International Journal of Statistics and Applied Mathematics

ISSN: 2456-1452
NAAS Rating (2025): 4.49

Maths 2025; SP-10(8): 25-31
www.mathsjournal.com
Received: 22-06-2025
Accepted: 25-07-2025

Patel Anjaliben Ashvinbhai
MBA (ABM) Scholar, ASPEE Agribusiness Management Institute, Navsari Agricultural University, Gujarat, India

Swati Sharma
Associate Professor, ASPEE Agribusiness Management Institute, Navsari Agricultural University, Gujarat, India

Mehul G Thakkar
Professor, ASPEE Agribusiness Management Institute, Navsari Agricultural University, Gujarat, India

Corresponding Author:
Swati Sharma
Associate Professor, ASPEE Agribusiness Management Institute, Navsari Agricultural University, Gujarat, India

Exploring the socio-economic profile, attitude, and constraints of farmer producing company (FPC) member farmers in Navsari district, Gujarat

Patel Anjaliben Ashvinbhai, Swati Sharma and Mehul G Thakkar

Abstract
The present study was conducted in Khergam Taluka of Navsari district to examine the socio-economic characteristics, motivations, attitudes, and constraints of Farmer Producer Company (FPC) member farmers. A total of 150 respondents were surveyed using a structured questionnaire. The findings reveal that the majority of members were male, middle-aged, and had low levels of formal education, with most being small and marginal landholders engaged in both agriculture and animal husbandry. The primary motivations for joining FPCs were access to inputs and market information, while key constraints included high transportation costs, lack of proper training, and inadequate market intelligence. Members generally held positive attitudes toward the benefits of FPCs, particularly in enhancing professionalism and collective input procurement. However, challenges such as limited participation in decision-making, low transparency in some cases, and weak market access persist. The study recommends capacity building, improved governance, enhanced market linkages, and inclusive participation strategies to strengthen the performance and sustainability of FPCs in the region.

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

Introduction
Agriculture in India is predominantly characterized by small and marginal landholdings, which pose significant challenges in terms of productivity, market access, and resource mobilization. To address these challenges and empower farmers, particularly those with limited resources, the Government of India has actively promoted the formation of Farmer Producer Companies (FPCs). FPCs are structured to enable collective action among farmers, allowing them to access quality inputs, technical support, and better markets while improving their bargaining power and income levels. In this context, understanding the socio-economic profile of FPC member farmers is essential for evaluating the inclusivity and representativeness of these institutions. Furthermore, the attitude of farmers towards FPCs plays a crucial role in their sustained participation and contribution to collective initiatives. Despite the theoretical benefits of FPCs, several constraints continue to affect their functionality and the satisfaction of their members, including lack of training, market access issues, inadequate infrastructure, and limited awareness. This study was undertaken in Khergam Taluka of Navsari District, Gujarat, an agriculturally significant region, to explore the dynamics of FPC membership from a grassroots perspective. The findings of this study are expected to offer insights for policymakers, FPC promoters, NGOs, and agribusiness stakeholders to enhance the efficiency, outreach, and impact of FPCs, thereby contributing to rural economic development and agricultural sustainability. The specific objectives were:

- To study the socio-economic profile of member farmers,
- To examine the attitude of member farmers towards Farmer Producer Companies (FPCs), and
- To identify the key constraints faced by member farmers in their association with FPCs.

Research Methodology

Participants: The study was conducted in Khergam Taluka of Navsari District, Gujarat, a region recognized for its agricultural activity. A non-probability purposive sampling method was employed to select 150 member farmers of the Khergam Saxam Krushak Producer Company Limited (FPC). This approach ensured that respondents had relevant knowledge and experience with the functioning of Farmer Producer Companies (FPCs), thereby providing meaningful insights into the study objectives.

Measures

Data were collected from both primary and secondary sources. Primary data were obtained through personal interviews using a structured interview schedule, which ensured consistency in responses and allowed for comprehensive data collection across socio-economic variables, attitudes towards FPCs, and perceived constraints. Secondary data were collected from government reports, research papers, academic journals, and company websites, offering contextual support and background information to reinforce the primary findings.

Statistical Analysis: To analyze the data and draw meaningful inferences, a range of statistical tools was utilized. Frequency and percentage analysis were used to describe the demographic and socio-economic characteristics of the respondents. Mean score analysis and Likert scale interpretation were applied to assess the farmers' attitudes towards FPCs. Tabular and graphical representations were used for better visualization and understanding of the data. Additionally, the cumulative score method and rank order analysis helped identify and prioritize key constraints and preferences of member farmers.

Procedure

The study adopted a descriptive research design, suitable for analyzing present conditions and systematically describing the socio-economic profile of FPC members, their attitudes, and the challenges they face. The ex post facto nature of the design allowed observation without manipulating variables. Using purposive sampling, the researcher targeted participants actively involved with the FPC. Data collection was carried out through in-person interviews using a structured instrument, ensuring reliability and alignment with the research objectives.

Results and Discussion

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

Gender of Respondents		
Gender	**Frequency**	**Percentage**
Male	132	88
Female	18	12
Total	150	100
Age of Respondents (years)		
Age Group (in Years)	**Frequency**	**Percentage**
31-40	8	5.00
41-50	52	35.00
51-60	75	50.00
Above 60	15	15.00
Total	150	100
Education of Respondents		
Education Level	**Frequency**	**Percentage**
Below SSC	79	53.00
SSC	31	21.00
HSC	32	21.00
Graduation	8	5.00
Post Graduation	0	00.00
Total	150	100
Landholding Size		
Land Holding	**Frequency**	**Percentage**
Marginal (<1 ha)	36	24.00
Small (1-2 ha)	91	61.00
Large (>2 ha)	23	15.00
Total	150	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
Annual Income		
Monthly Income	**Frequency**	**Percentage**
20,000-50,000	27	18.00
50,000-1,00,000	30	20.00
1,00,000-2,00,000	87	58.00
More than 2,00,000	6	4.00
Total	150	100
Occupation		
Occupation	**Frequency**	**Percentage (%)**

Agriculture +Service	12	8.00
Agriculture	49	33.00
Agri Retired	6	4.00
Agri Animal husbandry	83	55.00
Total	150	100
Family Type		
Types of Family	**Frequency**	**Percentage**
Joint	44	29.00
Nuclear	106	71.00
Total	150	100
Motivation source for joining FPCs		
Motivation source	**Frequency**	**Percentage**
NGO's	24	16.00
Another member of FPCs	65	43.00
Relatives/Neighbors	61	41.00
Total	150	100
Participation as member in FPC meetings		
Participation in FPC meeting	**Frequency**	**Percentage (%)**
Always	49	32.67
Often	33	22.00
Sometime	26	17.33
Rarely	17	11.33
Never	25	16.67
Total	150	100

Table 1 highlights the socio-economic profile of Farmer Producer Company (FPC) members in Khergam Taluka, Navsari district, provides a crucial insight into the demographic and economic conditions that influence their participation in FPC activities and agricultural decision-making. The study revealed that 88% of the respondents were male and only 12% were female. This skewed gender distribution reflects the male-dominated nature of farming in the region, which is consistent with national patterns where women often play supportive but less visible roles in agricultural enterprises. Similar findings were reported by Patel and Chauhan (2020), who found that male farmers dominate FPC membership due to social norms and land ownership patterns in Gujarat. The majority of respondents were in the 51-60 years (50%) and 41-50 years (35%) age groups, indicating that middle-aged to older farmers are more actively involved in FPCs. Younger participation (below 40) was relatively low, accounting for only 5%. This trend suggests that farming and FPC participation remain concentrated among older generations, possibly due to land ownership and decision-making authority being vested in senior family members. Rani et al. (2019) observed similar results in Andhra Pradesh, where older farmers had more representation in producer groups than younger farmers, who often seek non-agricultural employment. A significant 53% of the respondents were educated below SSC, with only 5% being graduates and none holding postgraduate qualifications. This limited formal education could influence farmers' understanding of FPC functions, market dynamics, and technology adoption. Similar studies, like that of Madhavi and Srivastava (2021), emphasize the need for tailored capacity-building programs in low-literacy farming communities to enhance their participation in agribusiness ventures. Most of the respondents were small (61%) and marginal (24%) farmers, with only 15% owning large landholdings. This indicates that FPCs in the region are largely composed of smallholders, which aligns with the goals of FPC policy aimed at collectivizing small and marginal farmers for better market access and input procurement. This is supported by Dev (2012), who noted that smallholder inclusion is central to the success of FPOs in India. The study showed that 50% of the farmers belonged to medium-sized families (5-6 members), followed by 33% with large families (>6 members). Larger household sizes may provide more family labour, which could be an advantage in farming operations and collective activities. A majority of respondents (58%) had an annual income between ₹1,00,000-2,00,000, suggesting a modest economic background. Only 4% earned above ₹2,00,000, highlighting the financial constraints that FPC members often face. These findings are in line with Kumar et al. (2018), who observed that income levels among FPC members in Maharashtra remained moderate due to dependence on seasonal agriculture and limited diversification. A majority (55%) of respondents reported their occupation as agriculture combined with animal husbandry, showing the multi-occupational nature of rural livelihoods. This aligns with studies that emphasize integrated farming as a coping strategy for risk mitigation (Singh & Birthal, 2020). The data showed that 71% of the respondents belonged to nuclear families, reflecting the shifting family structure in rural Gujarat. This transition may impact labour availability and decision-making patterns in farming operations. The major source of motivation was peer influence, with 43% joining FPCs due to recommendations from existing members and ˇinfluenced by relatives or neighbours. Only 16% were motivated by NGOs, showing the strong role of informal networks in influencing membership. This is corroborated by Jain and Trivedi (2020), who noted that trust and social bonding play a crucial role in encouraging FPC participation. Participation in FPC meetings varied, with 32.67% always attending, and 22% attending often. However, a notable 16.67% never attended, which indicates potential gaps in engagement or awareness. Effective participation is vital for collective decision-making and sustainability of FPCs. Similar concerns were raised by Rathod and Pundir (2022), who suggested that consistent communication and member involvement are essential for FPO effectiveness.

Table 2: Reason for joining as FPC members

Reasons	Strongly Agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly Disagree (5)	C.S.	Mean	Rank
Better price realization	10 (10)	30 (60)	67 (201)	13 (52)	30 (150)	473	3.15	III
Effective management	17 (17)	50 (100)	39 (117)	33 (136)	10 (50)	420	2.8	VIII
Good services provided	15 (15)	40 (80)	32 (96)	47 (188)	16 (80)	459	3.06	IV
Market information	13 (13)	27 (54)	45 (135)	33 (132)	32 (160)	494	3.29	II
Transparency in operation	13 (13)	27 (54)	45 (135)	25 (100)	40 (200)	412	2.74	VI
Access to inputs	1 (1)	44 (88)	36 (108)	27 (108)	42 (210)	515	3.43	I
Training provided	8 (8)	42 (84)	65 (195)	15 (60)	20 (100)	447	2.98	V
Market Access	15 (15)	20 (40)	35 (105)	35 (140)	45 (225)	325	2.16	VII

The table 2 depicts presents farmers' responses to various reasons for joining FPCs using a Likert scale, with responses ranked based on mean scores. "Access to inputs" ranked first among all reasons, indicating that the majority of respondents viewed FPC membership as a valuable channel for obtaining agricultural inputs such as seeds, fertilizers, and pesticides at competitive prices or with greater reliability. This finding aligns with Patel and Chauhan (2020), who reported that FPCs improve farmers' access to timely and quality inputs, reducing their dependence on local middlemen. Access to "market information" was the second most important reason, highlighting the role of FPCs in providing members with timely and accurate data on prices, demand trends, and buyer preferences. This supports the findings of Kumar et al. (2019), who emphasized that FPCs bridge the information gap for smallholder farmers, improving their bargaining power. Although often cited as a core benefit of FPCs, "better price realization" received a relatively moderate ranking. This may indicate that while farmers expected higher prices through collective marketing, the benefits may not yet be fully realized or consistent. This partial satisfaction echoes Trebbin (2016), who noted that price realization through FPCs is often influenced by the maturity of the organization, scale of operations, and market linkages. Services such as support in input procurement, credit facilitation, and advisory services were rated positively. This supports the study by Dev (2012), who emphasized the service delivery role of FPOs, particularly in remote areas where state extension systems are weak. Training services, though available, were not highly rated, suggesting a need for improvement in quality, frequency, or relevance of training programs. Madhavi and Srivastava (2021) similarly found that many FPCs lack dedicated training infrastructure or technical experts to build farmer capacity effectively. The relatively lower mean score on "transparency" indicates a concern among members about the internal governance and communication processes of FPCs. As Jain and Trivedi (2020) highlighted, member trust is critical for long-term sustainability, and a lack of transparency can hinder participation and ownership. Despite being a core function of FPCs, "market access" received a low score, reflecting that many farmers still struggle to connect to formal and profitable markets even after joining. According to Rao and Sutradhar (2020), several FPCs face logistical, financial, and operational hurdles in establishing direct market linkages, especially for perishable or low-volume commodities. "Effective management" was the least cited reason, indicating that many farmers may not be satisfied with the leadership or operational efficiency of their FPCs. Weak institutional capacity and lack of trained professionals often hinder FPC performance, as supported by Singh and Singh (2018).

Table 3: Statement-wise attitude of farmer producer organizations members towards the organization, (n = 150)

Sr. No.	Statement	SA (5)	A (4)	N (3)	DA (2)	SDA (1)	CS	Mean	Rank
1	Small and marginal farmer get encouragement for doing farming as a professional business. (+)	77 (385)	54 (216)	5 (15)	10 (20)	4 (4)	640	4.26	I
2	Participation in farmers producer organization save Labour, time and money of farmers. (+)	35 (175)	62 (248)	46 (138)	4 (8)	3 (3)	572	3.81	VI
3	Farmer receive good profits due to common sales of their agriculture produce by FPC. (+)	55 (275)	65 (260)	20 (60)	7 (14)	3 (3)	612	4.08	III
4	Farmer can purchase inputs conveniently due to FPC. (+)	85 (425)	35 (140)	8 (24)	12 (24)	10 (10)	623	4.15	11
5	Lack of transparency in financial transaction of FPC. (-)	3 (3)	15 (30)	49 (177)	39 (156)	44 (220)	586	3.90	V
6	Some Farmers of FPC are deprived from the process of decision making. (-)	8 (8)	15 (30)	47 (141)	28 (112)	52 (260)	543	3.62	VII
7	Processing and storage of agriculture produce of Farmer members of FPC is done effectively. (-)	0 (0)	8 (16)	20 (60)	86 (344)	36 (156)	600	4	IV
8	Some farmers don't know about FPC, so they don't use the helpful things they offer. (-)	24 (24)	32 (64)	21 (63)	39 (156)	34 (170)	477	3.18	V111
9	Starting and Running FPC can seem hard to some farmers, so they don't try. (-)	32 (32)	42 (84)	38 (114)	26 (104)	12 (60)	394	2.62	X
10	Farmer some time feel left out of important decision in their FPC, so they don't get involved. (-)	19 (19)	37 (74)	28 (84)	42 (168)	24 (120)	465	3.1	IX

Table 3 presents a Likert-scale-based analysis of farmers' agreement or disagreement with various positive and negative statements about their FPO experience. The highest-rated statement indicates a strong positive perception that FPOs are encouraging small and marginal farmers to engage in farming as a professional business. This aligns with the intended purpose of FPOs as envisioned by the Government of India—to empower smallholders and make agriculture more viable. Similar findings were reported by Patel and Chauhan (2020), who noted that smallholders gain confidence

and market leverage through FPO membership. Farmers highly agreed that inputs could be purchased more conveniently through the FPO. This suggests that collective procurement helps streamline input supply chains, reduce costs, and improve accessibility especially critical for remote or underserved areas. Kumar et al. (2019) observed similar trends, stating that group-based input procurement lowers prices and enhances input quality. The third-ranked factor was that common sales through FPOs increase profitability, indicating that members recognize the economic benefits of collective marketing. This supports Trebbin (2016), who emphasized that FPCs enable better price negotiation and reduce middlemen exploitation. The FPO's ability to process and store produce effectively was viewed positively, which is a good sign of forward linkage development. Studies by Dev (2012) note that such value-added services are crucial for improving income and reducing post-harvest losses. Although this is a negative statement, the mean score reflects disagreement with the idea of non-transparency, implying that members generally perceive financial transactions to be transparent. Trust in internal operations is critical, and Jain & Trivedi (2020) stressed that transparency directly impacts member participation and trust in governance. Moderately ranked, this statement shows positive agreement that FPO membership contributes to efficiency gains. This benefit reflects operational integration and resource sharing. Madhavi and Srivastava (2021) also found similar efficiency-related attitudes among FPO members in Telangana. This negative statement received a neutral-to-agree response, suggesting that some members do feel excluded from decision-making. This signals a governance issue within FPOs. As emphasized by Singh and Singh (2018), participatory governance is crucial for inclusiveness and long-term viability. This reflects a moderate concern about awareness gaps some members may not fully understand or utilize FPO services. This supports Rao and Sutradhar (2020), who argue that awareness campaigns and capacity-building are essential to enhance member engagement. This low mean score suggests that few farmers feel that starting or managing FPOs is too difficult, reflecting either improved institutional support or low involvement in operational tasks. However, it may also mask underlying challenges faced by less literate or resource-poor farmers. The final ranked item suggests some perceived exclusion, reinforcing the earlier concern about limited democratic participation. Rathod and Pundir (2022) emphasized that increasing inclusivity and transparency in decisions can build member confidence and active involvement.

Table 4: To find out the constraints faced by member farmer towards FPC.

Sr. No.	Constraints	Frequency	Percentage
1	Increased work load	37	24.6
2	Lake of co-operation	45	30
3	Lack of initiatives of FPC members	33	22
4	Inadequate technical guidance	70	46.66
5	Lack of proper training facilities	88	58.66
6	Lack of latest market information	81	54
7	High transportation cost	95	63.33
8	Unawareness of credit facilities	93	62
9	Lack of crop insurance facilities.	60	40
10	Lack of awareness on importance of grading and packaging	87	58

The data in Table 4 highlights key operational, informational, infrastructural, and financial barriers. The most frequently reported constraint was high transportation costs, affecting 63.33% of the respondents. This implies that logistical challenges continue to burden farmers, especially when collective aggregation and market access are limited. Singh and Singh (2018) observed that inadequate transportation infrastructure significantly reduces the economic viability of smallholders participating in FPCs, particularly in remote areas. A significant number of farmers (62%) were unaware of credit facilities available through or with the support of FPCs. This highlights the gap in financial literacy and outreach efforts by the FPCs and financial institutions. Rao and Sutradhar (2020) also reported that limited awareness and procedural complexities hinder farmers from accessing institutional credit through FPOs. The third major constraint was the lack of proper training facilities, reported by nearly 59% of respondents. Training is essential for skill development, enterprise management, and value chain integration. Madhavi and Srivastava (2021) emphasized that inadequate training weakens farmer confidence and limits the effectiveness of FPOs in rural India. Over 58% of the farmers were not aware of the importance of grading and packaging, which are crucial for obtaining better prices and entering formal or export markets. This lack of knowledge limits value addition and quality standardization. Trebbin (2016) pointed out that most smallholder FPCs operate with limited exposure to post-harvest handling practices, resulting in missed marketing opportunities. More than half of the respondents (54%) reported inadequate access to market information, which affects their decision-making regarding pricing, demand trends, and choice of markets. This aligns with findings by Patel and Chauhan (2020), who noted that the lack of real-time market data prevents FPCs from realizing their full potential in collective bargaining. About 40% of farmers expressed concerns over the unavailability or unawareness of crop insurance. This exposes them to high risk during crop failure or natural calamities**.** Dev (2012) stressed the importance of integrating risk mitigation tools such as crop insurance into FPO frameworks for enhancing farmer resilience. The 30% of respondents identified a lack of cooperation among members as a barrier. This suggests internal challenges in collective functioning, coordination, or trust-building, especially in newly formed or poorly governed FPCs. According to Jain and Trivedi (2020), the success of an FPO heavily depends on social capital and member trust. Around 22% of respondents felt that lack of initiative among fellow members limited the effectiveness of the organization. This passive participation may stem from limited awareness, perceived ineffectiveness, or socio-cultural barriers. Engagement and ownership are essential to FPC success, as noted by Rathod and Pundir (2022). Nearly a quarter of respondents perceived increased workload as a constraint. This might relate to participation in meetings, group activities, and additional record-keeping, which may be seen as burdensome, especially if benefits are delayed. However, as Kumar et al. (2019) observed, initial efforts in collective work often require time investment before results materialize.

Suggestions

1. **Capacity Building and Training:** Conduct localized training on post-harvest practices, markets, and governance; provide technical support through KVKs and NGOs; and engage experienced members as peer trainers.
2. **Improve Market Linkages and Price Realization**: Strengthen aggregation and logistics, connect with

institutional buyers, and use ICT tools to enhance market access and price realization.

3. **Strengthen Governance and Participation:** Promote transparency, inclusive decision-making, mobile communication, and leadership training for stronger member engagement.
4. **Increase Awareness and Financial Literacy:** Conduct outreach on credit and insurance; collaborate with banks for accessible loans and promote schemes like PMFBY.
5. **Encourage Youth and Women Participation:** Run targeted campaigns and offer digital training and incentives to involve youth and women in FPC leadership and activities.
6. **Promote Collective Values and Social Capital:** Foster trust and cooperation through team-building, exposure visits, and recognition of active members.
7. **Enhance Value Addition and Storage Infrastructure:** Develop storage and processing units under government schemes and encourage agri-processing for value addition.
8. **Policy and Institutional Support:** Coordinate with agriculture departments for scheme convergence and employ professionals for efficient FPC management.

Conclusion

1. The study provides a comprehensive understanding of the socio-economic characteristics, motivations, attitudes, and constraints of Farmer Producer Company (FPC) members in Khergam Taluka of Navsari district. The findings highlight that FPC membership is largely dominated by middle-aged, male, smallholder farmers with relatively low levels of formal education. While access to inputs and market information are key motivators for joining, members also value collective procurement and profitability through FPCs. However, the study also revealed several critical challenges—such as high transportation costs, lack of proper training, inadequate technical guidance, and limited awareness about financial and risk-mitigation tools. Attitudinal responses suggest positive perception towards the FPC model, particularly regarding its role in professionalizing agriculture and facilitating input access. In this regard still there remain gaps in decision-making participation, transparency, and service delivery. To ensure the long-term sustainability and inclusiveness of FPCs, it is imperative to invest in capacity building, improve market linkages, and strengthen internal governance. Enhancing financial literacy, promoting youth and women participation, and expanding storage and value-addition infrastructure are equally vital. Strategic support from government agencies, NGOs, and institutional buyers can further amplify the impact of FPCs in empowering small and marginal farmers. Ultimately, a well-functioning FPC ecosystem can serve as a transformative vehicle for inclusive rural development and resilient agribusiness models.
2. 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. Dev SM. Small farmers in India: Challenges and opportunities. Indira Gandhi Institute of Development Research; 2012.
2. Jain R, Trivedi P. Governance challenges in Farmer Producer Organizations: A case study approach. J Agribus Dev Emerg Econ. 2020;10(2):251-263.
3. Jain R, Trivedi P. Social capital and participation in Farmer Producer Organizations. J Agribus Dev Emerg Econ. 2020;10(2):237-252.
4. Kumar A, Singh KM, Sinha S. Dynamics and performance of Farmer Producer Companies in Maharashtra. Agric Econ Res Rev. 2018;31(2):227-236.
5. Kumar A, Singh RK, Prakash N. Impact of Farmer Producer Organizations on market participation. Agric Econ Res Rev. 2019;32(1):89-98.
6. Madhavi R, Srivastava SK. Role of Farmer Producer Organizations in enhancing farmers' capacity: Evidence from Telangana. J Rural Dev. 2021;40(4):512-527.
7. Madhavi R, Srivastava SK. Strengthening Farmer Producer Organizations through training: Evidence from Telangana. J Rural Dev. 2021;40(2):236-245.
8. Patel K, Chauhan NM. Farmers' perception towards Farmer Producer Companies. Indian J Ext Educ. 2020;56(2):112-117.
9. Patel K, Chauhan NM. Socio-economic characteristics of the farmers involved in Farmer Producer Companies. Indian J Ext Educ. 2020;56(3):78-82.
10. Rani PL, Rao GD, Reddy GP. Farmers' participation in Farmer Producer Organizations: A study in Andhra Pradesh. Agric Econ Res Rev. 2019;32(2):187-194.
11. Rao NC, Sutradhar R. Farmer Producer Organizations and market linkages: Opportunities and constraints. Indian J Agric Mark. 2020;34(1):14-22.
12. Rathod SK, Pundir RS. Member engagement in Farmer Producer Organizations: Challenges and opportunities. Indian J Agric Mark. 2022;36(1):45-53.
13. Singh DK, Birthal PS. Livelihood diversification and resource use efficiency in rural India. Indian J Agric Econ. 2020;75(1):1-15.
14. Singh S, Singh T. Institutional capacity and performance of Farmer Producer Organizations in India. Econ Polit Wkly. 2018;53(25):45-52.

15. Trebbin A. Farmer Producer Companies in India: A new concept for collective action? Environ Planning A. 2016;48(1):104-121.
16. Bairwa SL, Meena LK, Lakra K, Kumar P. Farmers producer organization: Concept, practices and future scope. Econ Affairs. 2014;59(2):263-272.
17. Birthal PS, Roy D, Negi DS. Farmers' participation in India's milk markets: Patterns and determinants. Food Policy. 2015;55:131-139.
18. Chand R, Saxena R, Rana S. Small farmers in India: Challenges and opportunities. Indian J Agric Econ. 2017;72(1):1-27.
19. 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.
20. 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.
21. Saxena K, Tyagi R. Farmer Producer Companies in India: Conceptual issues and developmental interventions. Indian J Agric Econ. 2017;72(3):321-330.
22. Sharma R, Singh RK. Social capital and collective action: Role of Farmer Producer Organizations. Agric Econ Res Rev. 2020;33(Conference Number):29-36.
23. 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.
24. 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.
25. Yadav SS, Kumar P. Participation of farmers in Farmer Producer Organizations (FPOs): An empirical analysis. Indian J Ext Educ. 2020;56(2):55-60.