Research Article

Agricultural Marketing through Farmer Producer Organizations: An Empirical Analysis of Market Linkages and Marketing Practices in Punjab, India

Saurav[1], Jyoti Garg[2]

[1]Research Scholar, Punjabi University, Patiala. Sauravsharma4538@gmail.com
[2]Assistant Professor in Economics, University College Miranpur Patiala

Abstract

Farmer Producer Organizations (FPOs) can support farmers' market access, bargaining power and participation in agricultural value chains. This study examines the marketing channels and practices adopted by FPOs for marketing the agricultural produce of farmer members in Punjab. Primary data were collected from 390 farmer members and 150 FPO managers/representatives through separate self-structured questionnaires. Frequency, percentage, ranking and a one-sample right-tailed Z-test were employed. The findings show that 60.3% of farmer members perceived prices received through FPOs as remunerative, while 53.0% reported better price negotiation. Further, 56.4% acknowledged value addition, 61.2% export opportunities, 65.9% branding and labelling, and 63.9% digital marketing. Among the channels, Export, Contract Farming, Direct Marketing and Mandi recorded satisfaction significantly above the neutral level. Key constraints included competition from outsiders, perishability, inadequate markets and insufficient procurement.

Keywords: Farmer Producer Organizations; Agricultural Marketing; Marketing Channels; Market Linkages; Collective Marketing; Punjab

1. Introduction

Indian agriculture makes up 17.4 percent of the nation's "Gross Domestic Product" and supports the lives of more than half of population. More than 85% farmers are categorized as small and marginal, possessing a standard agricultural property of 1.16 hectares. The industry's disorganized state shows why these farmers struggle to get better value for their products. India confronts a significant problem in ensuring food and nutritional security for its population exceeding one billion (Prasad, 2019). At the same time the number of operational landholdings has been increased from 71 million in 1970-71 to 137.8 million in 2010-11. This increase indicates the decline in the average size of landholdings from 2.28 hectares to 1.16 hectares in this period. While smallholder agriculture is important for the economic development and poverty reduction in developing countries, its growth is always constrained by the need for institutional reforms to address market issues. As a consequence, financiers, governments and scholars are showing more interest in cooperative producer groups as a means to improve the performance of smallholder agriculture. This approach seeks to promote increased market participation (Khan, et al., 2020). 'FPO' is a group of farmers formed to enhance their productivity, marketing and profit in agriculture. It is usually registered under the 'Companies Act or Cooperative Act' and is managed by the farmers themselves. The main goal of an FPO is to strengthen the bargaining power of marginal and small farmers. It accomplishes this by utilizing contemporary farming techniques, assisting them in purchasing supplies together, and enabling them to sell their goods directly. Storage, transportation, processing, funding, training, and government program access are among the services provided by FPOs. Additionally, they eliminate intermediaries, assisting farmers in obtaining fair pricing.

Indian farmers have long suffered from predicaments and challenges. Farmers face various and numerous agricultural difficulties such as fragmented landholding, countless middlemen, and little value addition. The Government of India has proposed Farmers Producer Organizations (FPOs) as an answer to these challenges. The primary goal of these FPOs is to mitigate smallholder farmers' marketing problems and to enhance their market power through Consolidated Demand for superior agricultural inputs, finance and technology and Aggregated Demand for better market outlets. There are still unaddressed gaps in FPOs' marketing relations with large processors and firms (off takers) that purchase their outputs as they are still not willing to buy from and engage with FPOs. FPOs fully compete with traditional

aggregators and small traders within the value chain to intermediately purchase from farmers and sell to food processors and other large institutional buyers. Farmers can enter a contract with Farmer Producer Organizations (FPOs) which buy the produce and deliver it to the specified customers such as warehouses (Gupta, 2018). This does reduce some level of pricing risks as the sale of a single day can be perceived as multiple transactions. However, high shipping costs can reduce profits and, therefore, coordination is needed. FPOs need to manage each farmer's volume to optimize the use of the available truck space and avoid low-quality penalties at the warehouses of the buyers. Another form of trading is sauda which is the placing of large orders with specified conditions. This allows FPOs to contract the quantity, price, and quality of the produce to be provided at a particular date. The utilization of marketing intelligence in agriculture results in enhanced farmer revenue, less post-harvest losses, and improved customer pleasure. The negotiating leverage of farmers with traders, as well as the proportion of farmers' earnings from consumer expenditures, should be enhanced. The mitigation of associated risks might result in a decrease in transaction costs (i.e., the expenses related to selling the produce). Farmers would gain assistance from Marketing intelligence in identifying the market and the suitable marketing channel. Knowledge of the market allows the farmers to move to more profitable high-value crops. To enhance competitiveness, farmers must acquire knowledge of market information, which serves as the foundation for market intelligence data. The market knowledge also provided a foundation for comparisons between domestic and foreign markets, which informed choices about supply chains (Ali and Xia, 2022).

The agricultural economy of Punjab reached its zenith during the Green Revolution. The agricultural GDP saw an annual growth rate of 5.7% from 1971–1972 to 1985–1986, in contrast to India's overall growth rate of 2.31%. The initial display of Punjab's affluence was through wheat surpluses, then supplanted by rice. Consequently, Punjab emerged as a territory liberated from food assistance and the associated political reliance. Punjab epitomised agricultural success in India and achieved food sovereignty. Punjab has been a key player in the Indian agricultural sector, especially in the production of food grains. However, the collective institutional models like FPOs in the state have grown slowly. The reasons for this underrepresentation can be explained as follows: the implementation of Minimum Support Price (MSP) system in procurement; over reliance on wheat-paddy monoculture and less diversification into high value crops and the continued Traditional mandi based marketing system. The structural situation could have diminished the urgency for collective institutions to deal with the market.

Despite the growing emphasis on Farmer Producer Organizations as instruments for collective marketing and improved market access, there remains a need for empirical evidence on the actual marketing channels and marketing practices adopted by FPOs, particularly in the context of Punjab. In Punjab, where conventional mandi-based marketing frameworks and established procurement channels remain relevant, examining the marketing tactics of FPOs can give information on their extent and type of market participation. Therefore, the present study analyzes the market linkages and marketing practices off FPOs in Punjab, with special emphasis on the marketing channels adopted for the agricultural produce of farmer members.

Literature Review

Farmer Producer Organizations (FPOs) are becoming an important instrument to improve the farmers market access, collective bargaining power and participation in the agricultural value chain. Vedasri & Mishra (2022) discovered that Farmers lacked the proper access to the market and they were selling their produce to the middlemen, as a result of which their profits were reduced. This study reveals that "FPOs facilitate small farmers to come together and form joint business, which can make them more competitive and access other markets through organization and collective action." Likewise, Chandegera et al., (2023) noted that the FPOs enhanced the market access, bargaining power, economies of scale, value chain integration and diversification opportunities of the small and marginal farmers. The study also underscored the importance of FPOs in accessing several modern market channels and decreasing the reliance on informal market systems. Aditi and Acharya (2023) focused on sustainability of FPOs and choice of marketing channels, diversification of marketing channels. The study also highlighted that, individual farmers don't have access to marketing channels like future market and contract farming, whereas the FPOs have access to these markets by aggregating farmers/producers and once again emphasized the need of FPOs to diversify marketing avenues and channels for sustainable long-term viability to earn profit along with obtaining revenue. The spot market was the most utilised of the channels provided, but was highly uncertain. Hedging price risk was done through futures markets and contract farming was used to hedge counterparty risk. The poor post-harvest management, lack of financial resources, and lack of awareness and technical expertise among others limited participation in the futures trade. Shiferaw et al. (2006) conducted study on the role of collective marketing and market efficiency of producer marketing groups in Kenya. The

constraints found in the market efficiency were transaction cost and coordination problems in the value chain of production-consumption. It called for the development of producer organisations and the establishment of collective marketing organisations to overcome the common market failures. Farmer groups could be one way of promoting collective action and improving farmers' access to markets (Stockbridge et al., 2003). It was found that farmers groups provided critical services mainly in terms of access to market information and marketing support in marketing of inputs, products and processing. Rural organisations are also producer organisations set up by the members to improve their agricultural incomes via improved productive methods, enhanced market efficiency and local processing operations (Rondot and Collion, 2001). A study was also conducted on the functions of producer organisations in pricing operations, agricultural trade and inputs and services access to members. Agarwal and Goyal (2022) spoke about marketing problems faced by FPOs and highlighted that lack of market access and bargaining power are significant issues. The study recommended the same marketing allied with the following aspects for better market access: Real time market information, Marketing excursions, Integration of FPOs in e-commerce, Collective bargaining and Direct link between FPOs and buyer. Some of the high value markets require special attention by promoting organic or other special goods, local branding and Geographic Indications (GI), as mentioned by Agarwal and Goyal (2022). The results show that market linkage is not only about physical transportation and sale of agricultural products; it is also about information sharing, negotiations, customer relations and product positioning. If the market price is low, the market is volatile and the transportation cost is high, then FPOs encounter less difficulties in marketing. The study recommended the linkages of contract farming, cooperative marketing, improvement of market information systems, diversified planting techniques to reduce market (Singh et al.). It also highlighted the importance of the community processing unit, cold chains and food processing facilities for the FPOs to cater to the higher value marketing. There is also a need to have a community processing unit, cold chains and food processing infrastructure for FPOs to access higher value markets, it added. The constraints are more relevant when evaluating the effectiveness of alternative marketing channels because transport, storage and post harvest handling as well as market infrastructure may affect the feasibility and profitability of alternative channels. Also, the findings of Stockbridge et al (2003) illustrated the importance of market information and marketing support where farmer groups provided market information and marketing support for marketing and processing of products. Agarwal and Goyal (2022)also suggested the use of real time market information and direct linkages with buyers for a better market access. The findings indicate that an FPO's marketing channel performance not only depends on the channel chosen to sell the produce, but also on access to information, bargaining power, and buyer relationships and supporting infrastructure. However, previous research has dealt with the general contributions of FPOs to market access and/or constraints to marketing rather than examining their specific contribution to individual marketing channels. In Punjab, empirical evidence on marketing channels adopted by FPOs for marketing of agricultural produce of their farmer members is scant. Hence, it is decided that the present study is to be confined to the marketing channels used by FPOs in Punjab and also, to examine the market linkages and marketing practices of FPOs in regards to the sale of agricultural produce of their farmer members.

Research Methodology

The study is quantitative and descriptive in nature to explore the marketing channels used by the agricultural produce of the farmer members of Farmer Producer Organisations (FPOs) in Punjab, India. The primary data was collected from two groups of respondents using different self-structured questionnaires, 390 farmer members of FPOs and 150 FPO managers/representatives making a total sample of 540 respondents. The questionnaire for the farmer members were more centered on their experiences and perceptions of marketing services and outcomes of the FPOs, such as marketing support, price negotiation, and practices related to marketing; while the questionnaire for the farmer's manager/representative focussed on the marketing operations and channels undertaken by the FPOs for the members' agricultural produce. A total of nine channels were considered for the analysis of marketing channels namely Farmer's Weekly Bazaar, House Societies, Retail Shops/Malls, House/Restaurants, Export, Contract Farming, Online Market, Direct Marketing and Mandi. The different marketing channels were analysed in terms of their prevalence and relative position by means of frequency and percentage techniques. The answers of the farmer members were analyzed separately to draw conclusions regarding their perceptions and experience of FPO marketing while the FPO manager's responses were used to explore about the marketing channels adopted by FPOs and their level of satisfaction with each channel respectively. In addition, a one sample right-tailed Z test was used in the channel level analysis with a hypothesised mean, μ_0, of 3 at the 5% level of significance.

Hypothesis:

H_0: The mean satisfaction score for a marketing channel is not significantly greater than 3.
H_1: The mean satisfaction score for a marketing channel is significantly greater than 3.

Results And Discussion

4.1 Marketing-related responses of farmer members (n = 390)

Table 4.1.1: Method of Sale of Agriculture Produce (1 is for First Priority and 8 for the least prior)

Market	PRE-FPO	POST-FPO
Local Market	2	1
Local Trader	1	2
FPO	4	3
Process Industry	7	7
Private Company	6	6
Export	5	4
Direct Marketing	3	5
Others	8	8

This shift in preferences reflects that FPOs are effectively enabling farmers to diversify their marketing strategies. The rise of local markets and FPOs themselves as preferred channels indicates improved access, pricing, and trust in the collective marketing model. While local traders are still relevant, their influence is gradually being balanced by the organized and cooperative structure of FPOs. There is also a marginal rise in the appeal of exports, showing FPOs' role in exploring non-traditional markets. However, engagement with processing industries and private companies remains limited, suggesting a need for FPOs to build stronger linkages in these areas to further expand farmers' market options and value-addition opportunities.

Table 4.1.2: The price received by you after marketing the product through FPO is remunerative

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	57	14.6	14.6	14.6
Disagree	46	11.8	11.8	26.4
Neutral	52	13.3	13.3	39.7
Agree	90	23.1	23.1	62.8
Strongly Agree	145	37.2	37.2	100
Total	390	100	100	

The data reveals the perception of farmers regarding the remunerative nature of prices received after marketing their produce through Farmer Producer Organizations (FPOs). Out of 390 respondents, 145 farmers (37.2%) strongly agree and 90 farmers (23.1%) agree that the price they receive through FPOs is remunerative. This combined 60.3% reflects a strong positive sentiment and indicates that a significant majority of farmers believe that FPOs have helped them secure better prices for their produce.

Overall, the data highlights a favourable outlook towards the effectiveness of FPOs in ensuring remunerative prices. However, the presence of dissenting and neutral responses suggests that there is still room for improvement. Continued efforts in strengthening market linkages, improving collective bargaining, and enhancing transparency in pricing mechanisms can further increase the trust and satisfaction of all member farmers.

Table 4.1.3: FPO negotiates better prices for your produce compared to selling independently

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	79	20.3	20.3	20.3
Disagree	56	14.4	14.4	34.6
Neutral	48	12.3	12.3	46.9
Agree	91	23.3	23.3	70.3
Strongly Agree	116	29.7	29.7	100

Total	390	100	100	

Out of 390 respondents, a substantial portion—116 (29.7%) strongly agreed and 91 (23.3%) agreed—indicating that more than half (53%) believe FPOs have successfully negotiated more favourable rates for their produce. This suggests that collective marketing and bulk selling through FPOs may have given farmers better bargaining power, reduced exploitation by middlemen, and improved access to institutional buyers or markets.

These findings underline the potential of FPOs in empowering farmers through collective price negotiations, but also indicate the need for improvement in consistent delivery of these benefits. FPOs may need to enhance their market intelligence, strengthen linkages with institutional buyers, improve post-harvest handling and grading systems, and ensure fair pricing mechanisms. Transparency in price-sharing, educating farmers about the negotiation process, and showcasing real comparative benefits could further build trust and encourage wider participation in the FPO ecosystem.

Table 4.1.4: FPOs engage in value addition activities or processing of agricultural produce before marketing

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	66	16.9	16.9	16.9
Disagree	54	13.8	13.8	30.8
Neutral	50	12.8	12.8	43.6
Agree	85	21.8	21.8	65.4
Strongly Agree	135	34.6	34.6	100
Total	390	100	100	

Out of 390 respondents, a significant portion—135 farmers (34.6%)—strongly agree, and another 85 (21.8%) agree that FPOs engage in value addition activities. This combined 56.4% indicates that more than half of the farmers perceive their FPOs as active participants in processing, packaging, grading, or transforming raw agricultural produce before it reaches the market. These value-added services not only enhance the quality and shelf-life of the produce but also improve marketability and price realization for the farmers.

Overall, the data suggests a generally positive outlook among farmers towards FPOs' role in value addition. However, the variation in responses also points to a need for standardizing and expanding processing infrastructure and awareness across all FPOs. Strengthening such activities can significantly increase farmers' income, reduce post-harvest losses, and contribute to the broader goal of rural economic development.

Table 4.1.5: FPO facilitates export or international marketing opportunities for agricultural produce

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	53	13.6	13.6	13.6
Disagree	40	10.3	10.3	23.8
Neutral	58	14.9	14.9	38.7
Agree	93	23.8	23.8	62.6
Strongly Agree	146	37.4	37.4	100
Total	390	100	100	

The data illustrates farmers' perceptions regarding the role of Farmer Producer Organizations (FPOs) in facilitating export or international marketing opportunities for agricultural produce. Among the 390 respondents, 146 farmers (37.4%) strongly agree and 93 farmers (23.8%) agree that their FPOs have supported or created access to international markets. This means that over 61% of the respondents positively acknowledge the efforts of FPOs in promoting global outreach for agricultural products.

Overall, the results suggest that a majority of farmers recognize the expanding role of FPOs in tapping international markets, which can significantly enhance income and competitiveness. However, the varied responses highlight a need for greater communication, capacity building, and infrastructural support to ensure that all members, especially small

and marginal farmers, can effectively participate in and benefit from global marketing opportunities.

Table 4.1.6: FPOs engage in branding or labelling activities for the produce

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	43	11	11	11
Disagree	36	9.2	9.2	20.3
Neutral	54	13.8	13.8	34.1
Agree	101	25.9	25.9	60
Strongly Agree	156	40	40	100
Total	390	100	100	

The data reflects farmers' perceptions regarding the involvement of Farmer Producer Organizations (FPOs) in branding or labelling activities for agricultural produce. Out of 390 respondents, 156 farmers (40.0%) strongly agree and 101 (25.9%) agree that FPOs are engaged in branding or labelling. This combined 65.9% indicates that a significant majority of the farmers acknowledge the FPOs' efforts to enhance the market identity and value of their produce through branding and packaging

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Overall, the findings suggest that branding and labelling are emerging as important functions of FPOs, contributing to value addition and better price realization. However, to maximize the impact, there is a need to ensure consistency in branding efforts across all member regions, improve visibility in markets, and educate farmers about the long-term benefits of branded produce. This can enhance trust, boost consumer recognition, and strengthen the collective identity of farmers in competitive markets.

Table 4.1.7: FPO leverages digital technologies or e-commerce platforms to expand the marketing opportunities for its farmer members

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	53	13.6	13.6	13.6
Disagree	38	9.7	9.7	23.3
Neutral	50	12.8	12.8	36.2
Agree	106	27.2	27.2	63.3
Strongly Agree	143	36.7	36.7	100
Total	390	100	100	

Out of 390 respondents, 143 farmers (36.7%) strongly agree and 106 (27.2%) agree that their FPO leverages digital tools for marketing. This combined 63.9% indicates that a significant majority of farmers recognize and appreciate the FPO's efforts in adopting digital and online channels to promote agricultural produce.

Overall, the results highlight a progressive shift among FPOs toward embracing digital marketing strategies, which can help farmers access wider markets, reduce dependency on intermediaries, and improve profitability. However, the presence of disagreement and neutrality points to the need for further investment in digital literacy, infrastructure, and training to ensure that all members can effectively benefit from these modern platforms.

Table 4.1.8: FPO provides logistical support, such as transportation and packaging, to ease the marketing process

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	61	15.6	15.6	15.6
Disagree	59	15.1	15.1	30.8
Neutral	60	15.4	15.4	46.2

Agree	90	23.1	23.1	69.2
Strongly Agree	120	30.8	30.8	100
Total	390	100	100	

Out of 390 respondents, 120 (30.8%) strongly agreed and 90 (23.1%) agreed that their FPO provides such logistical assistance. This means a significant 53.9% of farmers acknowledge the supportive role of FPOs in reducing the burden of transporting produce and managing post-harvest packaging, which are often key challenges in agricultural marketing. These findings point to the uneven availability or effectiveness of logistical support across different FPOs. For the FPO model to be more impactful, consistent and well-structured logistical services are essential. Transportation and packaging not only affect the convenience of selling but also influence produce quality, shelf life, and ultimately the price received. Therefore, FPOs should strengthen partnerships for vehicle access, invest in common packaging centers, and sensitize members about the availability and benefits of such support. A well-developed logistical framework can substantially improve efficiency, reduce post-harvest losses, and enhance overall farmer satisfaction with the FPO system.

Table 4.1.9: Do you feel that available market facilities are sufficient?

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	74	19	19	19
Disagree	51	13.1	13.1	32.1
Neutral	59	15.1	15.1	47.2
Agree	96	24.6	24.6	71.8
Strongly Agree	110	28.2	28.2	100
Total	390	100	100	

The data reflects farmers' perceptions regarding the sufficiency of available market facilities in their regions. Out of the total 390 respondents, 96 farmers (24.6%) agreed and 110 (28.2%) strongly agreed that the current market infrastructure and services are adequate to meet their needs. This combined 52.8% positive response indicates that more than half of the surveyed farmers are relatively satisfied with the accessibility, convenience, and functionality of existing market facilities—likely including transport arrangements, storage, market yards, and price information systems.

These mixed perceptions suggest that while notable improvements may have been made in agricultural marketing infrastructure—possibly through FPOs or government interventions—significant gaps still persist. Challenges such as inadequate rural market access, lack of cold storage or transport services, or limited market intelligence could be affecting a portion of the farming community.

Table 4.1.10: You are satisfied with the overall marketing services provided by FPO

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	57	14.6	14.6	14.6
Disagree	55	14.1	14.1	28.7
Neutral	53	13.6	13.6	42.3
Agree	97	24.9	24.9	67.2
Strongly Agree	128	32.8	32.8	100
Total	390	100	100	

The data reflects the level of satisfaction among farmers regarding the overall marketing services provided by Farmer Producer Organizations (FPOs). Out of the 390 respondents, a considerable portion—128 (32.8%) strongly agreed and 97 (24.9%) agreed—indicating that a majority (57.7%) of farmers are satisfied with the marketing-related support and services offered by their respective FPOs. These services may include collective marketing, price negotiation, access to better markets, logistical assistance, and reduction of middlemen involvement, all contributing to improved market outcomes for the members.

Overall, while more than half of the farmers express satisfaction with FPO marketing services, there is a significant segment that remains either neutral or dissatisfied. To improve satisfaction levels, FPOs should focus on strengthening

their market linkages, providing timely and transparent services, expanding outreach efforts, and actively addressing farmer grievances. Continuous feedback mechanisms and performance assessments can also help FPOs tailor their services more effectively to member needs and market realities.

4.2 Marketing channels adopted by FPOs (n = 150)

Table 4.2.1: Does the price famer members are receiving after joining the FPO has increased

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	98	65.3	65.3	65.3
No	52	34.7	34.7	100
Total	150	100	100	

The data indicates the impact of joining Farmer Producer Organizations (FPOs) on the prices received by farmer members. Out of the total respondents (n=150), a significant majority—65.3% (98 farmers)—reported an increase in the prices they receive for their produce after joining the FPO. This suggests that FPO membership has likely enhanced their bargaining power, market access, and ability to secure better prices. Conversely, 34.7% (52 farmers) indicated that there has been no change in the prices, highlighting the need for further efforts to ensure equitable benefits for all members. Overall, the findings underscore the positive economic potential of FPOs for the majority of their members.

Table 4.2.2: Have you created your own brand name for marketing the produce

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	104	69.3	69.3	69.3
No	46	30.7	30.7	100
Total	150	100	100	

The data highlights the branding efforts of Farmer Producer Organizations (FPOs) for marketing their produce. Among the surveyed FPOs (n=150), a significant majority—69.3% (104 FPOs)—reported having created their own brand name for marketing their produce. This indicates that most organizations recognize the value of branding in enhancing market visibility, building customer trust, and achieving better prices for their products. Conversely, 30.7% (46 FPOs) have not yet established a brand name, suggesting potential untapped opportunities to differentiate their products in the market. These findings emphasize the importance of branding as a strategic tool for improving market access and competitiveness.

Table 4.2.3: Where do you sell the procured agricultural produce?

Sr. NO.	PARTICULARS	RANK
1	Farmer's Weekly Bazaar	3
2	House Societies	9
3	Retail Shops/Malls	6
4	House/Restaurants	5
5	Export	7
6	Contract Farming	1
7	Online Market	8
8	Direct Marketing	4
9	Mandi	2

Based on the responses provided, the ranking of various sales channels for agricultural produce reflects varying levels of satisfaction among farmers. Contract Farming is ranked the highest (1st), indicating that farmers are most satisfied with this method, likely due to better stability and long-term partnerships with buyers. Mandi follows closely in 2nd place, with farmers expressing a relatively high level of satisfaction. Farmer's Weekly Bazaar is ranked 3rd, where a notable portion of farmers report positive experiences, but there is also a fair share of dissatisfaction. Direct Marketing (4th) shows a solid satisfaction level, suggesting that farmers value the direct relationship with consumers. House/Restaurants (5th) hold the 5th position, where satisfaction levels are decent, but there is room for improvement. Retail Shops/Malls (6th) rank in the middle, with mixed feedback, indicating that while it has potential, logistical challenges or price constraints may impact its appeal. Export (7th) comes next, with a significant portion of farmers

dissatisfied, which might be linked to the complexities of export regulations and market access. Online Market (8th) holds the 8th position, where dissatisfaction is relatively high, likely due to issues with platform usability or a lack of reach. Finally, House Societies ranks the lowest (9th), reflecting considerable dissatisfaction among farmers, possibly due to limited resources or ineffective operational structures within the societies. Overall, the rankings suggest that traditional and direct methods like Contract Farming and Mandi tend to be more successful, while digital platforms and intermediated channels face challenges.

Table 4.2.4: How do you transport your agril produce to market/consumers

	Frequency	Percent	Valid Percent	Cumulative Percent
Own Vehicle	105	70	70	70
Hired Vehicle	45	30	30	100
Total	150	100	100	

The data indicates that a significant majority of FPO members (70%) use their own vehicles for transporting agricultural produce to markets or consumers. This suggests that many FPOs have the infrastructure or resources to manage logistics independently. On the other hand, 30% of members rely on hired vehicles for transportation, which could be a more flexible or cost-effective solution for those without access to personal transport options. This distribution highlights the varying capacity and resources among FPO members for managing the transportation of their produce. Access to vehicles is a key factor in the efficiency of market delivery and could be an area of focus for further support or improvement.

Table 4.2.5: What type of problems do you face while marketing of agricultural produce?

Sr. NO.	PARTICULARS	YES	NO
1	Perishability	112	38
2	JIT Supply	56	94
3	More markets/bazaars needed	113	37
4	Variations in customer demand	110	40
5	Insufficient Procurement	80	70
6	Competition from Outsiders	135	15

The data reveals several challenges faced by farmers while marketing their agricultural produce. The most significant issues include perishability (112 farmers report this problem), competition from outsiders (135 farmers), and the need for more markets/bazaars (113 farmers). Perishability is a critical issue as it can lead to loss of produce and revenue, while competition from outsiders may affect farmers' market share and pricing power. Furthermore, variations in customer demand (110 farmers) and insufficient procurement (80 farmers) highlight the unpredictability and supply chain difficulties. The issue of Just-In-Time (JIT) supply seems less prevalent, as only 56 farmers identified it as a challenge. Addressing these problems could improve the marketing efficiency for FPOs.

4.3 Hypothesis Testing

The satisfaction levels associated with the different marketing channels adopted by Farmer Producer Organisations (FPOs) were examined using a one-sample right-tailed Z-test, with 3 taken as the neutral value on the five-point satisfaction scale. The results reveal considerable variation across the marketing channels.

Table 4.3.1

Marketing Channel	Mean	SD	Z-value	Critical Z	Decision
Farmer's Weekly Bazaar	3.14	1.57	1.09	1.645	H_o Accepted
House Societies	2.33	1.49	−5.49	1.645	H_o Accepted
Retail Shops/Malls	2.87	1.62	−0.98	1.645	H_o Accepted

Houses/Restaurants	3.09	1.53	0.72	1.645	H_o Accepted
Export	3.26	1.38	2.3	1.645	H_o Rejected
Contract Farming	3.55	1.29	5.24	1.645	H_o Rejected
Online Market	2.71	1.43	−2.48	1.645	H_o Accepted
Direct Marketing	3.3	1.27	2.88	1.645	H_o Rejected
Mandi	3.63	1.25	6.18	1.645	H_o Rejected

For Farmer's Weekly Bazaar, the mean satisfaction score was 3.14 (SD = 1.57), with a calculated Z-value of 1.09, which was below the critical value of 1.645. Therefore, H_o was accepted, indicating that the mean satisfaction score was not significantly greater than 3. Similarly, House Societies recorded a mean score of 2.33 (SD = 1.49) and a Z-value of −5.49, indicating no statistically significant satisfaction above the neutral level.

The Retail Shops/Malls channel also did not show a statistically significant satisfaction level above the neutral value, with a mean of 2.87 (SD = 1.62) and a calculated Z-value of −0.98. Likewise, Houses/Restaurants recorded a mean satisfaction score of 3.09 (SD = 1.53) and a Z-value of 0.72, which remained below the critical value. Thus, H_o was accepted for both channels.

In contrast, statistically significant results were observed for Export, Contract Farming, Direct Marketing, and Mandi. Export recorded a mean satisfaction score of 3.26 (SD = 1.38) with a Z-value of 2.30. Contract Farming reported a mean of 3.55 (SD = 1.29) and a Z-value of 5.24. Direct Marketing recorded a mean of 3.30 (SD = 1.27) with a Z-value of 2.88, while Mandi recorded the highest mean satisfaction score of 3.63 (SD = 1.25) and a Z-value of 6.18. Since these calculated Z-values exceeded the critical value of 1.645, H_o was rejected for these four channels.

Overall, the findings indicate that satisfaction was significantly above the neutral level for Export, Contract Farming, Direct Marketing, and Mandi, whereas the remaining five channels did not exhibit statistically significant satisfaction above the neutral level. The descriptive ranking of the channels further shows that Contract Farming was ranked first, followed by Mandi, Farmer's Weekly Bazaar and Direct Marketing, while House Societies and Online Market occupied lower positions.

Findings

The findings provide evidence on the marketing structure and market linkages of Farmer Producer Organisations (FPOs) from both farmer-member and FPO perspectives. The major findings are as follows:

1. **Shift in farmers' marketing preferences after joining FPOs:** A comparison of the marketing channels before and after joining the FPOs reveals a change in marketing preferences of the farmers. FPOs increased from fourth place to third place and export channels decreased from fifth place to fourth place. Local markets rose to first position and dependence on local traders fell from first to second position. There was no significant difference between the overall rankings of marketing methods. This means, that while there have been some individual changes, the general trend of marketing preference has not been too different.

2. **Improved price realisation and bargaining through FPOs:** Most of the farmers members expressed their positive experiences about price realization and collective bargaining. Around 60.3% of the farmers agreed or strongly agreed that the prices received to FPOs were remunerative and 53.0% reported that FPOs secured better price as compared to independent selling. The above findings suggest that a significant number of farmer-members have benefitted from collective marketing and aggregation in terms of their bargaining power.

3. **Growing role of value addition and market-oriented activities:** 56.4% of the farmer members felt that the FPOs involved in value addition or processing activities and 61.2% felt that FPOs gave export opportunities or international marketing opportunities. Likewise, 65.9% knew that FPOs were involved in the branding and labelling of the products, which shows the growing trend of FPOs towards product differentiation and market development.

4. **Emergence of digital marketing:** The study results revealed that 63.9 per cent of the farmer members agreed/strongly agreed that their FPOs were leveraging digital technologies/e-commerce platforms for better marketing avenues. This indicates a growing trend towards digital approaches, but there is also evidence that not everyone has digital marketing in their own experience.

5. **Positive but uneven logistical and market infrastructure support:** About 53.9% of the farmer members felt that their FPOs had supported them with a logistical support like transportation, packaging etc. of the produce. Similarly, 52.8% of the respondents perceived the available market facilities as adequate. The findings indicate that FPOs are playing their part in marketing logistics and market access, however, the relatively low positive responses also point to gaps in the infrastructure and services.

6. **Overall satisfaction with FPO marketing services:** The results indicate that the farmer members have a generally positive perception of the FPO marketing services. Overall, 57.7 per cent agreed or strongly agreed they were satisfied with the overall marketing services offered by their FPOs. But 28.7% did not agree or strongly disagree that the benefits of marketing based on FPO are not equal for all members.

7. **Improvement in prices reported by FPO representatives:** 65.3% of the respondents who were surveyed from FPOs reported that the prices received by the farmer members improved after joining the FPO. This offers supporting evidence at the organizational level of the positive farmer members' perception on price realization.

8. **Strong emphasis on branding:** 69.3% of all 150 FPO respondents indicated that their FPO had created their own brand names for sale of agricultural produce. Branding is thus an important part of marketing strategies adopted by the FPOs.

9. **Variation across marketing channels:** The channel-level analysis reveals substantial variation in satisfaction. Contract Farming, Mandi, Direct Marketing and Export recorded mean satisfaction scores significantly above the neutral value of 3. The calculated Z-values were 5.24, 6.18, 2.88 and 2.30, respectively, exceeding the critical value of 1.645. In contrast, Farmer's Weekly Bazaar, House Societies, Retail Shops/Malls, Houses/Restaurants and Online Market did not show satisfaction significantly above the neutral level.

10. **Contract Farming and Mandi as important marketing channels:** Among the channels examined, Contract Farming received the highest descriptive ranking, followed by Mandi, Farmer's Weekly Bazaar and Direct Marketing. At the same time, Online Market and House Societies occupied lower positions, indicating differences in the perceived effectiveness and acceptance of alternative marketing channels.

Suggestions

1. Enhancing the digital infrastructure and digital literacy of rural areas: FPOs should also plan on conducting frequent digital literacy training sessions on using a smartphone, agricultural applications, online market platforms, digital payments and government portals. Farmers should be provided with the capability of getting current data on market prices, weather, government packages, new farming technologies, and new market opportunities. Mobile applications and instructional videos in regional languages should be created to facilitate the involvement of farmers who are less technologically savvy.

2. Building Post-Harvest Infrastructure: Enough storage and post-harvest facilities should be provided as 27.7% of farmers sell their produce immediately after harvesting to reduce distress sale and farmers would get better prices. A number of cold-storage facilities, warehouses, ripening chambers, grading units, packing houses and primary processing units should be set up at the FPO/cluster level. Government subsidies, cooperative funding and Public-Private Partnership (PPP) models should be promoted for financial accessibility of the small and marginal farmers to post harvest infrastructure.

3. Ensuring Inclusive and Affordable Services: FPOs can have a tiered pricing structure where the farmers charge on the basis of farmers' land holdings, income status and their ability to pay. Cross subsidisation can be included to ensure

that those who are financially robust help to deliver services to small and marginal farmers at an affordable price. Government schemes, CSR activities, international development assistance and institutional funding should be explored to provide essential services including soil testing, soil certification, soil consultancy, input supply and transportation through subsidised rates.

4. Improving Branding, Labelling and Quality Control: Strong and recognizable brands should be developed by the FPOs for differentiating agricultural products and enhancing market positions. Product branding, packaging, labelling, logo development, market promotion and consumer awareness should be provided by professionals. Training of the farmers should focus on quality assurance, product grading, traceability, hygiene, food safety standards and regulatory compliance. FPOs should ensure that appropriate certifications like organic, quality and Geographical Indications (GI) are made available, where applicable.

5. Enhancing Market and Buyer Linkages: FPOs need to create multiple marketing channels by having direct connections with processors, exporters, retail outlets, e-commerce, institutional buyers, and agricultural businesses. Regularly organize buyer-seller meetings, agricultural shows, business businesses, trade fairs, and exposure visits by the government. FPOs should have more presence on digital platforms like e-NAM and connect with agriculture start-ups for expanded market reach. The support of collective marketing and direct selling should be encouraged to minimise intermediaries and enhance farmers' bargaining power.

Conclusion

This study explored the marketing channels and practices of Farmer Producer Organizations (FPOs) of Punjab from the perspective of both, farmer members and FPO representatives. The findings suggest that FPOs are helping to strengthen agricultural marketing through collective marketing, better price realization, bargaining support, branding, value addition, export linkages and emerging digital marketing practices. Among the farmer members, 60.3 per cent indicated that the prices received from FPOs were remunerative and 53.0 per cent felt that FPOs negotiated better prices than independent selling. Over half of the respondents also acknowledged the role of FPOs in value addition, export facilitation, branding and digital marketing. The findings also demonstrate that the effectiveness of FPO marketing differs across channels. Contract Farming, Mandi, Direct Marketing and Export had satisfaction levels significantly above the neutral value. Farmer's Weekly Bazaar, House Societies, Retail Shops/Malls, Houses/Restaurants and Online Market had no statistically significant satisfaction above the neutral level. Contract farming and Mandi also ranked high in the descriptive ranking of marketing channels. The study, however, highlights ongoing challenges in FPO-based agricultural marketing despite these positive developments. Competition from outsiders, need for additional markets and bazaars, perishability, variations in customer demand and insufficient procurement continue to be important constraints. The findings therefore suggest that to strengthen FPOs, there should be more aggregation of produce, along with stronger market linkages, improved logistics and post-harvest management, diversified buyer networks and greater use of appropriate digital and institutional marketing channels. Overall, the study concludes that FPOs are important for improving the marketing environment of farmer members in Punjab but their marketing outcomes are heterogeneous across channels and members. Strengthening the capacity of FPOs to develop diversified and reliable market linkages will improve farmers' market access, price realization and participation in value chains.

Refrences

1. Aditi, & Acharya, D. (2024). Sustainability of farmer producer organizations and marketing channels: Some issues. In E. Revathi, I. C. Awasthi, B. S. Reddy, & A. Madan (Eds.), *Intersecting paths of sustainable development, urbanization, and women's empowerment* (pp. 11–28). Springer. https://doi.org/10.1007/978-981-97-9218-4_2
2. Agarwal, S., & Goyal, S. K. (2022). Progression of Farmer Producer Organisations in India. *The Indian Journal of Agricultural Sciences, 92*(12), 1490–1495. https://doi.org/10.56093/ijas.v92i12.118068
3. Ali, A., & Xia, C. (2022). Current and prospective impacts of digital marketing on the small agricultural stakeholders in the developing countries. In *Application of machine learning in agriculture* (pp. 91–112). Academic Press. https://doi.org/10.1016/B978-0-323-90550-3.00012-6
4. Chandegara, A. K., Chauhan, J. K., Upadhyay, A. D., Lahiri, B., Mahanand, S. S., Noopur, K., & Reena, H. (2023). The farmer producer organizations (FPOs): Building bridges to prosperity for India's agri-fish farming. *Indian Research Journal of Extension Education, 23*(4), 66–78. https://doi.org/10.54986/irjee/2023/oct_dec/66-78

5. Khan, A. A., Shivendra, K., Kumar, S., & Singh, S. (2020). Role of farmer producer organizations in the development of agriculture in Haryana. *International Journal of Current Microbiology and Applied Sciences, 9*(6), 1111–1119.
6. Prasad, C. S. (2019). Farming as an enterprise: Ten years of FPO movement in India. In *State of India's livelihood report 2019* (pp. 37–48). Access Development Services.
7. Rondot, P., & Collion, M.-H. (Eds.). (2001). *Agricultural producer organizations: Their contribution to rural capacity building and poverty reduction*. World Bank.
8. Shiferaw, B. A., Obare, G. A., & Muricho, G. (2006). Rural institutions and producer organizations in imperfect markets: Experiences from producer marketing groups in semi-arid eastern Kenya. *CAPRi Working Paper No. 60*. International Food Policy Research Institute. https://doi.org/10.22004/ag.econ.50066
9. Singh, S., Sekhon, M. K., Chaudhary, A., & Bharadwaj, S. (2022). Status and performance of farmer producer organisations in Gurdaspur district of Punjab. *Indian Journal of Agricultural Marketing, 36*(1spl), 96–104.
10. Stockbridge, M., Dorward, A., Kydd, J., Morrison, J., & Poole, N. (2003). *Farmer organisations for market access: An international review*. Department for International Development.
11. Vedasri, R., & Mishra, S. N. (2022). Linking farmer producer organizations with other markets – A sustainable change in marketing of farm produce. *International Journal of Environment and Climate Change, 12*(12), 1425–1437. https://doi.org/10.9734/ijecc/2022/v12i121583