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Exploring socio-economic determinants and member farmers attitudes towards farmer producer companies in Banaskantha, Gujarat

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Abstract

This study explores the socio-economic determinants and attitudes of member farmers towards Farmer Producer Companies (FPCs) in Banaskantha, Gujarat. The primary objectives were to assess the socio-economic profiles of member farmers, evaluate their attitudes towards FPCs, and examine the association between these profiles and their attitudes. A purposive sampling method was employed to select 180 member farmers from three FPCs (FPC-1, FPC-2, and FPC-3), with 60 respondents from each organization. Data were gathered through structured interviews and secondary sources, and analyzed using statistical tools such as frequency, percentage, mean scores, standard deviation, Likert scale interpretation, and Chi-square tests. The findings revealed that most members were middle-aged males, with a high proportion being marginal farmers and possessing primary-level education or lower. Joint family structures and integrated occupations, such as agriculture with animal husbandry, were predominant. The majority of farmers joined FPCs due to peer influence and reported a membership duration of 2-3 years. While overall attitudes towards FPCs were favorable, key concerns were raised regarding governance transparency and limited technological support. The study found significant associations between farmers' attitudes and variables such as education level, monthly income, family type, motivation for joining, and duration of membership, suggesting that these socio-economic factors play a critical role in shaping engagement and perceptions. The study concludes that while FPCs are perceived as sustainable and beneficial models for small and marginal farmers, targeted interventions in education, governance, and member engagement are necessary to strengthen farmer confidence and maximize organizational impact.

Keywords: Farmer producer companies (FPCs), socio-economic profile, attitude, association

Introduction

In recent years, Farmer Producer Companies (FPCs) have gained prominence as a collective institutional model aimed at improving the livelihoods of small and marginal farmers in India. These farmer-owned entities are designed to function as hybrid institutions, combining the benefits of cooperatives and private enterprises to enhance farmers' access to markets, inputs, infrastructure, and value addition opportunities (Bairwa *et al.*, 2014; Meena *et al.*, 2021) ^[1, 5]. Particularly in agriculturally dominant regions such as Banaskantha district in Gujarat, where rural households often struggle with fragmented landholdings, low bargaining power, and irregular income flows, FPCs represent a promising intervention for inclusive rural development.

The socio-economic characteristics of member farmers play a significant role in determining their level of participation and engagement with FPCs. Attributes such as education, income, landholding size, household type, and social networks influence not only the decision to join but also the perception of benefits and trust in the organization's governance and services (Saxena & Tyagi, 2017; Singh & Meena, 2019) ^[6, 8]. Educated farmers are more likely to understand the technical, financial, and managerial aspects of FPCs, while joint family structures may offer better labor availability and risk-sharing, enhancing participation (Jaiswal *et al.*, 2019; Sharma & Singh, 2020) ^[4, 7]. Similarly, farmers with higher income levels and diversified livelihoods-such as those involved in animal husbandry or agri-business-tend to

demonstrate a more favorable attitude towards FPCs due to their greater exposure to market dynamics and entrepreneurial orientation (Chand *et al.*, 2017; Birthal *et al.*, 2015) ^[3, 2].

Despite the increasing popularity of FPCs across the country, several challenges persist. Issues related to transparency in financial transactions, equitable participation in decision-making, outdated technical support, and limited government convergence continue to affect member satisfaction and trust (Saxena & Tyagi, 2017; Singh, Meena, & Kant, 2021) ^[6, 5]. Moreover, motivation to join FPCs is often driven by peer influence and social networks rather than institutional promotion, underlining the importance of informal channels in shaping farmer behavior (Sharma & Singh, 2020) ^[7].

Given this context, the present study seeks to explore the socio-economic determinants that shape farmers' attitudes towards FPCs in the Banaskantha district of Gujarat. By examining variables such as education, income, family structure, and duration of membership, this research aims to provide empirical insights that can guide policymakers, development practitioners, and FPC promoters in designing more responsive and inclusive interventions that strengthen farmer collectives and ensure long-term sustainability. The objectives of the study are as follows.

- To study the socio-economic profile of member farmers
- To study the attitude of member farmers towards FPC
- To find out the association of famers profile and their attitude towards FPC

Research Methodology

This study targeted member farmers from three selected Farmer Producer Companies (FPCs) designated as FPC-1, FPC-2 and FPC-3 in the Banaskantha district of Gujarat, employing a purposive (non-probability) sampling method to select a total of 180 participants i.e. 60 from each FPC. The purposive sampling approach ensured the inclusion of relevant and knowledgeable respondents. Data were collected from both primary and secondary sources. Primary data were obtained through a structured interview schedule conducted directly with member farmers to gather firsthand insights. Secondary data were sourced from reports, journals, research papers, government documents, and company websites to provide contextual background and support. The data were analyzed using various statistical tools: frequency and percentage analyses were used to present the distribution of responses; mean scores were calculated to understand average perceptions; and the Likert scale was applied to quantify farmers' attitudes and opinions on a scale ranging from "Strongly Disagree" to "Strongly Agree." Standard deviation (S.D.) was computed to assess data variability. Finally, the Chi-Square test was applied to examine significant associations between categorical variables, particularly the relationship between farmers' socio-economic profiles and their attitudes toward FPCs.

Results and Discussion

Table 1: Socio-economic and personal characteristics of the member farmers of FPCs

Gender of Respondents		
Gender	Frequency	Percentage
Male	135	75.00
Female	45	25.00
Total	180	100
Age of Respondents (years)		
Age Group (in Years)	Frequency	Percentage
Below 30	15	8.33
31-40	53	29.44
41-50	69	38.33
51-60	36	20.00
Above 60	7	3.89
Total	180	100
Education of Respondents		
Education Level	Frequency	Percentage
Illiterate	47	26.11
Primary	53	29.44
SSC	31	17.22
HSC	25	13.89
Graduation	24	13.33
Total	180	100
Landholding Size		
Land Holding	Frequency	Percentage
Marginal (<1 ha)	103	57.22
Small (1-2 ha)	62	34.44
Large (>2 ha)	15	8.33
Total	180	100
Household size		
Household size	Frequency	Percentage
Small (< 4)	31	17.00
Medium (5-6)	90	50.00
Large (> 6)	59	33.00
Total	180	100
Monthly Income		
Monthly Income	Frequency	Percentage
20,000-50,000	54	30.00
50,000-1,00,000	68	37.78
1,00,000-2,00,000	44	24.44

More than 2,00,000	14	7.78
Total	180	100
Occupation		
Occupation	Frequency	Percentage (%)
Agri+Service	41	22.78
Agri+Business	12	6.67
Agri+Retired	11	6.11
Agri+Animal husbandry	72	40.00
Other	44	24.44
Total	180	100
Family Type		
Types of Family	Frequency	Percentage
Joint	104	57.78
Nuclear	76	42.22
Total	180	100
Motivation source for joining FPCs		
Motivation source	Frequency	Percentage
NGO's	29	16.11
Another member of FPCs	77	42.78
Relatives/Neighbors	74	41.11
Total	180	100
Duration of FPC Membership (Year)		
FPC Membership	Frequency	Percentage (%)
< 1 Year	35	19.44
1-2 year	48	26.67
2-3 year	97	53.89
> 3 year	0	0.00
Total	180	100

As shown in Table 1, the majority of the respondents were male (75%), which aligns with the findings of Singh *et al.* (2021) [5], who noted that male dominance in agricultural decision-making is still prevalent in many Indian states, particularly in traditional farming households. The age distribution showed that most members were in the 41-50 age group (38.33%), indicating that middle-aged farmers are more likely to participate in organized farmer groups, as also observed by Yadav and Kumar (2020) [10], who reported that this age group has both experience and willingness to adapt to institutional innovations. Educational attainment among the farmers revealed a relatively high percentage of primary-level education (29.44%) and illiteracy (26.11%), which reflects the ongoing challenge of capacity-building in rural agricultural communities. This trend is consistent with the findings of Bairwa *et al.* (2014) [1], who highlighted the need for continuous training and support for farmers with low literacy levels to improve their participation and decision-making in FPC activities. Landholding patterns indicated that a significant proportion of the members were marginal farmers (57.22%), followed by small farmers (34.44%), suggesting that FPCs are particularly relevant for resource-poor farmers seeking collective advantages. Similar results were reported by BIRTHAL *et al.* (2015) [2], who found that small and marginal farmers were more likely to join producer organizations to overcome scale disadvantages in input procurement and

market access. In terms of household size, most members belonged to medium-sized families (50%), and joint family systems were more common (57.78%). These demographic characteristics often contribute to labor availability and shared responsibilities in farming activities. According to Jaiswal *et al.* (2019) [4], joint families can be advantageous for FPC participation due to better resource pooling. Occupational patterns show a predominance of "Agri + Animal husbandry" (40%), indicating that livestock plays a complementary role in rural livelihoods. This supports the assertion by Chand *et al.* (2017) [3] that integrated farming systems are essential for income diversification among smallholders.

Interestingly, 42.78 percent of the farmers joined FPCs based on the motivation of other members, highlighting the role of peer influence and social networks in group participation. This is corroborated by the study of Sharma and Singh (2020) [7], who emphasized the importance of informal community networks in spreading awareness and enhancing membership in farmer collectives. Regarding income, a considerable portion of farmers earned between ₹50,000-1,00,000 per month (37.78%), which suggests that FPCs may be attracting relatively better-off or commercially oriented farmers as well. Lastly, more than half of the respondents (53.89%) had been members of the FPC for 2-3 years, indicating increasing interest and retention in recent years, possibly due to visible benefits.

Table 2: Statement-wise attitude of farmer producer organizations members towards the organization, (n = 180)

Attitude Statements	FPC-1		FPC-2		FPC-3	
	Attitude Score	Rank	Attitude Score	Rank	Attitude Score	Rank
Small and marginal farmers get encouragement for doing farming as a professional business.	200	III	194	V	194	II
Farmers can purchase inputs conveniently due to FPC.	183	IX	174	XI	175	IX
Board of Directors does not treat all the farmer members with equality.	203	II	199	I	193	III
Co-ordination between the farmers and Agricultural Department has increased.	187	VI	195	IV	186	IV
Scientific information provided by the FPC is not up to date.	196	IV	196	III	176	VIII

Processing and storage of agricultural produce of farmer members of FPC is done effectively.	186	VII	182	IX	179	VI
Farmers face difficulties in use of improved scientific technology.	195	V	184	VIII	184	V
Capacity of the farmers to sale agricultural produce has increased.	183	IX	186	VII	174	XI
Loan and subsidies are not provided by the Government to the FPCs in appropriate quantities.	166	XIII	168	XIII	168	XIII
Farmers receive good profits due to common sale of their agricultural produce by FPCs.	181	XI	189	VI	175	IX
Financial transactions of FPCs lack transparency.	158	XIV	153	XIV	153	XIV
Participation in farmers' producer organization saves labor, time and money of farmers.	186	VII	178	X	170	XII
Some farmers from FPC are deprived from the process of decision making.	174	XII	174	XI	178	VII
I feel FPO model is the sustainable model	208	I	198	II	198	I

The analysis of Table 2 reveals a understanding of farmers' attitudes towards Farmer Producer Companies (FPCs) based on key functional areas like governance, service delivery, technological support, and overall satisfaction. Across all three FPCs the statement "I feel FPO model is the sustainable model" received the highest rank, indicating strong farmer confidence in the long-term viability of FPCs. This aligns with the findings of Meena *et al.* (2021) [5], who noted that FPOs have increasingly gained farmers' trust as sustainable institutional models that enhance bargaining power and reduce dependency on intermediaries. Farmers also recognized the role of FPCs in encouraging small and marginal farmers to treat farming as a professional business, ranked consistently among the top three in all three FPCs. Similar observations were reported by Bairwa *et al.* (2014) [1], who emphasized that FPOs serve as platforms for marginalized farmers to transition into market-oriented agri-entrepreneurs by facilitating access to inputs, finance, and collective marketing.

However, some concerns persist. The second-ranked attitude statement in FPC-1 and FPC-2, "Board of Directors does not treat all the farmer members with equality," and the high ranks given to similar concerns about outdated scientific information and challenges in adopting technology, point to perceived governance and information asymmetries. These issues are not uncommon, as reported by Saxena and Tyagi (2017) [6], who found that many FPOs struggle with internal accountability, uneven participation, and limited extension services. Furthermore, across all three FPCs, the lowest ranks were assigned to statements like "Financial transactions of FPCs lack transparency" and "Loan and subsidies are not provided by the Government to the FPCs in appropriate quantities." These responses indicate systemic constraints, such as limited institutional financing and operational inefficiencies, also highlighted by Sharma and Singh (2020) [7], who argued that FPOs need stronger governance mechanisms and government convergence for better functioning.

Overall attitude of FPO members towards the organization

Table 3: Overall attitude of FPO members towards the organization, (n = 180)

Attitude category	FPC-1 members (n=60)		FPC-2 members (n=60)		FPC-3 members (n=60)	
	No.	%	No.	%	No.	%
Less favourable	21	35.00	17	28.33	18	30.0
Favourable	23	38.33	24	40.00	26	43.3
More favourable	16	26.67	19	31.67	16	26.7

Table 3 supports this interpretation by summarizing the overall attitude of FPC members. A significant proportion of members across all three FPCs held either favourable (38.33%-43.3%) or more favourable (26.67%-31.67%) attitudes toward their organizations. However, 28.33-35 percent still expressed less favourable attitudes, pointing to the need for structural improvements and increased inclusivity. This trend resonates with the findings of Singh and Meena (2019) [8], who emphasized that FPOs must move beyond formation and focus on capacity-building, transparent operations, and inclusive benefit-sharing to ensure long-term member satisfaction.

Association of famers profile and their attitude towards FPC

Table 4: Association between profile characteristics of FPC members and their attitude towards FPCs

Sr. No.	Profile characteristics	Chi-square value
X ₁	Age of the Respondents	3.189 ^{NS}
X ₂	Education level of the Respondents	11.020*
X ₃	Landholding of the Respondents	2.667 ^{NS}
X ₄	Household size of Respondents.	1.281 ^{NS}
X ₅	Monthly income of the Respondents	8.767*
X ₆	Occupation of the Respondents	7.192 ^{NS}
X ₇	Family type of Respondents	10.928*
X ₈	Motivation source for joining FPCs	5.681*
X ₉	Duration of FPC Membership (Year)	13.028**

NS = Non-Significant; *Significant at 5% level; **Significant at 1% level

The association between the profile characteristics of Farmer Producer Company (FPC) members and their attitudes toward FPCs, as presented in Table 4, reveals critical insights into the socio-economic factors that influence farmers' perception of and engagement with collective farming institutions. Among the nine variables analyzed, four were found to have a statistically significant association with farmer attitudes: education level, monthly income, family type, motivation source for joining, and duration of FPC membership. The education level of respondents showed a significant association ($\chi^2 = 11.020, p < 0.05$), suggesting that better-educated farmers tend to have a more positive attitude toward FPCs. This is consistent with the findings of Meena *et al.* (2021) [5], who reported that educated farmers are more likely to understand the benefits of collective action, adopt scientific practices, and actively participate in governance mechanisms within FPOs.

Monthly income was also significantly associated ($\chi^2 = 8.767, p < 0.05$), indicating that farmers with higher incomes are more favorably inclined toward FPCs. Higher-income members may have greater exposure to market dynamics and

thus recognize the value of aggregation and collective marketing, as supported by the study of Bairwa *et al.* (2014) ^[1], which highlighted income as a motivating factor for sustained engagement in producer organizations. The family type variable ($\chi^2 = 10.928, p < 0.05$) also emerged as significant, implying that joint families may be more supportive environments for FPC participation due to shared responsibilities and collective decision-making. This finding aligns with Sharma and Singh (2020) ^[7], who emphasized the role of social and familial structures in influencing farmers' group behavior and organizational trust.

Motivation source ($\chi^2 = 5.681, p < 0.05$) and duration of FPC membership ($\chi^2 = 13.028, p < 0.01$) were also statistically significant. Farmers who were encouraged to join FPCs by peers or through social networks were more likely to hold favorable attitudes, which echoes the work of Singh and Meena (2019) ^[8], who found that peer influence and prolonged engagement with FPCs improved farmers' perception of the benefits and operations of the organization. In contrast, other variables such as age, landholding size, household size, and occupation did not show significant associations, suggesting that these factors may not independently influence attitudes toward FPCs. Similar non-significant patterns were noted by Saxena and Tyagi (2017) ^[6], who suggested that operational transparency and governance often outweigh demographic characteristics in shaping farmer trust and satisfaction.

Overall, the analysis indicates that socio-economic factors particularly education, income, family support, and experiential exposure play a pivotal role in shaping farmers' attitudes toward FPCs. These findings underscore the importance of targeted training, inclusive governance, and member engagement strategies to enhance the effectiveness and trust in FPC models.

Conclusion

This study provides a comprehensive analysis of the socio-economic characteristics, attitudinal dispositions, and associative factors influencing member farmers of Farmer Producer Companies (FPCs) in Banaskantha, Gujarat. The findings highlight that a significant proportion of members are middle-aged males from marginal farming backgrounds, often residing in joint families and possessing low to moderate education levels. Despite these constraints, their participation in FPCs is largely driven by peer motivation, family support, and the perceived benefits of collective action. Attitude analysis reveals that while most members hold a favorable or more favorable view of FPCs particularly recognizing them as sustainable models for enhancing agricultural livelihoods there remain concerns related to governance equity, technological support, and financial transparency. The significant associations between education, income, family type, motivation source, and membership duration with farmers' attitudes underline the importance of experiential and socio-economic contexts in shaping perception and engagement with FPCs. To strengthen the impact of FPCs, interventions should prioritize capacity building for less educated and newly inducted members, foster inclusive governance, and enhance communication channels within organizations. Strategic focus on peer-driven mobilization, regular training, and better integration with government support systems can help in sustaining positive attitudes and expanding the reach of FPCs among marginalized farming communities.

References

1. Bairwa SL, Meena LK, Lakra K, Kumar P. Farmers producer organization: Concept, practices and future scope. *Econ Aff.* 2014;59(2):263-272.
2. Birthal PS, Roy D, Negi DS. Farmers' participation in India's milk markets: Patterns and determinants. *Food Policy.* 2015;55:131-139.
3. Chand R, Saxena R, Rana S. Small farmers in India: Challenges and opportunities. *Indian J Agric Econ.* 2017;72(1):1-27.
4. Jaiswal DK, Patel NL, Sharma BL. A study on socio-economic characteristics of members of FPOs in tribal region of Gujarat. *Indian Res J Ext Educ.* 2019;19(1):28-31.
5. Meena MS, Jain R, Singh R. Strengthening Farmer Producer Organizations (FPOs) in India: Challenges and policy issues. *Indian J Agric Econ.* 2021;76(3):309-316.
6. Saxena K, Tyagi R. Farmer Producer Companies in India: Conceptual issues and developmental interventions. *Indian J Agric Econ.* 2017;72(3):321-330.
7. Sharma R, Singh RK. Social capital and collective action: Role of Farmer Producer Organizations. *Agric Econ Res Rev.* 2020;33(Conference Number):29-36.
8. Singh P, Meena MS. Attitude of farmers towards Farmer Producer Organizations: A study in Rajasthan. *Indian Res J Ext Educ.* 2019;19(2):25-30.
9. Singh P, Meena MS, Kant R. Gender participation and decision-making in farm activities: A study from rural India. *J Rural Stud.* 2021;82:405-412.
10. Yadav SS, Kumar P. Participation of farmers in Farmer Producer Organizations (FPOs): An empirical analysis. *Indian J Ext Educ.* 2020;56(2):55-60.