

## ARTICLE

# The Role of Farmer Producer Companies (FPCs) in Creating Efficient Marketing of Soybean in Maharashtra, India

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## ABSTRACT

Farmer Producer Companies (FPCs) are now a common topic of discussion on various agricultural and rural forums. Over 4.5 million small and marginal farmers are currently covered by more than 10,000 FPCs nationwide. Over the coming years, these figures are anticipated to be more than double. In Maharashtra, FPCs are essential to the development of effective marketing strategies. An attempt has been undertaken to investigate the comparative marketing effectiveness of various marketing channels in relation to soybeans in Maharashtra. Using a 'Descriptive Research design', the functions of FPCs were investigated, and the comparative marketing effectiveness of various marketing channels was also examined. The basic price data for this study came from market officials and soybean producers in Maharashtra's soybean-growing region. Approximately fifty FPC members were selected to illustrate the challenges these FPCs face. To eliminate the issue of extreme variables and outliers, non-member farmers were selected in the same proportion to ensure that each category included the same type of farmer in terms of cropping patterns, land ownership, and other relevant criteria. FPC and non-FPC marketing channels have corresponding

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market efficiencies of 1.77 and 1.55. The price difference between the FPC and non-FPC marketing channels is 34.73 and 36.18 percent, respectively. The producer's share in the FPC and non-FPC consumer rupee channels was 65.26 and 63.81 percent, respectively. The FPC marketing channel's market margin and marketing expenses are lower than those of the non-FPC marketing channel. Farmers can reach bigger and more profitable markets with the help of FPCs.

**Keywords:** Farmer Producer Companies (FPCs); Sustainability; Supply and Value Chain; Marketing Efficiency; Marketing Margin

## 1. Introduction

The Farmer Producer Organization's (FPO's) movement is underway, with the term "FPO" recently gaining popularity and frequent use in agricultural and rural studies debates. Several authorities are now marketing more than 10,000 producer companies, representing over 4.3 million small farmers worldwide<sup>[1]</sup>. These numbers are expected to more than double in the upcoming years, reaching nearly 10% of all Indian agricultural households. About half of all producer businesses registered in India are based in four states: Madhya Pradesh, Tamil Nadu, Uttar Pradesh, and Maharashtra.

Due to the steady decline in farmers' average land holdings, farms are becoming unprofitable and challenging to survive<sup>[2-4]</sup>. The state's main crops include maize, pulses, cotton, and soybeans. Global value chains incorporate these crops<sup>[5,6]</sup>, and when smallholders produce them, their value chains become less competitive and less efficient compared to the global value chains of commodities. To address the aforementioned issues, an effort has been made to examine the relative marketing effectiveness of different marketing channels with reference to the Maharashtra soybean harvest.

In India, numerous organizational structures for collective companies have been supported at various points in time. The credit cooperatives, which were first marketed in the early 1900s under the Cooperative Credit Societies Act of 1904, were the first formal collectives. The Cooperative Societies Act of 1912 subsequently enabled the formation of non-credit collectives. The Multi-Unit Cooperative Organizations Act was passed later in 1942, enabling cooperative organizations to function in multiple states. Based on the recommendations of the "Alagh Committee" (1999),

which was established with the goal of creating legislation that would combine the business flexibility of a private company with the cooperative spirit, Farmer Producer Companies (FPCs) have become a viable alternative to state-sponsored or state-led cooperatives since 2003<sup>[7]</sup>. The Producer Companies Act of 2002 was ground-breaking in its goal of combining the structural advantages of a business with the principles of collective action.

Through the Innovation in Technology Dissemination (ITD) component of the World Bank's Agricultural Technology Project (NATP), agricultural extension reforms were started. Commodity-based farmer interest groups (FIGs) were formed to further farming systems-based agriculture following training and extension system visits. The goal of the World Bank-assisted Maharashtra Agricultural Competitiveness Project (MACP) was to enhance the state's farmers' access to markets, increase productivity, and improve profitability. In addition to several other efforts, 400 farmer-producer companies were recruited to help achieve the project's goal. The State of Maharashtra's Agribusiness and Rural Transformation (SMART) Project is being implemented to develop competitive and inclusive value chains of agricultural commodities, with a focus on small landholders and agripreneurs in the state. This project was deemed necessary after the MACP ended in order to build on the social capital in the state. More than 50% of FPCs are located in the Pune, Aurangabad, and Latur divisions of the Maharashtra state. **Table 1** displays the numerical status of each producer company registered in Maharashtra, broken down by division.

The formation of FPCs has emerged as a key strategy to empower farmers, improve market access<sup>[8,9]</sup>, and enhance agricultural value chains. Maharashtra, one

of India's leading agricultural states, has made considerable progress in establishing FPCs across its various administrative divisions.

As shown in **Table 1**, the distribution of FPCs across Maharashtra's eight agricultural divisions illustrates notable regional disparities. Aurangabad and Pune divisions account for the highest number

of FPCs, with 1,157 and 1,126, respectively. These regions benefit from relatively better agro-climatic conditions, market linkages, and institutional support mechanisms. In contrast, the Konkan division has the lowest number of FPCs at 206, which may be attributed to the region's challenging terrain, fragmented landholdings, and limited agricultural commercialization.

**Table 1.** Descriptive Analysis.

Sr. No.	Agriculture Divisions in Maharashtra State	Total FPCs in the Division
1	Konkan Division	206
2	Nashik Division	833
3	Pune Division	1126
4	Kolhapur Division	580
5	Aurangabad Division	1157
6	Latur Division	1098
7	Amravati Division	789
8	Nagpur Division	406
	Total	6195

Source: Ministry of Corporate Affairs, GoI (as of 30 September 2021).

This information, sourced from the Ministry of Corporate Affairs, reflects the dynamic growth and regional focus of farmer collectivization efforts in Maharashtra. Understanding this distribution is critical for designing targeted interventions, capacity-building programs<sup>[10, 11]</sup>, and infrastructure support, particularly in underrepresented divisions such as Konkan and Nagpur.

Objectives of the Study are as follows:

1. To study how Maharashtra's FPCs contribute to the development of an alternative soybean value chain.
2. To study the Comparative Marketing Efficiency of different marketing channels with and without FPCs with reference to Soybean marketing in Maharashtra.
3. To identify the factors influencing the level of efficiency and level of effectiveness of Soybean marketing with and without FPCs.

## 2. Literature Review

Mathew Abraham<sup>[1]</sup> says in 'New Cooperatives: A study of emerging producer organizations in India' These days, Producer Organizational Formats (POFs) including Farmers Federations (FFs), Producer Companies

(PCs), and Joint Liability Groups (JLGs) have stepped in to try and solve some of the issues small farmers confront. Despite the fact that this new cooperative's strategy is acknowledged to be effective in addressing the obstacles faced by small producers, POF has not received much support or promotion in India because of a lack of knowledge about its operational impact and potential advancement. The primary driving force for this study is the knowledge gap.

Agarwal<sup>[4]</sup> demonstrated that there is a significant opportunity to increase farmers' income and agricultural output through cooperative farming, particularly through bottom-up agricultural production collectives.

Banaszak<sup>[6]</sup> investigated Polish agricultural producer organizations and came to the conclusion that it was critical to examine the nature of collective actions in their governance dimension in addition to analyzing the groups' economic and market circumstances.

According to Jayashree Bhosale<sup>[7]</sup>, FPCs assist in pooling resources and produce for marketing. Approximately 1,000 young farmer-owned businesses generating a few crore rupees in revenue through direct marketing and exporting are being established by corporate India. Currently, FPCs in Maharashtra are also involved in the direct marketing and exportation of their agricultural products.

Dahiya, S.<sup>[10]</sup> carried out research by examining how farmer-producer companies (FPCs) support agripreneurs in Haryana, India, using a mixed-methods approach that included data on market access, financial performance, and FPC-related policies. The digital platform known as the Electronic National Agriculture Market (eNAM) directly enhances income stability by 18%, and FPC members demonstrate an increase in income stability of 25% to 35%. Notwithstanding these benefits, ongoing issues include cost constraints, regulatory obstacles, and technological naivete. To help them, specific policy measures are required, such as regulatory simplification, financial support system accessibility, and initiatives that increase FPCs' capacity for long-term viability.

An analytical study by Deshmukh<sup>[11]</sup> shows that the FPOs gather primary producers, mainly small and marginal farmers, to pursue shared interests and form legal companies (FPCs). This collectivization addresses agricultural challenges like market access, input quality, technology adoption, logistics, and public investment. Registered under the Company Act, 1956, FPCs are suitable for empowering farmers and enhancing their production and marketing strength, combining private company management with cooperative benefits.

Deshpande<sup>[12]</sup> provides an in-depth analysis of the opportunities and obstacles within India's agricultural value chains. It would explore factors driving growth, such as increasing demand and policy support, alongside challenges including infrastructure gaps, market imperfections, and issues related to the integration of smallholder farmers.

Deshpande<sup>[13]</sup> provides a comprehensive overview of India's agricultural sector, presenting key statistics, trends, and policy developments. It critically examines the challenges faced by Indian agriculture, including issues related to productivity, income, market access, and sustainability, often highlighting the need for structural reforms and enhanced public investment.

Dukpa and Ezung<sup>[14]</sup> analyze the efficiency of vegetable marketing channels in the Phek District of Nagaland. It likely evaluates the costs, margins, and price spread across different marketing routes for vegetables, aiming to identify inefficiencies and suggest strategies to

improve the producer's share of the consumer rupee and overall market performance in the region.

EY, ASSOCHAM<sup>[15]</sup> focuses on strategies to strengthen the linkages between the agricultural sector ("farm") and the industrial processing ("industry") sector through value chain empowerment. It likely proposes mechanisms for enhancing collaboration, improving efficiency, fostering innovation, and increasing value addition within agricultural supply chains to benefit both farmers and industrial players.

Govil et al.<sup>[16]</sup> provide an analytical review of Farmer Producer Companies (FPCs) in India, tracing their evolution, examining their current operational models, and discussing their future potential. It likely assesses the impact of FPCs on farmer livelihoods, collective action, and market integration, while also identifying key challenges and policy imperatives for their sustainable growth.

According to Gummagolmath<sup>[17]</sup>, the Indian agricultural sector has shown impressive growth over the past three decades; however, the per capita income of farmers remains the lowest across all sectors. A major constraint is the diminishing size of landholdings, with over 85% of farmers being small and marginal (2015 census).

According to IFAD<sup>[18]</sup>, farmers face challenges such as a lack of economies of scale, limited access to information, and an inability to influence price discovery. Aggregating smallholders into groups is seen as a solution to achieve economies of scale. Various institutional interventions, including cooperatives and self-help groups, have had limited success.

ILO<sup>[19]</sup> briefing paper highlights the crucial role of cooperatives and business associations in fostering inclusive and efficient agricultural value chains. These organizations are vital for empowering smallholder farmers and enterprises by fostering trust, enhancing market connections, and mitigating conflicts. They enhance market access by facilitating the provision of essential inputs, production services, market information, credit, and logistics.

Kandeeban and Prabhavathi<sup>[20]</sup> indicate that FPC channels demonstrated higher marketing efficiency and a greater producer share in the consumer's rupee com-

pared to traditional farmer channels, primarily due to reduced transaction costs.

Karami and Rezaei-Moghaddam<sup>[21]</sup> evaluated the performance of agricultural cooperatives using a Likert scale. The findings demonstrate that by using environmentally friendly agricultural methods, the MVIWATA organization in Arusha, Tanzania, has increased food security and their revenues. Eighty percent of the small farmers and livestock producers in this organization were women.

Kohls and Uhl's<sup>[22]</sup> "Marketing of Agricultural Products" (7th ed.) serves as a foundational text, likely providing comprehensive principles and theories of agricultural marketing that underpin many subsequent studies. This classic work would cover core concepts such as market functions, institutions, and the flow of agricultural products from producers to consumers.

Kriesberg's<sup>[23]</sup> work on "Marketing Efficiency in Developing Countries" highlights early concerns regarding the effectiveness of agricultural marketing systems in emerging economies. This piece likely addresses the unique challenges faced by developing countries, such as infrastructure deficiencies, information asymmetry, and fragmented markets, which hinder the efficient trade of agricultural products.

Kumar et al.<sup>[24]</sup> examine the marketing efficiency of different marketing channels for the mustard crop in the Swai Madhopur District of Rajasthan. This study aims to provide empirical evidence on how various distribution routes affect the profitability of farmers and the overall efficiency of the market for a specific crop in a particular region of India.

Kumar et al.<sup>[25]</sup> explore the role of cooperatives in improving the livelihood of farmers on a sustainable basis. This research likely investigates how farmer cooperatives can empower smallholders by facilitating collective bargaining, providing access to inputs and credit, and streamlining market access, thereby contributing to enhanced and sustainable incomes for farmers.

The National Institute of Agricultural Extension Management (MANAGE)<sup>[26]</sup>, in its 2013 "Training programme on linking farmers to markets," provides practical guidance and reading material. This suggests a focus on actionable strategies and best practices for connect-

ing farmers to various market opportunities, bridging the gap between agricultural production and consumer demand.

Finally, the Ministry of Agriculture and Farmers' Welfare's<sup>[27]</sup> "Report of the committee on doubling farmers' income – post-production interventions: Agricultural marketing" signifies a high-level governmental focus on improving agricultural marketing as a key strategy for enhancing farmer incomes. This comprehensive report likely outlines policy recommendations, strategies, and interventions aimed at optimizing post-production processes, including market infrastructure development, value addition, and direct market linkages, to achieve the ambitious goal of doubling farmers' income.

Mponda et al.<sup>[28]</sup> have concentrated on six districts in Tanzania's southern regions and identified the important players in the pigeon pea value chain and outlined their roles and responsibilities. Additionally, local dry gram sales, fresh product sales as vegetables, retention and sale as seeds, and local processing of Dal exports were explored, as was bulking for shipment to India.

Pant<sup>[29]</sup> highlighted that Nepalese farmers, despite receiving a larger proportion of the retail price, provide minimal marketing services themselves due to financial constraints and a lack of storage facilities, often selling their produce, such as paddy, at the earliest opportunity. This suggests that the report offers insights into the efficiency of agricultural marketing systems and the challenges faced by farmers in accessing better market services and value-added opportunities.

Praveen's<sup>[30]</sup> study shows that among marginal and small farmers, there are more women and members of Scheduled Castes (SC) and Scheduled Tribes (ST). Marketing their goods is the biggest challenge for these farmers. Contract farming agreements have been made in recent years for a variety of crops, including potatoes, gherkins, baby corn, roses, medicinal plants, and chillies. One of the biggest issues facing small farmers is price variance, as there is a significant discrepancy between what farmers are paid and what consumers actually pay. The literature suggests that small and marginal farmers may employ a range of approaches for collective marketing to achieve higher pricing. SHGs, the cooperative

model, small producer co-ops, and contract farming are a few of the alternatives.

Reddy<sup>[31]</sup> stated fundamental concepts of value chain analysis, delved into the dynamic nature of these chains, and included case studies of various dryland agricultural commodities. It highlights the shifting consumer demand towards high-value and ready-to-cook products, while also acknowledging the price-consciousness of the rural population. The authors emphasize the need for a "plate to plough" demand-driven approach in agricultural policy, underscoring the importance of skill development, improved market integration, efficient storage, and robust financing mechanisms to enhance the sustainability and profitability of agricultural value chains.

Sawairam<sup>[32]</sup> highlighted the benefits of using the company to market the excess production of the participating farmers because it provided the knowledge needed to generate excess locally and maintain relationships with the target markets. Following economic reforms centred on the liberation, privatization, and globalization (LPG) agenda, small and marginal farmers encountered several challenges.

Shepherd et al.<sup>[33]</sup> indicated that commodity associations and chain roundtables do play a significant role in policy formulation and are welcomed by both policy-makers and administrators who deal with a single association. It also shows that these chains minimize the ad hoc nature of some decisions by providing a focal point for policy discussion. Associations and chain participants communicate with one another in ways that could not have otherwise occurred.

Shiferaw et al.<sup>[34]</sup> highlighted that this study discusses the imperfect markets of smallholder agriculture, along with institutional innovations aimed at improving rural market performance. This case study illustrates the possibilities and limitations of rural institutions in delivering market services in eastern Kenya. The study's data analysis reveals possible causes and marketing results of the disparities in marketing groups' success with regard to marketing and other specified functions.

Singh<sup>[35]</sup> says to take advantage of economies of scale, farmers in Maharashtra must be grouped together into FPCs, which assist in lowering transaction costs and

offer a platform for members to exchange information, plan events, and reach decisions as a group.

Solanki et al.<sup>[36]</sup> studied the economics of soybean farming and related marketing trends. The study aimed to analyze the cost-return structure, resource usage efficiency, and marketing practices of soybean producers across a range of farm sizes. According to the survey, all categories showed profitability, with medium and large farmers reporting a benefit-cost ratio of about 1.74 and small farmers reporting a slightly higher ratio of 1.76.

Torero<sup>[37]</sup> in a contribution to "The IFAD Conference, New Directions for Smallholder Agriculture," outlines a framework for effectively linking small farmers to markets. The paper emphasizes that successful market integration for smallholders requires addressing a multitude of factors beyond just production. It highlights the importance of understanding and mitigating supply chain risks, from input procurement and post-harvest handling to adherence to quality, quantity, and traceability standards demanded by formal, high-value markets.

Trebbin and Hassler<sup>[38]</sup> highlight the benefits of FPCs using Maharashtra as a case study. According to the authors, FPCs have received very little government backing in India. They also emphasize that FPCs empower farmers by giving them the authority to make the most significant choices for their organizations. According to the study, organization and group efforts could help farmers become more competitive and get a bigger edge in new market prospects in an atmosphere of increased instability and competition.

Trienekens<sup>[39]</sup> emphasizes the importance of information flow, power relationships, and governance frameworks in determining the inclusion and performance of value chains. To create successful interventions that improve efficiency, equity, and sustainability within these value chains, the framework emphasizes the importance of understanding the unique context of developing economies, including institutional flaws, market imperfections, and the predominance of smallholder farmers.

Verma et al.<sup>[40]</sup> examine how Farmer Producer Organizations (FPOs) benefit their members in Bihar, India. According to the survey-based study of both FPO members and non-members, FPO participation has a

favourable and significant impact on the adoption of GAPs and new technologies. The study highlights significant obstacles, despite FPOs having considerable potential to increase market penetration, strengthen their negotiating position, and provide smallholder farmers with access to loans and inputs. Significant barriers to the best possible performance and long-term sustainability of FPOs in the area are noted to include limited access to financing and a deficiency of strong monitoring and assessment systems.

## 2.1. Research Gap

While existing literature broadly acknowledges the benefits of FPCs in enhancing market access and farmer income a critical research gap remains in the detailed, crop-specific analysis of their role in creating efficient marketing channels. Studies often lack granular insights into how FPCs optimize the value chain for particular commodities, such as soybeans, within specific regional contexts like Maharashtra. This study directly addresses this by conducting a Marketing Efficiency Analysis. This involves mapping diverse marketing channels for soybean, meticulously analyzing associated costs and margins, calculating the farmer's share in the consumer rupee, and quantitatively comparing the efficiency of FPC-led channels against traditional market pathways. This focused approach provides crucial empirical evidence, previously missing, on the tangible impact of FPCs in streamlining agricultural marketing for a key crop in a significant agricultural state.

## 3. Research Methodology

A descriptive research design was used to attain the objectives of this study. Maharashtra is the second most populous state in India and the third-largest by area, with 307,713 km<sup>2</sup> (118,809 sq. mi.). Agriculture is its major revenue source. As the second-largest oilseed in India after groundnuts, soybeans have become one of the major commercial crops in several states. The basic data for this study came from market officials and soybean producers in Maharashtra's soybean-growing region. Research on the relative marketing effectiveness of various marketing channels has been attempted.

Surveys were conducted at the research locations to collect primary data. Given the descriptive nature of the study, the technical aspects of scheduling, sampling, and interviewing the respondents—FPCs—were given the weight they deserved. Records kept by a number of organizations, including NABARD, SFAC, MCA, and Producer Organizations Promoting Institutions (POPI), were used to gather secondary data. In addition to these, the websites of various departments and institutions, as well as periodicals, journals, books, and papers, were consulted. A total 20 FPCs (four FPCs each from five major soybean producing districts) have been selected for the study.

This involves a comprehensive sample of 100 respondents, comprising 40 FPC member farmers (two from each of the selected FPOs), 40 FPC non-member farmers from the same villages, and crucially, 20 value chain stakeholders, including traders and processors. This focused approach provides crucial empirical evidence, previously missing, on the tangible impact of FPCs in streamlining agricultural marketing for a key crop in a significant agricultural state. Major Demographic characteristics i.e., Age Group (in Years), Gender, Education Level, Years of Farming Exp., Farm & Production, Landholding Size (Acres), Area under Soybean (Acres), Soybean Production (Quintals/Year) and Access to Irrigation has been considered along with Economic & Value chain specific Indicators i.e., Annual Household Income (₹), Main Income Source, FPC Specifics (for members), Years of FPO Membership, Reason for Joining FPO has been taken in consideration. Based on soybean production and the presence of FPCs, Latur, Osmanabad, Buldhana, Nanded, and Washim were purposefully chosen for the study out of 36 districts in Maharashtra. Four FPCs were selected for the study from each of the chosen districts. Twenty FPCs were present in total. FPCs with over two years of experience in soybean production and marketing were chosen for the study. One responder was randomly selected for each FPC. Two more farmers, who are FPO members and operate in each of these FPCs' operating areas, were conveniently chosen to show the problems that these FPCs encounter. To eliminate the issue of extreme variables and outliers, approximately forty non-member farmers were selected

in the same proportion to ensure that each category included the same type of farmer in terms of cropping patterns, land ownership, and other relevant criteria.

This study is restricted to the state of Maharashtra, which produces 3.07 million tons of soybeans annually, ranking second in India<sup>[37]</sup>, over an area of 3.8 million hectares. In the state of Maharashtra, the districts of Latur, Osmanabad, Buldhana, Nanded, and Washim are important producers of soybeans. By giving farmers the ability to bargain for better prices, access resources and information<sup>[14, 21]</sup>, cut expenses<sup>[23]</sup>, and represent their interests, FPCs are essential to enhancing their collective bargaining power. FPCs can help farmers in spread their risk by diversifying the types of crops they plant and the markets they access. In a state like Maharashtra, which is prone to weather-related issues, this can be particularly crucial.

## 4. Empirical Analysis

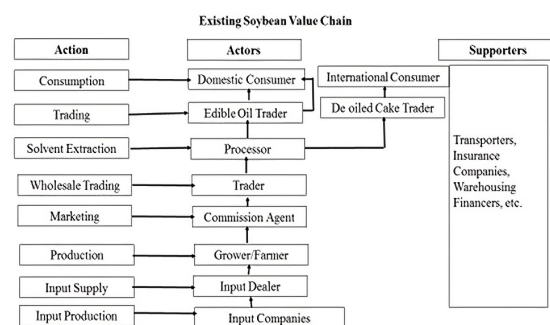
The study conducted by Pant<sup>[29]</sup> highlights information about opportunities for buyers and sellers to complete deals with the lowest possible transaction costs. The producer's share of the consumer rupee, marketing expenses, marketing margins<sup>[24, 35]</sup>, and marketing efficiency<sup>[19, 20]</sup> have all been covered in this study. Only a small percentage of the study's numerous marketing channels were effectively functioning. **Figure 1** shows the Traditional and Alternative Marketing Channel of Soyabeans.

Given that the majority of the produce was designed to travel through channels I and II. For the thorough examination of marketing expenses and margins, only these two channels have been considered. Acharya and Agarwal's method was used to determine the marketing efficacy of the several marketing channels considered in the study [Equation (1)].

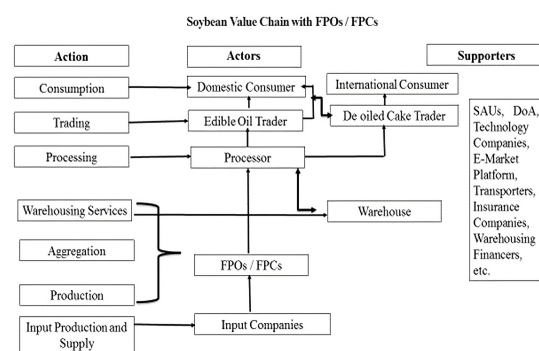
$$ME = FP / (MC + MM) \quad (1)$$

(Where,  $ME$  = Marketing Efficiency;  $FP$  = Farmers Price;  $MC$  = Marketing Costs;  $MM$  = Marketing Margins)

### I Traditional Channel - Farmers to consumers via agents, traders and processors



### II Alternative Channel - Farmers to consumers via Producer Companies



**Figure 1.** Traditional and alternative marketing channel.

Source: Field survey.

The data presented in **Table 2** are averages from the survey. Marketing costs refer to all expenses incurred in the process of moving an agricultural commodity (such as soybeans) from the point of production (farm gate) to the final consumer or end-user (e.g., a processor for soybeans). These are the real resources consumed or spent to perform various marketing functions. As shown in **Table 2**, the overall cost of selling soybeans in channel I was Rs. 2,155 per quintal, while in channel II, the cost was Rs. 1,935 per quintal. It suggests that farmers who disposed of their produce independently paid comparatively higher prices than farmers who were FPO shareholders. When comparing the overall marketing expenses paid by various middlemen in the soybean industry, the processor experienced the highest expenditures, followed by retailers, traders, wholesalers, and commission agents. Furthermore, it was discovered that the processors were responsible for half of the overall marketing expenses.



**Table 2.** Analysis of marketing costs under different channels in the marketing of soybeans

Total Marketing Cost					
Sr. No.	Value Chain Stakeholders	Traditional Marketing (Channel I)		Alternative Marketing with FPCs (Channel II)	
		Amount (Rs/q)	Percentage	Amount (Rs/q)	Percentage
1	Farmers	340	15.77	240	12.40
2	Commission Agent	180	08.35	00	00
3	FPC	00	00	60	3.10
4	Trader	185	07.42	185	9.56
5	Processor	1450	67.28	1450	74.93
	Total	2155	100	1935	100

Source: Field survey.

The values in **Table 3** (Amount (Rs/q) and Percentage) are averages derived from the survey data from the 100 respondents (farmers, traders, and processors). Marketing Margin is the difference between the price at which a marketing agent (intermediary) sells a product and the price at which they purchased it, for an equivalent quantity. It represents the gross income of that intermediary from handling the product. According to the marketing margin study shown in **Table 3**, the margins obtained from marketing soybeans through channel II (Rs. 600) were lower than those from channel I (Rs. 680). It suggests that market func-

tionaries' profit margins are reduced when farmers sell their produce to FPOs. With the exception of processors and merchants, the majority of those working in the soybean marketing industry made margins commensurate with their expenses. The margins made by processors, traders, wholesalers, and retailers in channel I are relatively lower than those in channel II when compared to the overall marketing margins. The marketing margin for processors is higher than that of other functionaries within the channel (55.88 percent in channel I and 63.33 percent in channel II, respectively).

**Table 3.** Analysis of marketing margin under different channels in the marketing of soybeans.

Total Marketing Cost					
Sr. No.	Value Chain Stakeholders	Traditional Marketing (Channel I)		Alternative Marketing FPCs (Channel II)	
		Amount (Rs/q)	Percentage	Amount (Rs/q)	Percentage
1	Farmers	00	00	00	00
2	Commission Agent	160	23.52	00	00
3	Farmer Producer Company	00	00	80	13.33
4	Trader	140	20.58	140	23.33
5	Processor	380	55.88	380	63.33
	Total	680	100	600	100

Source: Field survey.

**Table 4** presents the price spreads under two major channels in the marketing of soybeans: channel I (Traditional marketing via commission agents, traders, and processors) and channel II (Alternative Marketing Channel with FPCs). The price spread for channel I was 2495 (36.18 percent), greater than that of channel

II, which was 2395 (34.73 percent). Price spread was found to be lower in channel II, where producers approached the market directly through FPO, than in channel I, where farmers marketed their produce. This is because price spread is directly proportional to the number of intermediaries involved in the marketing process.

**Table 4.** Price spread and producer's share in the consumer's rupee under different channels in the marketing of soybeans.

Sr. No.	Particulars	Traditional Marketing (Channel I)		Alternative Marketing with FPCs (Channel II)	
		Amount	Percentage	Amount	Percentage
1	Farmers' net price	4400	63.81	4500	65.26
2	Farmers' market price	4740	68.74	4740	68.74
3	Commission agent's selling price	4740	68.74	00	00
4	FPC's selling price	00	00	4740	68.74
5	Trader's selling price	5065	73.45	5065	73.45
6	Processor's selling price	6895	100	6895	100
7	Price spread (in %)	2495	36.18	2395	34.73
8	Producer's share in Consumer's Rs. (in %)	63.81		65.26	

Source: Field survey.

**Table 5.** Indices of marketing efficiency in the selected marketing channels.

Sr.No.	Particulars	Traditional Marketing via Traders and Processors (Channel I)	Alternative Marketing with FPCs (Channel II)
1	Farmer's Price (Rs/q)	4400	4500
2	Total Marketing costs + Total Marketing margins (MC + MM)	2835	2535
3	Marketing Efficiency Index	1.55	1.77

**Note:** Acharya's method was used to calculate the marketing efficiency, and the results are shown in Table 5. Channel I had a marketing efficiency of 1.55, whereas Channel II had a marketing efficiency of 1.77. Channel II is implied to be more effective than channel I.

## 5. Discussion

Channel I had a higher total marketing cost and marketing margin (2835/q) than Channel II (2535/q). This suggests that compared to other channels with fewer intermediaries, the marketing efficiency of the current route decreases as the number of intermediaries increases. Additionally, the FPO grades the produce; farmers in channel II receive a price that is somewhat higher than those in channel I<sup>[21, 24]</sup>. Channel II's marketing margin is higher than Channel I's because farmers obtain a better price and there are fewer marketing expenses<sup>[24]</sup>. Farmers are sometimes taken advantage of by market middlemen even when they take all the risks to arrange for direct sales of their produce. In channel II, the Farmer's share of the consumer's rupee (65.26%) was higher than in channel I (63.81%). In channel II, the producer's share of the consumer's rupee is 65.26 percent, meaning that the farmer or producer earned roughly 65 percent of the consumer price. In channel I, however, the producer's share was only 63.81 percent, meaning that the farmer received roughly 63 percent of the consumer's purchase price. In comparison to channel II, the producer's share of the consumer rupee has declined because channel I has more market functionar-

ies<sup>[19]</sup>. By avoiding the abuse of middlemen, the FPC channel helps farmers to have a larger share of the consumer rupee<sup>[24]</sup>.

### Comparative observations -

- Marketing Costs:** Channel II has a lower total cost of selling soybeans (Rs. 1935 per quintal) than Channel I (Rs. 2155 per quintal)<sup>[24, 35]</sup>. This suggests that farmers who use the FPO route spend less on marketing.
- Middlemen's Marketing Costs:** In both channels, processors incur the highest marketing costs<sup>[24, 35]</sup>. However, only the relative order inside each channel is compared in the provided text, not the absolute costs of each middleman between the two.
- Marketing Margins:** Compared to those in the conventional farmer's marketing channel (Channel I), officials working under the FPO channel (Channel II) preserve somewhat higher margins on an individual basis<sup>[24, 35]</sup>. Nevertheless, Channel II's overall marketing margin (Rs. 600) is lower than Channel I's (Rs. 680) for all functionalities<sup>[24, 35]</sup>. This suggests that although the profit margins of individual FPO channel partici-

pants may be higher, the marketing system's overall "cut" is lower.

4. **Margins of Particular Functionaries:** Most functionaries in the soybean marketing sector made margins that were in line with their costs, with the exception of processors and merchants. It's interesting to note that, when comparing the entire marketing margins, Channel I have comparatively lower profits for processors, traders, wholesalers, and retailers than Channel II. But within each channel, the processor's margin is the biggest (55.88% in Channel I and 63.33% in Channel II)<sup>[24, 35]</sup>.
5. **Price Spread:** Channel I have a larger price spread (2495, or 36.18%) than Channel II (2395, or 34.73%), which is the difference between the producer's price and the consumer's price<sup>[24, 35]</sup>. FPOs' direct market access, which eliminates the need for middlemen, is responsible for Channel II's smaller pricing spread<sup>[17, 21]</sup>.
6. **Marketing Efficiency:** According to Acharya's method, Channel II has a better marketing efficiency (1.77) compared to Channel I (1.55). This shows that Channel II is more effective at turning marketing expenses into benefits for all parties<sup>[24]</sup>.

Individual employees in the FPO-based Channel II may have higher profit margins, but the channel as a whole provides a more economical and effective way to market soybeans, which lessens the farmer's total burden and the consumer's price spread<sup>[21, 28]</sup>. This demonstrates how FPOs can simplify agricultural marketing and increase productivity<sup>[24]</sup>. An intriguing dynamic is presented by the discovery that while the total marketing margin is smaller, individual officials in the FPO channel have better margins than in the traditional channel<sup>[24, 35]</sup>. This might indicate that the FPO structure's profits are distributed more fairly or that improved individual margins are made possible by the enhanced efficiency without raising the final price. It would be helpful to conduct an additional study comparing the absolute margin values and the number of intermediaries in each channel. Acharya and Agarwal's method for calculating marketing efficiency is used in this study<sup>[2]</sup>. Although

this is an established method, other research may use various methodologies, such as value-addition methods or Shepherd's formula. A more thorough understanding of marketing efficiency may be acquired by comparing the outcomes of several studies employing distinct approaches.

## 6. Conclusion

It was determined that farmers benefited from Farmer Producers Companies (FPCs). FPC channels have lower price spreads, marketing costs and marketing margins than non-FPC channels. Compared to non-FPC channels, FPC channels have higher marketing efficiency and a larger producer share of consumer rupees. Compared to non-FPC channels, FPC marketing channels yield greater benefits. FPC and non-FPC marketing channels have corresponding market efficiencies of 1.77 and 1.55. The price difference between the FPC and non-FPC marketing channels is 34.73 and 36.18 percent, respectively. The producer's share in the FPC and non-FPC consumer rupee channels was 65.26 and 63.81 percent, respectively. The FPC marketing channel's market margin and marketing expenses are lower than those of the non-FPC marketing channel. The results of this study showed that the FPC channel was more profitable and relevant to farmers. FPCs have been a useful tool for addressing the following issues that farmers encounter while trying to sell their produce.

1. **Market Access:** Farmers can reach bigger and more profitable markets with the aid of FPCs. They frequently have superior logistics and infrastructure for efficiently delivering produce to cities and other areas with high demand. Farmers now have the chance to connect with a wider range of consumers.
2. **Lower Post-Harvest Losses:** FPCs can invest in cold chains and storage facilities, among other post-harvest infrastructure. Farmers' income rises as a result of fewer post-harvest losses and a greater proportion of produce arriving at markets in acceptable condition.
3. **Value Addition:** A few FPCs participate in value-added tasks, such as packing and processing agri-

cultural goods. This gives the produce more value and creates additional avenues for commercialization, such as exporting.

## Author Contributions

Conceptualization, D.W. and B.D.; methodology, D.W.; formal analysis, D.W.; original draft preparation, D.W.; supervision, D.W.; software, B.D.; investigation, B.D.; writing—review, B.D.; editing, B.D.; resources, S.W.; data curation, S.W.; visualization, S.W.; project administration, S.W. All authors have read and agreed to the published version of the manuscript.

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## Institutional Review Board Statement

Not applicable.

## Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

## Data Availability Statement

The data presented in this study are openly available in Mendeley Data at <https://data.mendeley.com/drafts/ztp3vtcd9d>.

## Conflicts of Interest

The authors declare no conflict of interest.

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