



## **Factors Determining the Membership of Farmer's in Producer Organization (PO) a Study in the Assam State of India**

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### **Authors' contributions**

*This work was carried out in collaboration between all authors. All authors read and approved the final manuscript.*

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### **ABSTRACT**

Aim of this study to document the factors that influence farmer's participation in producer organizations. To address these issues, the Government of Assam decided to mobilize farmers in the form of Producer organization (PO). Producer organization meant for effective management of agriculture in a specific crop field. The history of Producer Organizations indicates that after performing successfully for a period of time it almost defunct. For sustainability of Producer Organizations, factors influencing its membership pattern need to be studied. Therefore, this study was conducted in Jorhat District of Assam to address this issue. Total 240 respondents were selected (120 members and 120 non-members of Producer Organizations) by using multistage sampling technique. The instrument for data collection was questionnaire that consists of two sections. Section one contained Individual level information i.e. Age, Education, Gender, Caste, Organizational participation, Extent of public extension contact. Section two had Family level/ house hold information i.e. Primary source of income, Size of the family, annual family income,

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Size of operational land holding. The t test indicated that there were significant difference between age, operational land holding, the extent of government extension contact, the primary source of income and annual family income of members' and non-members' means in these characteristics, both the groups were heterogeneous. From forward stepwise regression analysis, it was found that extension contact, operational land holding, annual family income and caste influences the membership pattern of Producer Organization. These variables together explained 67.50 per cent (Adjusted R<sup>2</sup> =0.675) of the variance of effective factors on farmer's membership pattern toward producer organizations. The study recommended that extension machinery should give emphasise on these factors and manipulate these factors for enrolling more farmers.

*Keywords: Factor; influence; membership; producer organization.*

## 1. INTRODUCTION

Agriculture of Assam is characterized by a large number of marginal and small farmers, fragmented land holdings, low level of adoption of technologies, low productivity, dependency on monsoon rainfall, etc. These hinder the improvement of agriculture. One policy that has been promoted to reach this goal is to create and support producer organization or cooperatives in developing countries. The producer organizations (POs) considered being formal rural organizations whose members organized themselves with the objective of improving farm income through improved production, marketing, and local processing activities [1]. Producer organizations deal with policies on issues such as pricing and export and import of agricultural products; improvement of agricultural production practices; access to inputs and services, including agricultural credit; marketing of agricultural production; and local processing of agricultural production and its marketing [2].

The basic idea is that producer organization will strengthen the farmer's negotiation position in relation to the buyers, and reducing transaction costs faced by farmers. This will bring farmers closer to the market, enable them to benefit from comparative advantages and maybe even to connect them to the international market. Secondly, the farmers' organizations might be a good vehicle for donors to reach the small-scale farmers, which generally is a group that is difficult to reach and targets for the donor as they usually live in sparsely populated rural areas with weak infrastructure [3]. POs can successfully strengthen the economic position of their members by providing agricultural inputs, credit, processing, and marketing services [4]. Globally, POs are increasingly recognized as an important actor in the Agricultural Innovation System [2,5].

### 1.1 The Governmental Effort for the Promotion of Producers' Organization in India

In India, the Central Government has identified farmers' producer organization as the most appropriate institutional form around which to mobilize farmers and build their capacity to collectively leverage their production and marketing strength [6]. Organizing producers, especially the small and marginal farmers are considered as one of the most effective pathways to address some of the most important challenges in agriculture. For instance, during the 12th Plan period (2012-2017), the Small Farmers' Agribusiness Consortium (SFAC) aims to further promote the producer organization [6]. The Government hopes that this will foster technology penetration, improve productivity, enable improved access to inputs and services and increase farmer's incomes. Similarly, the Ministry of Agriculture has identified farmers' POs registered under the special provisions of the Companies Act, 1956 as the most appropriate institutional form around which to mobilize farmers and build their capacity to collectively enhance their production and marketing strengths. It also involves linking POs directly to market opportunities to enable integration in the agriculture value chain and create direct producer-consumer supply chains. These developments have important implications for extension [6].

Though the performance of POs is quite good, but its sustainability is an issue from the very beginning. Department of Agriculture again tried to revive the POs. This time it abolished all the old POs and POs were registered newly. However, recent scenario reflected that farmers are reluctant to join in POs too. This time also POs did not perform well after the initial years. In spite of governmental effort, the POs were not performing well and sustainability was a major

point of worried. This effort is meaningless if farmers will not take membership of POs and it will be defunct again. So it was felt necessary to find out the reasons behind this.

There were few studies that evaluate factors influence of farmers towards farmers' organizations in developing countries in general and did not tie to a particular organization. There was little empirical evidence for the specific contracts and who can participate in the agreement [7,8]. However, there is no agreement on why farmers are not participating [8]. Most of the studies focus on evaluating income generating the effect of farmers' organizations in developing countries. In Assam, there are few studies on POs. Therefore more in-depth and objective evaluation of the PO is required to understand the issues. An understanding the factors influence of farmers towards POs etc. will go a long way in informing policy makers, extension personnel etc., to mobilize farmers to become a member of PO.

### **1.2 The Objectives of the Study were as Follows**

1. To compare selected characteristics between members and eligible non-member farmers of Producer organization.
2. To find out the factor that determines the membership of farmers in Producer organization.

## **2. METHODOLOGY**

This research was done in the Assam state of India. Jorhat district was selected for the study. A multistage sampling design was followed for selection of respondents of the present study. Jorhat District having three Agricultural Sub-Division namely Jorhat, Titabor, Majuli. Two categories of respondents were drawn for the present study i.e. member of POs and non-member of POs. From each sub-division forty (40) PO members were selected randomly. So, altogether 120 members were drawn from selected sub-divisions. A total of forty (40) non-members were drawn randomly from each of the selected sub-divisions. So, altogether 120 non-members were drawn from sub-divisions. Total 240 No's respondents. The instrument for data collection was a questionnaire that consists of two sections. Section one contained Individual level information i.e. Age, Education, Gender, Caste, Organizational participation, Extent of public extension contact. Section two had Family

level/ house hold information i.e. the Primary source of income, Size of the family, annual family income, Size of operational land holding. Data were analyzed using the Statistical Package for the Social Sciences (SPSS-11.5). Appropriate descriptive statistics such as frequencies, Percentage scores, mean scores, standard deviations and correlation and stepwise regression were used to analyze the data.

## **3. RESULTS AND DISCUSSION**

### **3.1 Comparison Selected Characteristics between the Member and Eligible Nonmember Farmers of PO**

The study revealed that in case of members, the majority of the respondents belongs to 23 to 38 years age group (40.00%) while in case of non-members, the majority of respondents belonged to 34- 49 years age group (60%). In both the case of members and non-members, majority (42.50 % in members and 43.33 % in nonmembers) respondents had 6 to 12 years in formal education. In both members' and non-member's majority (84.16% in members and 82.50% in nonmembers) of the respondents belonged to the male category. Majority of the respondent's belonged to general category in case of members (58.33%) and in case of non-members, 61.66 per cent respondent's belonged to general category. Members 60.83% and 80.00 % in nonmembers had no member of any other organization excluding PO. In case of members, the majority of the respondents (61.67 %) were a medium level of extension contact while in case of no- members majority of the respondents (84.17%) were a low level of extension contact. Primary sources of income of both the members and non-members, the majority (81.67% in members and 52.50% in nonmembers) were involved in on-farm activities. In both member and non-member (60.83% in members and 57.50% in nonmembers) respondent had medium-sized family i.e. 5 to 8 members. Majority of the respondents (43.33%) had annual family income within the category of Rs. 1, 00,000 to 2, 00,000 in case of members, while in case of nonmembers majority of the respondents (38.33%) had annual family income in the range of Rs.2,00,000 to 3,00,000. In case of members, the majority (86.67%) of the respondents belonged to small farmer's category i.e. 1-2 ha. While in case of nonmembers, the majority (85.83%) belonged to marginal category i.e. bellow 1 ha. Here t value indicates that education, gender, caste and family size were

nonsignificance means in these characteristics both the groups were homogeneous.

### 3.2 Factors Determining the Membership of farmers in Producer Organization

Table 1 presents the selected variables influence the membership of farmers in Producer Organization (PO). This objective was accomplished using forward stepwise regression analysis. Among 10 variables that entered into the model, only 4 variables had a significant influence on farmers' membership on PO. These were Extension contact, operational land holding, annul income and caste. These variables together explained 68.10 per cent (R<sup>2</sup> value) of the variance of effective factors on farmers membership pattern toward PO in Assam state.

The variable that entered the regression model first was 'extension contacts' considered alone; this variable explained 53.60 per cent of the variance for farmers' membership pattern. The second variable that entered into the model was 'operational land holding' and it explained 12.60 per cent of the variance. The third was 'annual family income' and it explained 1.30 per cent of the variable alone and finally the forth variable was 'caste' that explained 5.00 per cent of the variance.

The results of ANOVA are presented in Table 2. The Table 2 indicates that the F value of the model i.e. (Constant), Ext\_cont, Land, annul\_income, and caste is significant at 0.01 level of probability. The Table 2 indicates that the F value of the model is significant at 0.05 level of probability.

**Table 1. Findings of Model summary of forwarding stepwise regression for factors influencing membership of PO**

Model	R	R square	Adjusted R square	Std. The error of the estimate	R square change	F change	Sig. F change
1	.732 <sup>a</sup>	.536	.534	.34195	.536	275.126	.000
2	.814 <sup>b</sup>	.662	.659	.29253	.126	88.204	.000
3	.822 <sup>c</sup>	.675	.671	.28725	.013	9.794	.002
<b>4</b>	<b>.825<sup>d</sup></b>	<b>.681</b>	<b>.675</b>	<b>.28548</b>	<b>.005</b>	<b>3.944</b>	<b>.048</b>

a. Predictors: (Constant), Ext\_cont

b. Predictors: (Constant), Ext\_cont, Land

c. Predictors: (Constant), Ext\_cont, Land, Annul\_Income

d. Predictors: (Constant), Ext\_cont, Land, Annul\_Income, Caste

e. Dependent Variable: Membership of PO

**Table 2. The results of ANOVA of forwarding stepwise regression for factors influencing membership of PO**

ANOVA						
Model		Sum of squares	Df	Mean square	F	Sig.
1	Regression	32.171	1	32.171	275.126	.000 <sup>b</sup>
	Residual	27.829	238	.117		
	Total	60.000	239			
2	Regression	39.719	2	19.859	232.069	.000 <sup>c</sup>
	Residual	20.281	237	.086		
	Total	60.000	239			
3	Regression	40.527	3	13.509	163.718	.000 <sup>d</sup>
	Residual	19.473	236	.083		
	Total	60.000	239			
<b>4</b>	<b>Regression</b>	<b>40.848</b>	<b>4</b>	<b>10.212</b>	<b>125.306</b>	<b>.000<sup>e</sup></b>
	<b>Residual</b>	<b>19.152</b>	<b>235</b>	<b>.081</b>		
	<b>Total</b>	<b>60.000</b>	<b>239</b>			

Dependent Variable: Membership of PO

b. Predictors: (Constant), Ext\_cont

c. Predictors: (Constant), Ext\_cont, Land

d. Predictors: (Constant), Ext\_cont, Land, Annul\_Income

e. Predictors: (Constant), Ext\_cont, Land, Annul\_Income, Caste

**Table 3. Results of coefficients of forwarding stepwise regression for factors influencing membership of PO**

Variable	Coefficients			t	Sig. t
	Unstandardized coefficients	Standardized coefficients			
	B	Std. Error	Beta		
(Constant)	1.325	.068		19.425	.000
Ext_cont	.069	.005	.555	13.457	.000
Land	.372	.038	.397	9.730	.000
Annul_Income	-5.632E-007	.000	-.115	-3.088	.002
Caste	.075	.038	.074	1.986	.048

a. Dependent variable: PO membership

The coefficients of variables were presented in above Table 3. From the table, it is found that extension contact, operational land holding and caste (general) had positive and significant correlations with a membership of POs. However annual income had a negative and significant relationship with a membership of PO. The findings indicate that government extension contact, operational land holding, annual income and caste influence the membership of POs by 68.10 per cent.

#### 4. CONCLUSION

It was found from forwarding regression analysis that certain variables such as the extent of extension contact; land holding, the primary source of income, and caste influence the membership of PO. The extension machinery should give emphasize on these factors and manipulate these factors to enrolling more farmers in PO. Increasing membership to Producer organization requires government and its development partners to target more resources towards those who live far from extension workers. Regarding land holding, the primary source of income and caste, there is a need for proper policy planning and ensure concerted efforts by all institutions supporting groups to ensure that existing groups have improved access to agricultural technologies and noticeable outcomes are achieved so as to attract more farmers.

#### 5. RECOMMENDATION

Therefore recommended that:

1. Though the main duty of field extension personnel is to meet POs instate of individual farmers. But for improvement the PO activities it is equally important for the

field level extension personal to make frequent contact with farmers at the individual level, for that purpose policy may be improved.

2. The special drive should be organized by dept of agriculture with the help of KVKs, NGOs, and another allied dept. to attract more farmers towards POs.
3. Provide training through field level extension functionaries on different expect of group management.
4. It is also necessary for the implementing agencies to encourage farmers from all part of the society, irrespective of operational land holding, annual income, and caste.

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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