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Performance and Economic Impacts of Farmer Producer Organizations (FPOs) in India: A Review

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Abstract

Small farmers' participation in FPOs is considered as one of the several pathways for their livelihood generation to make agricultural development inclusive and sustainable. In this context, an extensive review of the literature was carried out to examine the performance and economic impacts of FPOs in India. It was found that FPOs can provide market access and play a vital role in the livelihood generation of small farmers. However, most of the FPOs performed poorly due to a lack of mobilization of working capital, skilled managerial staff, and effective business plans. FPOs could not scale up their operations due to lack of matching grants from financial institutions. Therefore, FPOs must be made viable by expanding capacity building through financing by institutions and encouraging members to contribute more equity, not just the bare minimum required to continue membership. Creating sound business planning, pursuing innovative ideas (such as initiating custom hiring agricultural equipment), and taking on new responsibilities as market facilitators can help FPOs operate efficiently and sustainably.

Keywords: Challenges, Economic Impacts, Farmer Producer Organization, Producer Company

JEL Classification: Q10, Q12, Q13, Q16, Q18,

Introduction

Though the agricultural sector in India contributes about 18.4 percent to India's GVA, it continues to employ about 45.6% of the workforce (Chand, 2022). Dwindling farm sizes and the rise in small landholders have led to agricultural crises of varying degrees across different parts of India (Reddy *et al*., 2020). Small farmers continue to face imperfect markets for inputs and products, which result in lower returns; limited access to credit or imperfect credit systems, leading to poor investment choices; a lack of skilled labour; and insufficient access to extension services, which restrict their ability to make informed decisions about farming practices and technology. Their problems are further compounded due to limited access to vital public resources like irrigation, electricity, and land and water management systems (Dev, 2012). As a result, small landholding size fails to generate sufficient income through conventional farming practices and products (Chand, 2022). Collectivizing/uniting or mobilizing farmers into collectives is considered as a key solution to address the challenges faced by smallholder farmers. Historically, policymakers have made several efforts to promote collectivization, with cooperatives being the earliest model of aggregation. Although the cooperative movement dates back over a century, its success has been quite limited to a few regions and specific commodities, such as cooperative sugar factories and dairy cooperatives in Maharashtra and Gujarat (Gummagolmath *et al,* 2022). Farmer Producer Organizations (FPOs) have emerged as an innovative solution to address these limitations and provide a more inclusive approach to farmer collectivization.

The idea of FPOs was developed in the early 2000s (IDR, 2023). FPOs are legally recognized entities formed and operated by the farmers, encompassing a wide range of producers such as cultivators, fishers, dairy farmers, plantation growers, and others involved in primary agricultural production. These can register under laws such as the Cooperative Societies Act, Multi-State Cooperative Society Act, 2002, or as Producer Companies (Section 581(C) of the Companies Act, 1956, amended in 2013). They may also register as Section 8 Companies, under the Societies Registration Act, 1860, or the Indian Trusts Act, 1882 (Vahoniya *et al,* 2022). FPO undertakes a range of activities, including providing inputs, sharing market and technological insights, and enabling financial support for farmers. It also handles produce aggregation, storage, and primary processing, such as cleaning, drying, and grading,

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while maintaining strict quality standards. It enhances product appeal through branding, packaging, labeling, and standardization. By connecting farmers with institutional buyers, participating in commodity markets, and exploring export avenues, FPOs help farmers achieve better market access and maximize value (NABARD, 2015). Over the years, government institutions such as the National Bank for Agriculture and Rural Development (NABARD) and Small Farmers' Agri-Business Consortium (SFAC), private donors, and financial organizations have introduced various initiatives to help FPOs grow into successful business entities (ILRT, 2016). There are about 8875 registered FPOs in India (GOI, 2024). Considering the growing interest of the government in promoting and establishing new FPOs and their role in income generation among small producers, it becomes essential to understand the different dynamics of the existing FPOs in India to drive inclusive and sustainable growth in the agriculture sector. In this context, the review attempts to examine key aspects of FPOs in terms of the socio-economic profile of member farmers and the factors influencing their participation, the economic impacts of FPOs, key drivers of performance of FPOs, and challenges faced by members as well as FPOs from existing empirical evidence on different case studies on FPOs across India.

Data Sources and Methodology

The study was entirely based on a review of the research articles, which was complemented with the recent reports of government of India and other agencies involved in promotion of FPOs in India. The articles were identified and searched using different databases such as Google Scholar, Research Gate, Science Direct, Scopus, AgEcon Search, JSTOR, etc. The articles published on empirical studies and published in peer-reviewed journals having moderate to high impact factors were largely taken into consideration. Moreover, articles related only to FPOs in India were selected since the study was restricted to the performance and economic impacts of FPOs in India. Keywords such as "Farmer Producer Organization (FPO)", "Farmer Producer Company (FPC)", "Producer Company", "Challenges", "Performance Indicators", "Performance", "Impacts", "and Profile of FPO/ FPC members" were used in different combinations to search for the relevant literatures related to the study.

Results and Discussion

Performance of FPOs

Different economic and financial indicators affect the functioning and performance of FPOs, which determines long-term feasibility and sustainability. We have reviewed a few of the indicators that affect the performance of FPOs in India.One such study by Kakati and Roy (2022) on financial performance showed that the liquidity position of FPCs in India was above a satisfactory level from 2013 to 2019. As FPCs transitioned from debt to equity financing, their solvency position improved. Using a composite performance index for FPOs in Assam, Bhuyan *et al* (2024) showed that the majority of FPCs performed poorly on the index, highlighting areas for improvement to ensure their long-term sustainability. FPCs that performed better demonstrated strong organizational dynamics, participatory business models, market orientation, and capacity building efforts. However, management practices emerged as a common weakness among all FPCs, with most also facing challenges in convergence and benefit-sharing. Another comprehensive study across five leading states, Andhra Pradesh, Madhya Pradesh, Maharashtra, Telangana, and Uttar Pradesh, revealed that engagement in more activities led to higher profit margins due to greater value addition (Kumar *et al,* 2023). Further, Rani *et al* (2023), with a study in Maharashtra, Andhra Pradesh, West Bengal, and Gujarat, reported that well-performing FPOs had shown the presence of medium and large farmers, while the slow-performing FPOs mostly consisted of small farmers. While, Sharma (2013) argued that FPOs with a more diverse composition, including small and large farmers, tended to cultivate more decisive leadership. The accountability and fairness within the group were key drivers of cohesion and were critical for ensuring long-term sustainability.

While measuring the performance of FPOs in Andhra Pradesh, Prabhavathi *et al* (2024) examined the business competencies of FPO's managerial team and their correlation with financial performance.Compared to production-centric FPOs, 53% of FPOs were market-centric, demonstrating superior competencies in marketing, collaboration, technical operations, and negotiation. Despite poor profitability across all FPOs (<2%), market-centric FPOs showed superior liquidity, resource pooling, and asset utilization, but regulatory and organizing competencies were similar across both approaches. Padmanand *et al* (2017) pointed out that FPOs supported by Agriculture Business Promotion Facility (ABPF) had improved market access through direct selling channels. ABPF had established strategic partnerships with major players such as Walmart and Reliance Fresh, leading to increased profitability for FPOs by selling processed products. Singh (2023) argued that most of the FPOs suffered due to low turnover and profits, except for one thatobtained small profits due to its diverse activities and market linkages, including custom hiring and organic certification. In Odisha, better price realization by the member farmers and infrastructure were identified as critical success factors for the FPOs (Mahapatra, 2021). However, in West Bengal, Gorai *et al* (2022) identified group stability as a leading factor in distinguishing high-performing and low-performing FPOs. Members of high-performing FPOs reported greater mutual trust, role clarity, attachment, and satisfaction, indicating that strong interpersonal relationships contributed to group stability. In contrast, competition and conflict adversely impacted the stability of low-performing FPOs. Nikam *et al*

(2024), while evaluating the financial performance of FPOs reported that FPOs started with a solid liquidity position, which tended to decline over a few years. Many FPOs had high debt-to-equity ratios, indicating significant financial distress. The total expenses of FPOs were nearly equal to their gross income, highlighting challenges in achieving profitability. However, it was also observed by Rajpurohit *et al* (2024) that strong leadership in FPOs, a steady supply of raw materials at low costs and the adoption of digital modes of payment could drive FPOs toward success.

Socio-Economic Factors Affecting Farmer's Participation

There existed diversity in the socio-economic profile of the farmers who joined FPOs, which distinguished them from non-FPO farmers. In Nashik district of Maharashtra, average age of the member farmers was around 49 years with an average landholding of 1.86 hectares (Lalitha *et al,* 2024). In Sikkim, key socioeconomic factors influencing farmers' decisions to join FPOs were education level, farming experience, landholding size, internet access, proximity to markets, and plans for future expansion. Interestingly, easy access to transportation negatively impacted the decision to join, as farmers in well-connected areas might not feel the need for collective support from FPOs (Gurung and Choubey, 2023). In Gujarat, most of the FPO members were also small and marginal farmers, which helped bring the cohesion necessary for effective collective action (Bikkina *et al,* 2017). More educated farmers in Bihar were more likely to join FPOs, and there was no significant selection biasedness on caste, suggesting inclusivity. Additionally, access to loans and connections with formal extension services, like KVK and ATMA, enhanced membership likelihood (Roy *et al,* 2020). In West Bengal,member farmers were primarily male, had a lower illiteracy rate, and were slightly older on average than non-members. Moreover, FPC member households had a larger average family size than non-FPC households, though both consisted entirely of smallholders.Member farmers enjoyed a higher average family income than their non-FPC counterparts, highlighting the economic benefits of FPC membership (Singh, 2023; Das and Mandal, 2021). In Telengana, marginal farmers constituted the largest proportion of FPO members. It was also observed that members tended to be slightly more educated, but level of education did not act as a barrier for joining FPO. 32% of FPO members had off-farm income sources compared to non-members (17%), providing them with financial stability to manage risks and invest in new technologies (Manaswi *et al,* 2020). In Andhra Pradesh, older farmers tended to be more likely to join FPOs due to greater land ownership and resource availability. The greater the distance of farms to the market, the more farmers were likely to join FPOs(Vedasri and Mishra, 2021). In Haryana, membership in FPO was found to be inclusive in terms of participation of landless and small farmers, women and socially backward classes, thereby allowing a wide range of perspectives and experiences to contribute to its operations and decision-making processes (Kumar *et al,* 2021; Rajpurohit*et al,* 2024).

Economic Impacts on Farmers

It is also imperative to review the economic gains to member producers through their participation in FPOs to make such linkages effective and sustainable. In this context, Mouryaand Mehta (2021) argued about the positive influence of FPCs on the income of members as well as non-member farmers due to the backward and forward linkages facilitated by the FPCs, which resulted in reduced costs (during input purchases or transportation) and gradual accumulation of savings, thereby increasing their income. FPCs enabled farmers to negotiate better prices in the market, reducing their dependence on traditional, often exploitative, market systems and increasing their income. Non-members, however, were barred from the other facilities/advantages such as dividends, patronage bonuses, etc. In Andhra Pradesh, FPOs enhanced scientific orientation and awareness, improving knowledge and productivity and increasing income (Pujitha *et al,* 2024).These findings were also supported by another study in Andhra Pradesh by Kumar *et al* (2023), which highlighted the role of FPOs in enhancing the economic well-being of the smallholder farmers and reducing poverty among the member farmers compared to non-members. Yet another study in Andhra Pradesh identified different factors such as membership, hired labour, cropped area, share of crop sold, and size of the market that positively affected the income of the member of FPO (Vedasri and Mishra, 2021).In Chhattisgarh, Joshi and Choudhary(2018) argued that FPO participation contributed to farmers' social empowerment, with improvements in problem-solving skills, decision-making confidence, and societal recognition being top-ranked benefits, besides other economic benefits.In West Bengal, Das and Mandal (2021) pointed out that the average family income of the FPO members was higher than that of the non-members. Another study in West Bengal by Singh (2023) highlighted the role of PCs in enhancing farmers' market access, income, and input quality, particularly for small and marginal farmers. The study also reported a cropping pattern shift, an increase in yield resulting in marketable surplus, and higher prices after the intervention of PCs due to improved market access through the PCs. However, in Telengana, Manaswi *et al* (2020) noted that despite lower yields, organic cultivation, supported by FPOs, had enhanced farmers' access to niche markets and premium prices, thereby increasing their income.

Economic gains also accrued in remote and backward regions of India. For instance, Mahapatra *et al* (2023) observed in the tribal region of Odisha that FPOs offered better prices than the local traders even though the payments were delayed. In Meghalaya, there was an improvement in the livelihoods of the members due to the training programs offered by the FPO(Sharma *et al,* 2023).In Sikkim, Gurung *et al* (2023) reported a positive and significant impact on net returns, return on investment and profit margin across different farm size, among the organic farmers of FPOs. The gain in income of the farmers was also observed in allied agricultural enterprises such as dairying. In Himachal Pradesh, Thakur *et al* (2021) illustrated the role of dairy FPOs in increasing farmer's income by providing many doorstep input services, credit services, and extension and advisory services. FPO was found to offer higher milk prices than the state's milk federation. These findings were also corroborated by Kaur and Singla (2024), who reported that quality-based milk price mechanisms adopted by milk collectives such as cooperatives and PCs had led to higher income among member producers than non-members. Similar results were reported by Kumar *et al* (2021) while carrying out a case study on dairy-based FPC in Haryana. In Gujarat, Singh and Vatta (2019) pointed out that FPO membership significantly improved household's welfare by increasing income, consumption expenditure, and investment in productive assets while reducing indebtedness. Chopra *et al* (2024) added that FPOs had also contributed to a shift toward crop diversification in Punjab.

Challenges Faced by FPOs and Member Farmers

An examination of challenges confronted by FPOs and their members is also essential to bring corrective actions for the smooth functioning of FPOs and ensure inclusive participation of member producers. It was observed that FPOs suffered due to a lack of working capital and securing loans from financial institutions(Mourya and Mehta, 2021; Kumar *et al,* 2023).Although institutions like NABARD provided low-interest financing, many FPCs lacked the necessary business planning skills to effectively utilize the available funds (Das and Mandal, 2021).Additionally, delays in receiving matching grants from the Small Farmers' Agribusiness Consortium (SFAC) restricted financial resources (Venkattakumar *et al,* 2019). This affected their management and governance. As a result, FPOs failed to appoint CEOs and directors (Surendran-Padmaja and Ojha, 2023). While Joshi and Choudhary (2018) also argued that even if the FPOs could hire the managerial staff,limited professional skills anda lack of clear direction from the board of directors compounded the problems of FPOs. In Gujarat, this led to the absence of value addition in agricultural products and a formal system for pooling and selling produce.Limited capital also hampered the FPO's ability to extend credit to its farmer members, further hindering its growth (Bikkina *et al,* 2017). Lack of experience also affected FPOs that had diversified their activities (Kumar *et al,* 2023). FPOs also faced staffing shortages due to rural locations and financial constraints (Mourya and Mehta, 2021).

Mobilizing farmers and ensuring active participation was also a major concern, affecting the overall functioning of the FPO (Kumar *et al,* 2023). Marginal farmers often struggled with FPOs due to a lack of surplus and the burden of membership fees. It was also observed that joining an FPO might increase their risks by pressuring them to focus on market-oriented farming instead of securing food for their families. Similarly, women-led or exclusively female FPOs faced challenges as social norms often preventedthemfrom owning farm assets or making independent decisions (Sharma, 2013).Small and marginal farmers, who made up most members, depended on credit for inputs, but crop failures could lead to defaults. As a result, FPO profits remained minimal and FPO faced financial instability (Mourya and Mehta, 2021).Lack of product differentiation posed marketing challenges and competition for FPOs(Kumar *et al,* 2023). Additionally, poor marketing strategies, weak business plans, and high marketing costs further hindered their growth and sustainability (Joshi and Choudhary, 2018).

On the other hand, farmer members of FPOs faced several constraints in the production, marketing, and value chains of agricultural products.It was argued that FPOs were ineffective in bridging the gap between farm and market prices, which limited their bargaining power. Although there was improved access to inputs, only a small fraction of farmers received guidance on the proper application of fertilizers and pesticides. Additionally, post-harvest operations, such as grading and storing, did not show much improvement after joining a FPO. Despite the intention to enhance credit access through establishing FPOs, evidence from Bihar revealed no significant advancements, with many members still facing credit constraints. While some farmers in Maharashtra reported higher prices for their produce, the overall percentage remained low, reflecting the limited effectiveness of FPOs in achieving better pricing (Roy *et al,* 2020). Similarly, in Andhra Pradesh, insufficient storage and processing infrastructure, deficient technical skills among workers in harvesting and processing, low awareness about grading and packaging, inadequate information dissemination about FPOs, lack of updated market intelligence, remote markets, and high transportation costs were identified as the significant constraints faced by the member farmers (Prasanna and Mazhar,2022). This restricted farmers' market access (Nikam *et al,* 2024). In the tribal region of Odhisa, delayed payments were a major problem that compelled the farmers to sell to local traders for immediate cash. Inconsistent input supply, communication gap between office bearers and members, infrequent group meetings, and low participation hindered effective functioning. The lack of team cohesion among farmers further limits the potential benefits of collective action (Mahapatra, 2021). In West Bengal, price fluctuation was identified as a primary challenge. FPC farmers, who produced larger volumes, also faced significant difficulties with inadequate storage, high transport costs, and limited opportunities for value addition and processing (Das and Mandal, 2021).

Conclusion and Policy Implications

A review of extant literature on the performance and economic impacts of FPOs reveals that much diversity existed across regions and among FPOs in terms of their operations and impacts on primary producers. It was observed that FPOs has the ability to provide market access to small producers and assist in their livelihood generation even in the backward and tribal areas of India. However, most of the FPOs were also found to perform poorly on various financial indices due to a lack of mobilization of working capital, skilled managerial staff, and effective business plans. Poor performance of the FPOs could also be seen from their inability to diversify their activities, less participation of small producers and high transaction costs due to lack of adequate post-harvest infrastructure. It was also observed that a few FPOs in allied agricultural enterprises, such as dairying, were quite successful in the income enhancement of member producers. Most FPOs could not scale up their operations due to a lack of matching grants from different financial institutions. Therefore, it is imperative to make FPOs sustainable by encouraging members to contribute more equity, not just the minimum, for maintaining membership (Singh, 2023), and providing matching grants from financial institutions to enlarge their capacity building.Lastly, forming good business plans, identifying new activities (such as custom hiring of farm machinery), and identifying new roles as facilitators in the market can make the functioning of FPOs effective and sustainable.

References

Bhuyan R, Das B and Khound S 2024. Understanding farmer producer company (FPC) ecosystem in Assam: issues and challenges. *Journal of Asian and African Studies* **59**: 692-703. https://doi.org/10.1177/00219096221120921

Bikkina N, Turaga R M R and Bhamoriya V 2017. Farmer producer organizations as farmer collectives: a case study from India. *Development Policy Review* **36**: 669-687. https://doi.org/10.1111/dpr.12274

Chand R 2022. *Agricultural challenges and policies for the 21st century*. NABARD Research and Policy Series No. 06/2022, Mumbai. https://www.nabard.org/auth/writereaddata/tender/1507223654Paper-6-Agri-Challenges-and-Policies-Dr.Chand.pdf

Chopra S, Sekhon M K and Kaur A 2024. What drives farmer producer organizations (FPOs) towards success or failure in Punjab: evidence and implications. *Indian Journal of Economics and Development* **20**: 329-335.http://dx.doi.org/10.35716/IJED-24083

Das R and Mandal S 2021.Determinants of smallholders' participation in farmer producer companies–insights from West Bengal, India. *Decision* **48**: 327-342. https://doi.org/10.1007/s40622-021-00287-5

Dev S M 2012. *Small farmers in India: challenges and opportunities*. Indira Gandhi Institute of Development Research, Mumbai. http://www.igidr.ac.in/pdf/publication/WP-2012-014.pdf

Gorai S K, Wason M, Padaria R N, Rao D U M and Paul R K 2022. Factors contributing to the stability of the farmer producer organisations: a study in West Bengal. *Indian Journal of Extension Education* **58**: 91-96.http://doi.org/10.48165/IJEE.2022.58218

Government of India (GOI) 2024. *Functioning of farmers producer organizations (FPOs)*. Rajya Sabha,Unstarred Question No- 1309, Ministry of Agriculture and Farmers Welfare.

Gummagolmath K C, Valamannavar S, Darekar A and Ramya L S 2022. *Role of farmer producer organizations in empowering farmers-case studies from India*. National Institute of Agricultural Extension Management (MANAGE), Hyderabad.

Gurung R and Choubey M 2023. Determinants of agricultural households to join farmer producer organisations (FPOs) in northeast India: evidence from Sikkim. *International Journal of Social Economics* **50**: 465-477. https://doi.org/10.1108/IJSE-04-2022-0216

Gurung R, Choubey M and Rai R 2024. Economic impact of farmer producer organisation (FPO) membership: empirical evidence from India. *International Journal of Social Economics* **51**: 1015-1028.https://doi.org/10.1108/IJSE-06-2023-0451

IDR 2023. *India Development Review.* https://idronline.org/features/idr-explains/idr-explains-farmer-producer-organisations-fpos/

ILRT 2016. *Farmers' producer organizations in India*. Institute of Livelihood Research and Training, Hyderabad. https://www.nafpo.in/wp-content/uploads/2019/05/ILRT-FPO-Study-Report-Final-Feb-2016.pdf

Joshi S K and Choudhary V K 2018. Performance of farmer producer organisations (FPOs) in different regions of Chhattisgarh state: a case study. *Indian Journal of Agricultural Economics* **73**: 399-406.

Kakati S and Roy A 2022. Financial performance of farmer producer companies of India: a study from 2013–2014 to 2018–2019. *International Journal of Rural Management* **18**: 410-428.https://doi.org/10.1177/09730052211034700

Kaur M and Singla N 2024. Comparative performance of cooperatives and producer companies in member producer's income enhancement: a case study of the milk sector in Indian Punjab. *Millennial Asia* **15**: 138-159.https://doi.org/10.1177/09763996221091654

Kumar S, Kumar R, Meena P C and Kumar A 2023.Determinants of performance and constraints faced by farmer producer organizations (FPOs) in India.*Indian Journal of Extension Education* **59**: 1-5.

Kumar S, Meena D K and Meena V S 2021. A case study of dairy-based farmer producer company in Haryana: collective action approach for enhancing farmer income. *Asian Journal of Agricultural Extension, Economics & Sociology*

39: 78-87.http://doi.org/10.48165/IJEE.2023.59201

Lalitha N, Viswanathan P K and Vinayan S 2024. Institutional strengthening of farmer producer organisations and empowerment of small farmers in India: evidence from a case study in Maharashtra. *Millennial Asia* **15:** 278-299. https://doi.org/10.1177/09763996221098216

Mahapatra A 2021. Farmer producer organization led extension approach for organic turmeric farming in tribal region of Odisha: the case of KASAM, Ph.D. Thesis, Submitted to Division of Agricultural Extension, Indian Agricultural Research Institute, New Delhi.

Mahapatra A, Nikam V, Ray M, Paul S and Mahra G S 2023. Farmer producer organization for turmeric growers in tribal region of Odisha: success factors and constraints. *Indian Research Journal of Extension Education* **23**: 96-101. https://doi.org/10.54986/irjee/2023/apr_jun/96-101

Manaswi B H, Kumar P, Prakash P, Anbukkani P, Kar A, Jha G K, Rao D U M, and Lenin V 2020.Impact of farmer producer organization on organic chilli production in Telangana, India.*Indian Journal of Traditional Knowledge* **19**: 33-43.

Mourya M and Mehta M 2021. Farmer producer company: India's magic bullet to realise select SDGs? *International Journal of Rural Management* **17**: 115S-147S.

Nikam V, Veesam H, Kumara T M K and Chand P 2024. How are farmer producer organisations functioning in India? an empirical evidence from a mixed methods research synthesis. *Economic and Political Weekly***59**: 62-68.

Padmanand V, Kalsi N S, Sood K, Reddy M C and Singh S 2017. Approach towards capacity-building of FPOs on fast track mode: in Punjab.*SEDME (Small Enterprises Development, Management & Extension Journal)* **44**: 71-92.https://doi.org/10.1177/0970846420170305

Prabhavathi Y, Kishore N K, Siddayya and Ramachandra C T 2023. An analytical study on managerial competencies and business performance of farmer producer organizations (FPOs): a value chain perspective from India. *Millennial Asia*.https://doi.org/10.1177/09763996231200180

Prasanna S K and Mazhar S H 2022. Impact level of knowledge and constraints faced by the farmer producer organization on farmers income in Kurnool district of Andhra Pradesh. *Asian Journal of Agricultural Extension, Economics and Sociology* **40**: 83-89.https://doi.org/10.9734/ajaees/2022/v40i930978

Pujitha A S, Naik A, Kumar A and Biswas T 2024. Comparative analysis of the impact of FPO on paddy farmers through canonical correlation analysis, *Indian Journal of Extension Education* **60**: 49-53.https://doi.org/10.48165/IJEE.2024.60310

Rajpurohit T S, Kumar A, Rajpurohit G, Kumar R and Choudhary R 2024. Examining the power of accumulation: a case study of the Lavera project by Ambala farmers producer company limited in Haryana, India. *Asian Journal of Agricultural Extension, Economics & Sociology* **42**: 88-99. https://doi.org/10.9734/ajaees/2024/v42i22366

Rani C R, Reddy AA and Mohan G 2023. From formation to transformation of FPOs drivers for success. *Economic and Political Weekly* **58**: 14-19.

Reddy A A, Raju S S and Bose A 2020. Farmers' income, indebtedness and agrarian distress in India. *The Microfinance Review* **12**: 20-38.

Roy D, Joshi P K, Sonkar V K, Karandikar B, More A, Singh R K P and Kumar A 2020.*Comparative study of farmer producer organisations in Bihar and Maharashtra.*Institute for Food Policy and Research, Washington, DC.

Sharma M, Singh R, Chiphang S and Prasad A 2023. Impact assessment of Ri-Lajong FPO on the livelihood of farmers in Ribhoi district, Meghalaya. *Indian Journal of Extension Education* **59**: 43-47.https://doi.org/10.48165/IJEE.2023.59308

Sharma P 2013. Leveraging farmer producer organizations to boost production, mitigate risk and strengthen food security: lessons and challenges. *Journal of Land and Rural studies* **1**: 41-48. https://doi.org/10.1177/2321024913487270

Singh G and Vatta K 2019. Assessing the economic impacts of farmer producer organizations: a case study in Gujarat, India. *Agricultural Economics Research Review* **32**: 139-148. https://doi.org/10.5958/0974-0279.2019.00023.5

Singh S 2023. (Farmer) producer companies in India as new generation cooperatives: case studies of performance and impact from West Bengal, India. *Annals of Public and Cooperative Economics* **94**: 1007-1029. https://doi.org/10.1111/apce.12436

Surendran-Padmaja, S and Ojha J K 2023. Beyond the number games: understanding the farmer producer companies in India and the way forward. *Journal of Asian and African Studies*. https://doi.org/10.1177/00219096231192332

Thakur D, Sharma K, Sharma M and Suman M 2021. Emerging trend of dairy based producer organizations: case studies from Himachal Pradesh. *Indian Journal of Dairy Science* **74**: 262-265.https://doi.org/10.33785/IJDS.2021.v74i03.011

Vahoniya D R, Vahoniya N D and Halpati J R 2023. Conceptual study about farmer producer company (FPC): An Organisational Perspectives. *Asian Journal of Agricultural Extension, Economics & Sociology* **40**: 1185-1197. https://doi.org/10.9734/ajaees/2022/v40i101676

Vedasri R and Mishra R K 2021.A study on impact of farmer producer organisation on farmers' income in Andhra Pradesh. *Asian Journal of Agricultural Extension, Economics & Sociology* **39:** 7-18.https://doi.org/10.9734/ajaees/2021/v39i830619

Venkattakumar R, Mysore S, Venugopalam R, Narayanaswamy B, Balakrishna B, Atheequlla G, Paripurna A and Reddy T M 2019. Performance of farmers producers organizations (FPOs) and associated factors in Karnataka: producers' perspectives. *Indian Research Journal of Extension Education* **19**: 7-12.

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