

CASE STUDY

Impact of Tamil Nadu Irrigated Agriculture Modernization Project Melur Farmer Producer Organization Company Ltd.,- A Socio-economic Analysis

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Received: 19-12-2023

Revised: 30-02-2024

Accepted: 09-03-2024

ABSTRACT

The Indian government has declared 2014 to be the “Year of Farmer Producer Organizations (FPO).” Thousands of Farmer Producer Organizations (FPOs) had registered around the country under the various legislation, like cooperative laws, trusts, federations and more recently, the Corporations Act as producer companies. Even though, there is a lack in technical aspects of FPO. So this study was focussed on FPO and conducted in the TNIAMP (Tamil Nadu Irrigated Agriculture Modernization Project) Melur Farmer Producer Organization Company Ltd., to assess the factors which influencing the status of the FPO member. This study was conducted among 30 FPO members and 30 non-members of FPO selected based on the purposive cum random sampling tool using well-designed interview schedule. The results of the study revealed that, the 43.33 per cent members of FPO getting higher profit (> 6,00,000 ₹) than non-members. Hence, government should create the awareness regarding the various activities involved in the FPO, should maintain proper infrastructure development for FPOs, proper computer literacy guidelines for FPOs, proper guidelines to raising the technical skills of FPO members and cold storage facilities for all FPOs dealing with the perishable commodities among others.

HIGHLIGHTS

- Members of FPO are better of in terms of socioeconomic indicators than the non-members.
- Education, Number of dependents, Credit availed, On-farm income, Extension agency contact and membership in other organizations or associations or groups were shown to have a significant impact on farmer membership in FPOs.

Keywords: FPO, Logit model, TNIAMP

Farmers Producer Organizations (FPOs) are groups of rural farmers who band together to form organizations in order to achieve benefit and maintaining relationship with partners in their economic and institutional environment. Farmers Organizations (FOs) are critical entities for farmer and rural poor empowerment, poverty alleviation and advancement (FAO, 2006). Farmer producer organizations became a legal entity in India in 2003, after the Indian Companies Act (1956) was amended to include Section 9A. Farmers’ producer

companies can be thought of as a cross amidst private businesses and cooperatives. The concept of FPO’s aims to combine a company’s competence with traditional cooperatives’ “soul” (Trebbin & Hassler, 2012). The concept of “cooperative” is one of the possibilities open to producers who

How to cite this article: Muthulakshmi, K., Ponnarasi, T. and Gangadharan, S. (2024). Impact of Tamil Nadu Irrigated Agriculture Modernization Project Melur Farmer Producer Organization Company Ltd.,- A Socio-economic Analysis. *Econ. Aff.*, 69(01): 751-754.

Source of Support: None; **Conflict of Interest:** None



want to organize themselves in order to progress up the supply chain by adding value and owning a business. According to FICCI (2020), FPOs are crucial to accomplishing a number of sustainable development goals as well as strengthening the socioeconomic status of the farmers. However, the country's cooperative structure has been afflicted by a number of flaws (Sontakki, 2012). The small and marginal farmers are the major shareholders of the FPO. The low level of education has a limited understanding of the importance of high-quality seeds and other agricultural inputs (Chauhan, 2015). After investing heavily in capital infrastructure to create the supply chain, agribusinesses need stable, continuous, and enough deliveries of produce on a regular basis. As a result, agribusiness firms are increasingly seeking direct relationships with farmers in order to obtain the agricultural products they demand (Murray, 2009). FPO'S place a major role to ensure the timely availability of agricultural inputs as well as market linkages, training and networking, financial and technical guidance. To disseminate the FPO concept, the government and non-government agencies work under a common platform. Though the plan had numerous benefits in terms of transforming progressive farmers' economies, it had not met with the desired results (Jaisankar, 2014). While some FPOs are succeeding, many FPOs are failed to perform their operations after few years of their initial establishment (Barman, 2019). In order to assist policymakers and extension personnel in enlisting farmers in FPOs, this study seek to determine the characteristics that affect farmer membership.

MATERIALS AND METHODS

The present study was conducted in the Madurai district involving TNIAMP Melur Farmer Producer Organization Company Ltd. The selected FPO for the study is in growing stage and it promoted by various agencies *viz.*, SFAC, NABARD, TNIAMP and Government of Tamil Nadu. From among the FPO, 30 members and 30 non-member farmers with the similar socioeconomic background, who are not members were chosen as respondent for the study. A pre-planned interview schedule was used for gathering data. Limited Dependent Variable Model was used to identify the underlying factors of membership status in the FPO (Maddala, 1983). If

the farmer is a member of the FPO, the dependent variable is assumed to be 1, and if he is not, it is considered to be 0. The logistic regression were analysed by using the Statistical Package for Social Sciences (SPSS) 21.0 software. Farmers' membership in FPOs was the dependent variable, while age, gender, farm size, education, number of dependents, credit taken out, savings, on-farm income, nonfarm income, extension agency contact, and membership in other organizations, associations, or groups were the independent factors. The dichotomous dependent variable ($Y = 1$, if yes, and 0 otherwise) is explained using the logit model. The likelihood of the event occurring is estimated using the standardized normal cumulative distribution function, or $P(Y=1/X)$.

The Logistic Regression (LR) model was constructed as:

$$\text{Logit}(p_i) = \ln \left(\frac{p_i}{1-p_i} \right) = \beta_0 + \beta_1 x_{1,i} + \dots + \beta_k x_{k,i}$$

Where,

P_i = The probability of a farmer being a member of the FPO

$(1-P_i)$ = The probability of a farmer not being a member of the FPO

" β_0 " = intercept form

$\beta_1, \beta_2, \dots, \beta_n$ are the coefficients of the independent variables

X_1, X_2, \dots, X_n are the independent variables

RESULTS AND DISCUSSION

The basic features of the sample members must be examined in any kind of social science research in order to comprehend their socioeconomic and demographic patterns, as these aspects have a significant impact on the sample members' behavior when it comes to making FPO decisions. Hence, before directive to objective-wise analysis, the general characteristics of sample members and non-members of FPO like age of the sample respondents, educational status, income were analyzed and the results are presented in Table 1. The analysis on age group of sample respondents showed that 40.00 and 23.33 per cent of the sample respondents

belongs to the below 50 years both in FPO members and non-members. It showed that FPO sample members are more likely than non-members to engage in post-harvest activities and are capable of making decisions to reduce risk. It is expected that the farmer's educational background will have a significant influence on whether new technology is adopted, should it be necessary. Likewise, 46.66 and 33.33 per cent and 36.66 and 10.00 per cent of the sample farmers respectively in both categories had education up to higher secondary and collegiate level. It was noticed that, most of the sample respondents under FPO member categories had higher level of education, which helps them to select FPO activities towards its adoption. On an average, 43.33 per cent of the FPO members belongs to the above ₹ 6,00,000 annual income category which indicated that FPO members had high income than non-members.

Table 1: General characteristics of sample members and non-members of FPO

Sl. Categories No.	Members	Non-members
I. Age of the sample members		
(a) Below 50	12 (40.00)	07 (23.33)
(b) 50-60	10 (33.33)	17 (56.66)
(c) Above 60	08 (26.66)	06 (20.00)
Total	30 (100.00)	30 (100.00)
II. Educational status of sample members		
(a) Upto secondary level	05 (16.66)	17 (56.66)
(b) Higher secondary level	14 (46.66)	10 (33.33)
(c) Collegiate level	11 (36.66)	03 (10.00)
Total	30 (100.00)	30 (100.00)
III. Annual Income of the sample members		
(a) < 300000	07 (23.33)	11 (36.66)
(b) 300000 - 600000	10 (33.33)	14 (46.66)
(c) > 600000	13 (43.33)	05 (16.66)
Total	30 (100.00)	30 (100.00)

Source: Field survey, 2021.

(Figures on the parentheses indicates the percentage of the total).

The parameter estimates for the logistic regression model are shown in Table 2. Only six variables (education, number of dependents, credit availed, on-farm income, extension agency contact, and membership in other organizations or associations or groups) were shown to have a significant impact on farmer membership in FPOs out of the 11 variables examined. The total model is fitted, and the independent variables included are collectively

competent to explain the farmer's membership in the FPOs, as demonstrated by the negative 2 log likelihood of 31.178 and the Pseudo R² of 0.769. At a 5% level, the education coefficient was positive and significant. The odds ratio was calculated to be 1.734, implying that each additional year of formal education raises the likelihood of membership by 1.734 times. This could be because farmers with more education are better able to see the benefits of FPOs and respond fast by joining them. The number of dependents per family coefficient was negative and significant at the 5% level. An increase in one unit of dependents per household reduces the likelihood of membership by 0.067 times, according to the odds ratio of 0.067. The explanation for this could be that the greater the number of dependents, the lower the farmer's net income. Farmers are less likely to join FPOs because the majority of their profits are spent to support their family's consumption needs. The negative and statistically significant (1 percent level) correlation of credit availed per home implies that as credit availed per year increases, the likelihood of membership in the FPOs decreases. Because the majority of farmers are in debt, they are less likely to invest in these FPOs. At the 5% level, the coefficient of on-farm income per household was positive and significant. This demonstrates that as on-farm revenue rises, so does the level of farmer membership. This could be explained by the fact that increasing on-farm revenue improves the farmers' economic situation, allowing them to meet their financial commitments for FPO membership. At the 1% level, the coefficient of extension agency contact was shown to be positive and significant. Furthermore, the odds ratio was determined to be 12.209, indicating that adding one extension contact every year improves the likelihood of farmers joining by 12.209 times. As a result, extension agency contact was discovered to be a primary factor of farmer membership in FPOs. This could be because farmers who have greater extension agency contact are more likely to attend more trainings and exposure visits, gaining a better understanding of the benefits of collective action through FPOs. The farmer is a member (1) in any other organization, association, or group, otherwise (0), indicating that the chance of participation in FPOs grows as the number of farmers in other organizations, associations, or groups increases. The explanation for this could be that membership

Table 2: Parameter estimates of the logistic regression

Sl. No.	Variable	Coefficient	Standard error	P-value	Odds ratio
1	Age (years)	0.039 ^{NS}	0.124	0.726	1.041
2	Gender	-1.263 ^{NS}	1.499	0.398	0.279
3	Farm size (acres)	0.291 ^{NS}	0.383	0.444	1.338
4	Education (no. of schooling years)	0.549 ^{**}	0.264	0.037	1.732
5	No of dependents per family	-2.71	1.060	0.010	0.067
6	Credit availed/household (₹/year)	-0.000047 ^{***}	0.000015	0.003	1.000
7	Savings/household (₹/year)	0.000011 ^{NS}	0.0000084	0.172	1.000
8	Farm income/household (₹/year)	0.0000049 ^{**}	0.0000022	0.032	1.000
9	Non - farm income (₹/year)	0.0000069 ^{NS}	0.0000051	0.175	1.000
10	Extension agency contact	2.500 ^{***}	0.652	0.000	12.209
11	Membership in any other group	3.568 ^{***}	1.249	0.001	35.701
12	Constant	-14.652 ^{NS}	9.045	0.103	0.000
Number of observations		60			
-2 Log-likelihood		31.178			
Pseudo R ²		0.769			

Source: Field survey, 2021.

***significant at 1% level, **significant at 5% level, NS Non-significant.

in associations or farmer group exposes farmers to a variety of information sources and helps them to evaluate both the dangers and comparative advantages of collective action, prompting them to join farmer producer organizations.

CONCLUSION

Farmers' Producer organizations are an effective instrument for improving the socioeconomic well-being of small-scale farmers. A considerable portion of the population, particularly small-scale farmers in rural areas, is impoverished through joining to FPO. Farmers will gain from joining to FPOs since they will bring them closer to the market, allowing them to take advantage of comparative advantages and possibly even connecting them to the international market. Farmers' Producer Organizations could be a useful way for donors to contact small-scale farmers, who are otherwise difficult to reach and target because they typically live in sparsely populated rural areas with poor infrastructure. It was observed that members of the organizations had much higher income, savings and employment than non-members. Institutional support for members of the FPO is required to enhance farmer interest. For enhanced market access, a mobile app and storage facilities that serves as a platform for buyers and sellers might be developed.

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