

Boosting Cooperative Success: Evaluating the Performance of Farmer Producer Organizations in Tiruvallur District, Tamil Nadu, India

ABSTRACT

Aim: This study examines the performance of Farmer Producer Organizations (FPOs) in Tiruvallur district, Tamil Nadu, with a focus on identifying the key factors influencing their effectiveness.

Methodology: Using an ex post facto research design in 2024, four FPOs operational for over three years were purposively selected, and a sample size of 120 members was chosen through simple random sampling. Data collection involved a comprehensive interview schedule assessing 14 personal, psychological, and socio-economic variables. Correlation and regression analyses were conducted using SPSS software.

Results: In the study examining the performance of FPOs in Tiruvallur district, Tamil Nadu, 14 personal, psychological, and socio-economic variables were analyzed for their influence on FPO performance. Eight variables showed a significant positive correlation with FPO performance such as education, farming experience, annual income, innovativeness, information source utilization, group cohesiveness, decision-making behavior, and attitude towards FPOs having the highest correlation. Conversely, two variables exhibited a negative correlation, with occupation showing a significant negative correlation. Four variables showed a positively correlated but not significant such as age, economic motivation, social participation and capacity building services, while farm size was also negatively correlated but not significantly. The model's R^2 value was 61.9%, indicating that these 14 variables collectively explain a substantial portion of the variation in FPO performance. This highlights the critical role of fostering positive attitudes, effective decision-making and other positively correlated factors to enhance FPOs performance.

Conclusion: The study underscores the importance of fostering positive attitudes and effective decision-making within FPOs to enhance their performance. These findings highlight the need for targeted interventions to improve these aspects within FPOs to ensure their success and sustainability.

Keywords: Farmer Producer Organization, Performance of FPO, Socio economic characteristics, Members and Relationship

1. INTRODUCTION

Agriculture is essential to India's economy and providing jobs for 60% of the workforce and having a direct impact on economic development (Gomase& Tekale, 2022). Farmer Producer Organizations (FPOs) are currently crucial for improving agricultural marketing and output, particularly for smallholder farmers who confront various obstacles such as high transaction costs and restricted

market access. The study highlights that 82% of farmers are small and marginal farmers, highlighting the sector's reliance on grassroots activities (Divya et al. 2023). Cooperatives and farmer producer organisations are examples of farmer collectives that have emerged as alternatives for using collective action to lower transaction costs and increase market participation (Markelova et al., 2009; Valentinov 2007). They have little negotiating power in the input and product markets due to their tiny operation and low marketable surplus. They are forced to sell their perishable food at a cheap price due to a lack of post-harvest facilities (Negi et al., 2018). The average size has reduced to 1.16 hectares from 2.28 hectares. The percentage of land owned by small and marginal farmers increased from 19 to 44% in 2010–11. Small holdings are the defining characteristics of Indian agriculture today more than in the past. However, if the (National Crime Records Bureau 2011) data on agricultural suicides among small and marginal farmers is any guide, it is clear that these farmers are having difficulty making ends meet. FPO may be able to assist small farmers in overcoming some of the more established obstacles they face, such as declining productivity, inadequate produce, low levels of competitiveness, difficult market access, etc. Naturally, aggregation is a challenging concept in India, both in terms of bringing a large number of dispersed farmers together on a single platform and in terms of enhancing their ability to benefit from the new organizational structure. Consequently, it is essential to research how a member's profile will affect their performance and socioeconomic benefits after joining the FPO.

2. METHODOLOGY

The study utilized an ex post facto research design to evaluate the performance of Farmer Producer Organizations (FPOs) in Tiruvallur district at 2024. Four FPOs, each operational for over three years, were purposively selected: Ikkadu Farmer Producer Company, Poondi Farmer Producer Company Ltd, TNIAMP Gummidipoondi Farmer Producer Company, and TNIAMP Gummidipoondi Organic Farmer Producer Company, located in the Gummidipoondi and Tiruvallur blocks. From each FPO, 30 members, including the Board of Directors and the Chief Executive Officer (CEO), were chosen through simple random sampling, resulting in a total sample size of 120 members. Data were collected using a comprehensive interview schedule that assessed 14 personal, psychological, and socio-economic variables identified through literature review and expert consultation. Statistical tools such as the coefficient of correlation and regression analysis were employed to analyse and interpret the data using SPSS software.

3. RESULTS AND DISCUSSION

Correlation analysis between the members' perceptions of the FPO's performance and their profile

FPO Performance Vs Age

From the Table 1 clearly depicted that correlation coefficient suggests a moderate positive relationship between age and the performance of FPOs. However, since it is not statistically significant (NS) ($r=0.42$), we cannot conclusively say that age impacts FPO performance. This indicates that while older individuals may have more experience or wisdom, this does not necessarily translate into better performance for FPOs. **This result was consistent with the findings of Siddeswari (2018) and Fayaz (2015).**

FPO Performance Vs Education

There is a significant positive correlation value ($r=.306^{**}$) between education and FPO performance clearly depicts in the table 1. This suggests that as the level of education increases, the performance of FPOs also tends to improve. Educated members may have better skills, knowledge, and understanding of market dynamics, which can enhance the effectiveness of the organization. **Venkattakumar et al., (2019) findings, supported a similar conclusion.**

Table 1. Correlation analysis of profile of FPO members and FPO Performance

S. No	Independent variable	Correlation coefficient 'r' value
X ₁	Age	0.42NS
X ₂	Education	.306**
X ₃	Occupation	-.274**
X ₄	Farm size	-.026
X ₅	Farming Experience	.549**
X ₆	Annual income	.552**
X ₇	Innovativeness	.382**
X ₈	Information source utilization	.568**
X ₉	Group cohesiveness	.376**
X ₁₀	Economic motivation	.052 NS
X ₁₁	Social participation	.118 NS
X ₁₂	Capacity Building Services	.073 NS
X ₁₃	Decision Making Behaviour	.610**
X ₁₄	Attitude towards FPO	.677**

** Significant at 0.01 level; NS: Non-significant

FPO Performance Vs Occupation

The findings from the table 1 depicted that negative correlation value ($r = -0.274^{**}$) indicates that as the complexity or type of occupation increases, the performance of FPOs tends to decrease. This could imply that members with more demanding or less agriculture-focused occupations may have less time or motivation to engage actively in FPO activities, negatively affecting overall performance. This finding is in agreement with Priyankan and Jayasankar (2024) because they stated that occupation is significant positive correlation.

FPO Performance Vs Farm Size

It is evident from the table 1 stated that the correlation ($r = -0.026$, NS) value between farm size and FPO performance is negligible and not statistically significant. This suggests that the size of the farm does not have a meaningful impact on the performance of FPOs. Members with small or large farms may perform equally well within the FPO context. Similar finding was endorsed by the results of Gorai S.K et al., (2023).

FPO Performance Vs Farming Experience

There is a significant positive correlation ($r = 0.549^{**}$) between farming experience and FPO performance. This indicates that individuals with more experience in farming are likely to contribute more effectively to FPOs, possibly due to their practical knowledge and established networks within the agricultural community. This finding is in agreement with Mahesh Babu et al., (2021) because they stated that farming experience is positively correlated but not significant.

FPO Performance Vs Annual Income

The significant positive correlation ($r = 0.552^{**}$) suggests that as annual income increases, the performance of FPOs also improves. Higher income may provide members with more resources to invest in FPO activities and initiatives, leading to better outcomes. The finding was in tune with the results of Babu.TMet al.,(2021) , Ahire et al., (2015) and Darshan (2019).

FPO Performance Vs Innovativeness

A significant positive correlation ($r = 0.382^{**}$) exists between innovativeness and FPO performance. This indicates that members who are more innovative are likely to enhance the

performance of FPOs, possibly through the adoption of new technologies, practices, or marketing strategies. **Similar finding was endorsed by the results of Babu.TM et al., (2021).**

FPO Performance Vs Information Source Utilization

This strong positive correlation ($r = 0.568^{**}$) suggests that effective utilization of information sources significantly enhances FPO performance. Members who actively seek and use information are likely to make better decisions, leading to improved outcomes for the organization. **These findings are in conformity with the findings of Deshmukh Sk et al., (2019)**

FPO Performance Vs Group Cohesiveness

There is a significant positive correlation ($r = 0.376^{**}$) between group cohesiveness and FPO performance. This implies that a strong sense of unity and collaboration among members can lead to better performance, as cohesive groups are often more effective in achieving common goals. **These findings are in conformity with the findings of Elizabeth AJ (2020)**

FPO Performance Vs Economic Motivation

The correlation ($r = 0.052NS$) is negligible and not statistically significant, suggesting that economic motivation does not significantly impact FPO performance. This could indicate that other factors may be more influential in driving performance than mere financial incentives. **This finding is in agreement with Mahesh Babu et al., (2021) because they stated that economic motivation is significant positive correlation.**

FPO Performance Vs Social Participation

The correlation value ($r = 0.118NS$) is weak and not significant, indicating that social participation does not have a strong effect on FPO performance. While social engagement is important, it may not directly translate into improved performance metrics. **This finding is in agreement with Mahesh Babu et al., (2021) because they stated that social participation is significant positively correlated.**

FPO Performance Vs Capacity Building Services

The negligible and non-significant correlation value ($r = 0.073NS$) suggests that capacity-building services may not have a direct impact on FPO performance. This could imply that the effectiveness of such services needs to be evaluated further to understand their role.

FPO Performance Vs Decision Making Behaviour

A strong positive correlation value ($r = 0.610^{**}$) indicates that effective decision-making behaviour is crucial for FPO performance. Members who are skilled in decision-making are likely to contribute significantly to the success of the organization. **Similar findings was endorsed by Priyankan and Jayasankar (2024).**

FPO Performance Vs Attitude towards FPO

This is the strongest positive correlation value ($r = 0.677^{**}$) observed, suggesting that a positive attitude towards FPOs is highly influential in determining their performance. Members who believe in the value and potential of FPOs are more likely to engage actively and contribute to their success. **Similar findings were reported by Deshmukh Sk et al., (2019)**

Table 2. Analysis of multiple linear regression comparing the FPO members profiles to the FPO's performance

Characteristics	Unstandardized Coefficients		Standardized Coefficients Beta	t-value
	B	Std.Error		

(n=120)

Age	.305	.322	.062	.948
Education	.053	.382	.011	.140
Occupation	-.263	.391	-.048	-.673
Farm size	-.116	.432	-.018	-.269
Farming Experience	1.010	.785	.151	1.286
Annual income	.001	.989	.000	.001
Innovativeness	.120	.434	.025	.276
Information source utilization	.134	.923	.017	.145
Group cohesiveness	-.686	.784	-.097	-.876
Economic motivation	-.121	.084	-.109	-1.448
Social participation	.072	.125	.060	.576
Capacity Building Services	-.203	.107	-.185	-1.890
Decision Making Behaviour	2.096	.960	.312	2.184
Attitude towards FPO	.561	.086	.524	6.520

The table 2 shows that the R^2 value of 0.619 indicates that the 14 independent variables selected collectively explained approximately 61.9% of the variation in the FPO performance. The results of a regression analysis examining various characteristics and their influence on a dependent variable. Among the characteristics, attitude towards FPO stands out with a highly significant positive unstandardized coefficient of 0.561 and t-value of 6.520, indicating a strong relationship with the outcome variable. Decision making behaviour also shows significance with a coefficient of 2.096 and t-value of 2.184, suggesting it positively influences the dependent variable. Conversely, capacity-building services has a negative coefficient of -0.203 and a t-value of -1.890, hinting at a detrimental effect. Other variables, such as farming experience and age, while having positive coefficients, do not reach statistical significance. Overall, the results highlight the importance of attitudes and decision-making in the context studied, while other factors appear less influential or statistically relevant.

4. CONCLUSION

The study identifies the key elements affecting FPO performance in the Tiruvallur district. Although there is a positive correlation between FPO performance and variables like education, farming experience, and annual income, members' attitudes toward FPOs and their decision-making behaviour are the strongest predictors. These results imply that programs targeted at raising members' opinions of FPOs and strengthening their capacity for making decisions can greatly increase FPO effectiveness. On the other hand, small or insignificant effects were found for variables like farm size and economic motivation. According to the findings, focused training and capacity-building initiatives are needed to help FPO members develop strategic thinking skills and positive attitudes, which will support the organizations long-term growth and success.

Disclaimer (Artificial intelligence)

I (C.Sinega) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts.

REFERENCES

- Adapa SP, Naik A, Kumar A, Biswas T. Comparative Analysis of the Impact of FPO on Paddy Farmers through Canonical Correlation Analysis. *Indian Journal of Extension Education*. 2024 Jul 4;60(3):49-53.
- Ahire, R.D., Kapse, P.S and Deshmukh, P.R. Socioeconomic impact of Commodity Interest Group among Pomegranate Growers. *International Journal of Extension Education*. 2015. 11: 40-45.
- Asha Elizabeth J. *Entrepreneurial behaviour of farmer producer organization (FPO) members for livelihood security* (Doctoral dissertation, Department Of Agricultural Extension, College Of Agriculture, Vellayani).2020.
- BABU TM, LAKSHMI T, PRASAD S, SUMATHI V, MURTHY BR. RELATIONSHIP BETWEEN PROFILE OF FPO MEMBERS WITH PERFORMANCE OF FPO, Andhra Pradesh *J Agril. Sci*,2021: 7(2): 99-105.
- Chandrakar K, Chandrakar DK, Das D. Farmers Producer Organization (FPO): How it is changing farming scenario. *International Journal of Science and Research Archive*. 2023;8(1):761-5.
- Darshan, P. A Study on functioning and impact of Farmer Producer Organisations in Karnataka. Ph.D. Thesis. Professor Jayashankar Telangana State Agricultural University, Hyderabad. 2019.
- Deshmukh SK, Sk MS. Association between Selected Attributes of FPO members and their entrepreneurial behaviour. *Indian Research Journal of Extension Education*. 2019 Jul 15;19(2):60-2.
- Divya G, Balasubramaniam P, Devi MN, Mohanraj V. Issues and Challenges Faced by Small and Marginal Farmers during COVID-19 Pandemic. *Asian J. Agric. Ext. Econ. Soc*. 2023;41(9):78-84.
- Fayaz S. *Entrepreneurial behaviour of cotton farmers in Kurnool district of Andhra Pradesh*. M. Sc.(Ag.) Thesis. Acharya NG Ranga Agricultural University, Hyderabad, India. 2015..
- Gomase AS, Tekale VS. Prescriptive Model of Twenty-One-Point Programme on Retention of Rural Youth in Agriculture. *A Monthly Peer Reviewed Magazine for Agriculture and Allied Sciences*. 2022 Nov:13.
- Gorai SK, Wason M, Padaria RN, Rao DU, Paul S, Paul RK. Leveraging group dynamics for enhancing the performance of farmer producer organizations in West Bengal. *Indian Res. J. Ext. Edu*. 2023 Aug 5;23(3):1-7.
- Marbaniang EK, Chauhan JK, Kharumnuid P. Farmer Producer Organization (FPO): the need of the hour. *AGRICULTURE & FOOD: e-Newsletter* (www. agrifoodmagazine. co. in) e-ISSN. 2019:2581-8317
- Markelova H, Meinzen-Dick R, Hellin J, Dohrn S. Collective action for smallholder market access. *Food policy*. 2009 Feb 1;34(1):1-7.
- Negi DS, Birthal PS, Roy D, Khan MT. Farmers' choice of market channels and producer prices in India: Role of transportation and communication networks. *Food Policy*. 2018 Dec 1;81:106-21.
- Priyanka R, Jayasankar R. Relationship between Personal, Socioeconomic and Psychological Characteristics of FPO Beneficiaries with their Attitude towards FPO in Tamil Nadu, India. *Current Journal of Applied Science and Technology*. 2024 Jun 20;43(7):69-79.
- Siddeswari GK. *A STUDY ON WOMEN ENTREPRENEURSHIP THROUGH SELF HELP GROUPS IN ANDHRA PRADESH* (Doctoral dissertation, Acharya NG Ranga Agricultural University).2018,
- Valentinov V. Why are cooperatives important in agriculture? An organizational economics perspective. *Journal of institutional Economics*. 2007 Apr;3(1):55-69.
- Venkattakumar R, Mysore S, Venugopalam R, Narayanaswamy B, Balakrishna B, Atheequlla G, Paripurna A, Reddy TM. Performance of farmers producers organizations (FPOs) and associated

factors in Karnataka: producers' perspectives. Indian Research Journal of Extension Education. 2019
Aug 14;19(2&3):7-12.

UNDER PEER REVIEW