Household size (X4) significantly influences the propensity of farmers to join farmers' groups at 0.01 level of significance. The result implies that the smaller the household size the lower the propensity of farmers to join and the larger the family size is, the higher the propensity. With the

responsibility to the family that farmers bear, they are bound to subscribe to farmers' groups in order to enhance their productivity. The larger the household size, the higher the income required to cater for the family.

Farm size (X5) had positive correlation at 0.01 level of significance. This indicates that farmers with large farms more readily subscribe to farmers' groups.

Farming experience (X6) also influences farmers. More years of farming experience result in better understanding of the intricacies of farmers' groups, thus a better appreciation of them. With experience, farmers are more likely to perceive the benefits and importance of farmers' group membership. Farmers appreciate the need to join in order to mitigate some challenges they contend with.

Extension visit (X7) significantly influenced farmers at 0.05 level of significance. This emanates from the fact that the more extension agents visit farmers and educate them on the need to subscribe to farmers' groups, the better they understand and take the decision to subscribe. Eze et al (2006), Ofuoku et al (2008) suggest that the frequency of extension contact influences the behavior of farmers.

Contact with other farmers (X8) had a significant relationship with the propensity of farmers to subscribe to farmers' groups. This is in agreement with a priori expectation. Ofuoku and Urang (2009), Ofuoku et al (2008) observed that farmers subscribe to various farmers' groups to access extension services, credit, exchange of ideas/experiences and cheap inputs. More frequent contact with other farmers made these farmers have great influence on their thoughts and attitude towards farmers' self-help groups.

**Table 2 Estimated Tobit Model of Farmers' Propensity to Subscribe to Farmers' Groups**

Variables	Coefficient	Z-statistics
Intercept	0.59864	0.767

Gender (X <sub>1</sub> )	0.21316	1.418
Marital Status (X <sub>2</sub> )	-0.00082	-2.100**
Educational level (X <sub>3</sub> )	0.06985	1.852*
Household size (X <sub>4</sub> )	-0.14641	-3.326***
Farming Size	0.25512	2.732***
Farming experience (X <sub>6</sub> )	0.81512	1.817*
Estimation visit (X <sub>7</sub> )	0.54851	2.978**
Contact with other farmers (X <sub>8</sub> )	0.83522	2.526***
Log likelihood	-52.13552	
Standard error of regression	0.00103	

## CONCLUSION

Subscription of farmers to self-help groups is low. This is confirmed by the low adoption index of 0.427. The major reason was dissatisfaction among members who opted to withdraw because their individual goals were not being met by the group as a result of poor leadership. Others were yet to subscribe to such groups because of the experience of those who withdrew.

Marital status, educational level, household size and farm size were found to be correlates of farmers' propensity to subscribe to farmers' self-help groups. Other correlates were farming experience, extension visits and contact with other farmers. However, gender did not prove to be a correlate.

## RECOMMENDATIONS

1. Extension agencies need to sensitize the leaders of the various groups on the need to place members' needs first before theirs.
2. Extension agencies, both public and private, need to organize leadership training for various group leaders at regular intervals.
3. Extension agencies also need to do a lot of public relations work in order to get farmers to positively change their minds about joining farmers' groups.

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