

Strengthening managerial acumen and strategic leadership in farmer producer companies: evidence from eastern India

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Abstract

Purpose – Smallholder farmers in India face persistent challenges in accessing inputs, markets and information. Farmer producer companies (FPCs) have emerged as key institutional mechanisms to address these gaps. However, the sustainability and performance of FPCs are critically linked to the managerial competencies of their leadership, particularly the Board of Directors (BODs). This study aims to assess the managerial competencies of FPC leaders and examine how these competencies influence the functional performance of FPCs in Bihar.

Design/methodology/approach – The study evaluated 100 BOD members from eight FPCs in Bihar using the 5-Dimensional Managerial Competency Battery (5D-MCB), which assesses communication, strategic decision-making, goal-setting, leadership and lifelong learning. BOD members were categorized as Novice (18–30), Professional (31–42) or Expert/Pioneer (43–54). Competency levels were analysed across FPCs at different stages of development – nascent (= 3 years), emerging (>3–6 years) and mature (>6 years) – to identify variations and gaps.

Findings – Results showed that well-established FPCs recorded a 43% competency index compared to only 26% among non-functional FPCs. Significant differences in managerial competencies were observed across FPC life-cycle stages, with mature FPCs demonstrating relatively higher performance. However, critical deficiencies were identified in strategic leadership and adaptability. These gaps highlight the importance of strengthening managerial and strategic capabilities for improved governance and operational effectiveness.

Originality/value – The study provides one of the first empirical assessments of managerial competencies among FPC leaders in Bihar. By linking leadership skills to institutional performance, it offers actionable insights for policymakers and development agencies to design targeted capacity-building and governance interventions that can enhance FPC sustainability and support smallholder farmers' livelihoods.

Keywords Farmer producer company, Managerial competency, Leadership

Paper type Research article

1. Introduction

Smallholder farmer aggregation is pivotal in addressing the challenges of access to production inputs and enabling market participation, particularly in the context of global agriculture dominated by small and marginal farms. Globally, out of an estimated 570 million farms, 475 million (84%) are smaller than 2 hectares (FAO, 2014; Paloma *et al.*, 2020). Despite predictions of farm consolidation due to the agricultural sector's diminishing role compared to industrial and service sectors in developing countries, small farms have persisted and, in some cases, increased in number (Hazell *et al.*, 2020). These small farms, while occupying just 12% of global farmland, are home to a significant share of the world's poor and food-insecure populations. They employ over two billion people and produce approximately 80% of the food consumed in Asia and Africa (Lowder *et al.*, 2016).

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In countries like India, where 86% of farmers are small and marginal, the challenges of fragmented, scattered and heterogeneous landholdings, coupled with rising cultivation costs, result in incomes that are often insufficient to meet consumption needs (GOI, 2019). Farmer producer organizations (FPOs) have emerged as a crucial mechanism to address these issues (Nikam *et al.*, 2025). In India, the legal foundation for FPOs was established in 2002 with amendments to the Companies Act of 1956, allowing the creation of Producer Companies (PCs) that combine the flexibility of private companies with cooperative principles. A new provision, “Part IXA,” was introduced, designating Producer Companies as a distinct type of corporate entity formed by primary producers (Gurung and Choubey, 2021). In 2013, a national policy was introduced to guide the establishment of FPOs, and the Department of Agriculture and Cooperation recommended that FPOs be registered under the special provisions of the Companies Act, 2013. Recognizing their importance, the Government of India has actively supported their proliferation, most notably through the 2021 initiative to promote 10,000 FPOs by 2026 (Singh, 2022). The scheme has a budget outlay of INR 6,865 crore (\$832 million USD), extending up to 2027–28. Since its inception, significant progress has been made – INR 254.4 crore (\$31 million USD) in equity grants has been disbursed to 4,761 FPOs, while credit guarantee coverage worth INR 453 crore (\$55 million USD) has been extended to 1,900 FPOs. This initiative underscores the Government of India’s commitment to promoting sustainable, farmer-led agribusiness models and improving the income security of small and marginal farmers (PIB, 2025). According to the Tata–Cornell Institute for Agriculture and Nutrition (TCI) analysis, using data from the Ministry of Corporate Affairs (MCA), India had 44,460 registered FPOs by September 2024. However, the number of actively functioning FPOs remains uncertain, with estimates ranging between 15,455 and 26,938 (TCI, 2024). The sustainability of FPOs is often gauged by their compliance with financial reporting standards after the initial 3–5 years of government support. Among the 26,938 FPOs classified as active and compliant, about 57% (15,455) submitted financial statements by 2023. Further analysis reveals that of the 23,030 FPOs promoted in India until 2021 and older than three years, 50% filed their current financial statements in 2023. Similarly, among the 9,201 FPOs older than five years and promoted until 2019, only 44% (4,021) remained financially compliant in 2023. The vast majority of these FPOs are at their nascent stage and are still in the early growth phase of their life cycle. It is estimated that at best, 30% of these FPOs are currently operating viably and around 20% are still struggling to survive. Around 50% are still in the phase of mobilization, equity collection, business planning other management-related developmental stages (Nayaji and Dixit, 2021; SFAC, 2019; Anand *et al.*, 2025). The underperformance of FPOs is driven by multiple factors; one of factor is managerial capacity, restricted access to credit, weak market linkages and inadequate technical support. These challenges underscore the importance of a thorough evaluation of FPO performance to identify the key constraints hindering their growth and development.

As subsets of FPOs, farmers producer companies (FPCs) are registered under India’s Companies Act and monitored by the Registrar of Companies, not the Registrar of Cooperative Societies (SFAC, 2019). FPCs are legally registered entities owned and operated by farmers themselves, providing a platform to access quality inputs, modern technology, agricultural extension services and remunerative markets (Cherukuri and Reddy, 2014; Raju *et al.*, 2017; Rosario *et al.*, 2012). Approximately 84% of FPOs are FPCs registered under the Companies Act, 15% under the Cooperative Acts of the Centre and States, and 1% under the Society Registration Act and the Indian Trust Act (Nikam *et al.*, 2023).

The sustainability and profitability of FPCs depend on economic, market, social and environmental factors (Anand and Ghosh, 2025), which rely on the managerial competencies of their leadership. Effective governance, strategic planning and operational management are critical for achieving their goals. Research highlights that professional and entrepreneurial management skills are essential for successful and stable FPCs (Gupta, 1989; Pingali *et al.*, 1989; SFAC, 2012). Conversely, inadequate management capabilities, such as a lack of business leadership and planning, have been identified as primary causes of FPC failures (Senanayake, 2004; Singh and Singh, 2012). Managerial competencies are essential for the

success and sustainability of organizations, as they encompass the skills, attributes and behaviours required for effective leadership and decision-making. These competencies enable managers to make informed decisions, adapt to changing environments and implement innovative solutions to emerging challenges. A strong strategic vision and leadership foster alignment, motivation and a sense of purpose that drive organizational growth and performance. Effective communication and interpersonal skills are crucial for building trust and maintaining strong relationships with stakeholders, while problem-solving and resilience ensure adaptability in dynamic markets (Mukherjee, 2018). Competent managers enhance organizational performance by optimizing resources, streamlining operations and promoting a culture of accountability and collaboration. Furthermore, they play a pivotal role in driving innovation, continuous learning and sustainable practices, positioning organizations for long-term success. By empowering teams through training, mentorship and fostering teamwork, managers not only improve individual and collective performance. For organizations like FPCs, where leadership is critical to development, cultivating managerial competencies among the Board of Directors (BODs) is vital for ensuring resilience and achieving their multifaceted goals (Kumari and Bisht, 2022).

Studies on small and micro-enterprise management emphasize the centrality of owner-managers' competencies in balancing economic viability with contextual constraints such as limited capital, informal governance structures, and environmental uncertainty. Similar to FPCs, small enterprises depend heavily on the strategic judgment, entrepreneurial orientation and adaptive capacity of a small leadership group, making managerial competence a decisive factor in survival and growth (Storey, 1994; Beaver and Prince, 2004; Man *et al.*, 2002).

The governance effectiveness in cooperative and member-owned organizations depends not only on formal structures but also on the managerial and relational capabilities of elected boards. Unlike investor-owned firms, collective enterprises must reconcile democratic decision-making with professional management, often placing Boards of Directors in hybrid roles that require both stewardship and entrepreneurial leadership. Prior studies highlight that weak board competencies, role ambiguity and limited strategic oversight are major contributors to underperformance in cooperatives and producer organizations (Cook, 1995; Cornforth, 2004; Bijman *et al.*, 2013). These findings reinforce the relevance of examining BOD competencies in FPCs, where governance quality directly affects both member trust and market performance.

Many FPCs operate in socially dense, locally rooted contexts. The role of trust-based relationships, socio-emotional wealth and informal authority has been emphasized in shaping leadership behaviour and long-term orientation (Gómez-Mejía *et al.*, 2007; Miller and Le Breton-Miller, 2006). While such embeddedness can strengthen commitment and collective identity, it may also constrain professionalization and strategic renewal if managerial competencies are not consciously developed (Chrisman *et al.*, 2012). These dynamics closely mirror leadership challenges in FPCs, where board members are often farmer-leaders drawn from the community rather than professionally trained managers.

A notable research gap in the study of FPCs is the insufficient focus on the managerial competencies of the BODs, despite their pivotal role in driving organizational success and sustainability. While existing studies largely concentrate on evaluating FPCs from the perspective of member-farmers, examining their benefits and challenges, they often neglect the impact of BOD leadership. Key managerial competencies, such as decision-making, strategic planning and governance challenges, remain underexplored. This gap underscores the need for research that investigates the role of BOD's competencies in shaping the overall effectiveness of FPCs, which can inform strategies, policies and best practices to enhance their long-term resilience and success across diverse agricultural landscapes.

By situating the managerial competencies of BODs in the FPCs, the present study bridges research on cooperative governance, small enterprise management and locally embedded leadership. It contributes to a more integrated understanding of how specific managerial competencies enable BOD to navigate hybrid governance demands, professionalize decision-making and sustain FPC performance across different stages of its development. [Figure 1](#)

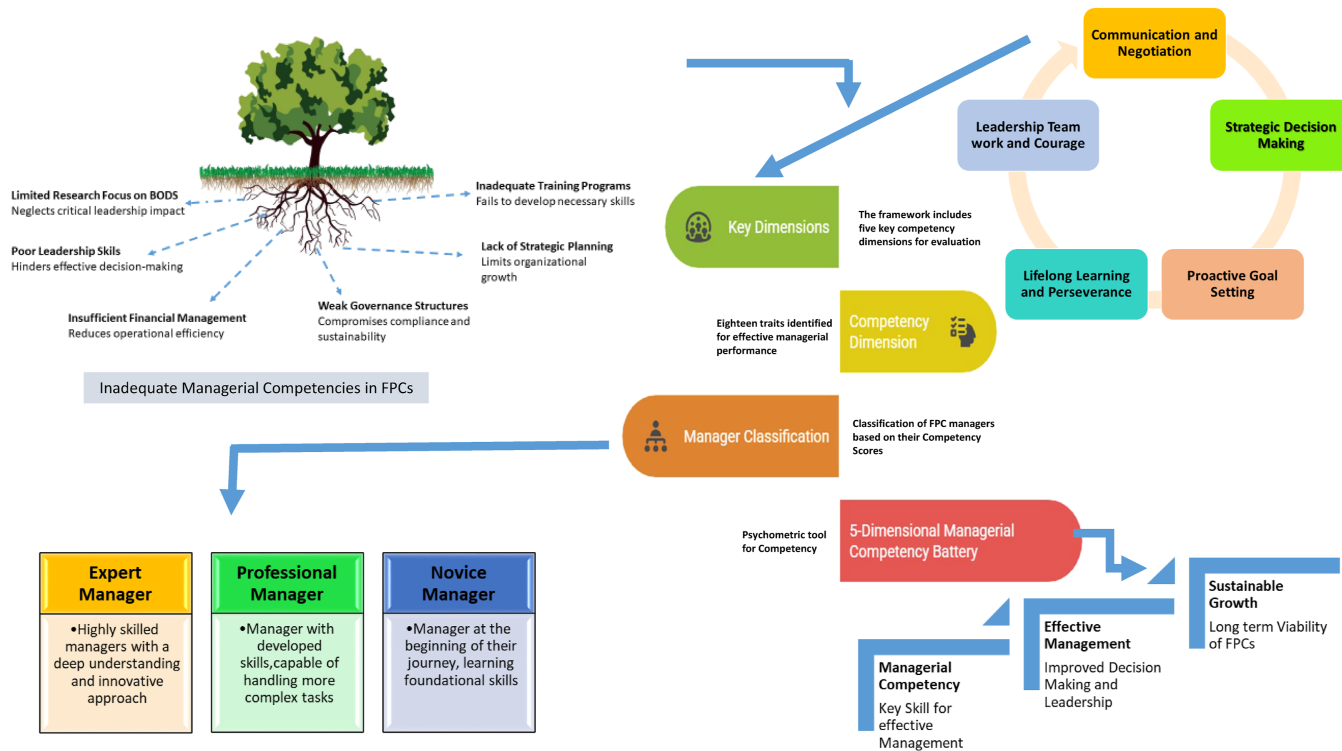


Figure 1. Managerial competencies framework for strengthening FPC. Source: Authors' own work

highlights managerial competencies for FPCs, essential for effective governance and long-term viability of FPCs. It categorizes skills into key competencies, competency dimensions, classification and evaluation tools for assessing FPC managers. This framework provides a structured approach to improving FPCO performance. Thus, the study aims to identify the key managerial competencies needed at different stages of development to ensure effective management and growth of FPCs.

2. Methodology

The study was conducted in the state of Bihar, purposefully selected as one of the six major states actively promoting FPCs in India. Bihar was selected as the study area because of its high concentration of small and marginal farmers, who account for 97% of landholders and cultivate 76% of the state's agricultural land (Roy *et al.*, 2020; Nayaji and Dixit, 2021). The state's FPC ecosystem has also grown substantially in recent years, with over 1,700 registered FPCs supported by various external agencies (TCI, 2024). Bihar's FPCs have largely emerged through structured promotion and support initiatives. Among the eastern Indian states, Bihar has the highest number of FPCs (1,731) and ranks sixth nationally in terms of FPC count. States like Bihar have observed ample growth in FPC numbers since 2019, driven by favourable government's promotional policies and targeted financial allocations (Anand *et al.*, 2023; Roy *et al.*, 2020). The state's large base of small and marginal farmers (about 96%) makes it crucial for evaluating the impact of collective farming models (PIB, 2025). This context makes Bihar an ideal setting to examine the effectiveness of externally supported FPC models and to derive insights applicable to other regions facing similar agrarian challenges.

The eight FPCs included in the study were selected using a stratified random sampling approach to ensure representation across different stages of organizational maturity and functionality. Based on operational duration and functional status, all registered FPCs in Bihar were first grouped into four strata: (1) FPCs functioning for 1–3 years, (2) FPCs functioning for more than 3 but up to 6 years, (3) FPCs functioning for more than 6 years and (4) FPCs older than 6 years but non-functional during the study period. Within each stratum, a sampling frame was prepared comprising FPCs engaged specifically in agricultural and horticultural production, thereby excluding entities involved in non-farm or allied activities. From each stratum, two FPCs were randomly selected, resulting in a total sample of eight FPCs. This stratification ensured inclusion of both relatively new and mature organizations, as well as those that had ceased operations, enabling comparative analysis across the FPC life cycle while avoiding over-representation of any single development stage. For the purposes of present study, the FPCs were classified as functional if, during the study period, it demonstrated (1) ongoing statutory compliance (annual filings/returns), (2) active business operations evidenced by procurement, sales, or value addition, (3) at least one completed marketing or input-supply cycle in the preceding year and (4) a functioning governance structure (Board of Directors meetings held and records maintained). Contrastingly, the FPCs were deemed non-functional if it lacked sustained business activity and governance during the study period – specifically, no regular procurement/marketing, negligible or stagnant turnover and inactive or irregular board operations – despite remaining legally registered. Using this operational definition, two FPCs were considered as non-functional, having ceased operations since 2020.

In this study, formal membership in the FPCs refers to producers who are officially enrolled as shareholders of the producer company in accordance with the Producer Company framework. Membership is voluntary and restricted to primary producers, and is obtained through an approved enrolment process that includes the purchase of at least one share, thereby creating an equity stake and ownership relationship with the FPC. Members are expected to participate, to varying degrees, in the collective activities of the company, such as input procurement, aggregation, marketing or value-addition, and to engage with the governance

processes through attendance at general body meetings. Formal members enjoy access to FPC services, institutional linkages, and any surplus or patronage benefits distributed as per company rules. Governance rights follow the principle of one-member–one-vote, regardless of the number of shares held and the Board of Directors (BODs) is elected by the general body from among the members, making formal membership the primary basis for both participation in decision-making and leadership selection within the FPCs. The BODs in a FPC comprises of farmer members elected by the General Body, requiring a minimum of 5 and maximum of 15, with up to one-fifth being expert non-members; they set policy, manage operations and are accountable to members, guided by a Chairman and supported by a Chief Executive Officer, ensuring the company serves its producer-members' interests in business and market access. A total of 100 members representing BODs of the selected FPCs were selected as respondents using a complete enumeration approach.

2.1 Psychometric tool for assessment

To evaluate managerial competencies, the study employed Mukherjee's 5-Dimensional Managerial Competency Battery (5D-MCB), a psychometric instrument designed to assess both personal-oriented and task-oriented managerial skills (Mukherjee, 2018). The 5D-MCB integrates questionnaires, behavioural tests and rating scales to provide a comprehensive, multidimensional assessment of managerial capabilities. The term "battery" refers to a collection of independent tests aimed at measuring complex constructs, such as psychological functioning and leadership traits. The instrument identified 18 critical traits of competent managers. These traits were categorized into five broad competency dimensions: (1) communication and negotiation, (2) strategic decision-making, (3) proactive goal setting, (4) leadership – including teamwork and courage and (5) lifelong learning and perseverance. Items were structured as situational judgement and frequency-based statements, prompting respondents to indicate how often they engage in behaviours such as handling conflict, setting strategic plans and networking within their organizations.

The statements were translated from English into the local language following a standard translation–back-translation protocol. The initial translation was carried out by subject experts familiar with managerial and organizational terminology, and subsequently back-translated into English by an independent bilingual expert to ensure semantic and conceptual equivalence. The translated instrument was pilot tested with a small group of respondents comparable to the study sample to assess clarity, cultural appropriateness and comprehension of situational judgment and frequency-based items. Based on pilot feedback, minor wording refinements were made without altering the original construct meaning. Researchers received structured training on the objectives of the 5D-MCB, standardized administration procedures and techniques for explaining items neutrally to avoid response bias. During field implementation, contextual examples were provided where necessary to enhance respondent understanding, while maintaining fidelity to the original scale and scoring framework. Respondents were instructed to provide immediate, instinctive responses, with no right or wrong answers, ensuring authenticity in self-assessment. Based on the 5D-MCB scores, BOD members are classified into three levels of competency: Novice (18–30), Professional (31–42) and Expert/Pioneer (43–54). This approach allows for quantitative scoring while also facilitating qualitative interpretation of managerial skills within the organizational context. [Figure 2](#) illustrates the structure and components of the 5D-MCB.

Internal consistency reliability of the scale was assessed using Cronbach's alpha and composite reliability. The 5-item scale demonstrated good internal consistency (Cronbach's $\alpha = 0.755$). Exploratory factor analysis further supported scale reliability, with strong standardized loadings across items. Composite reliability value exceeded the recommended threshold of 0.70 (CR = 0.892), indicating satisfactory construct reliability. Average variance extracted (AVE) values were also above 0.50 (highest 0.735 and lowest 0.607), confirming adequate convergent validity.

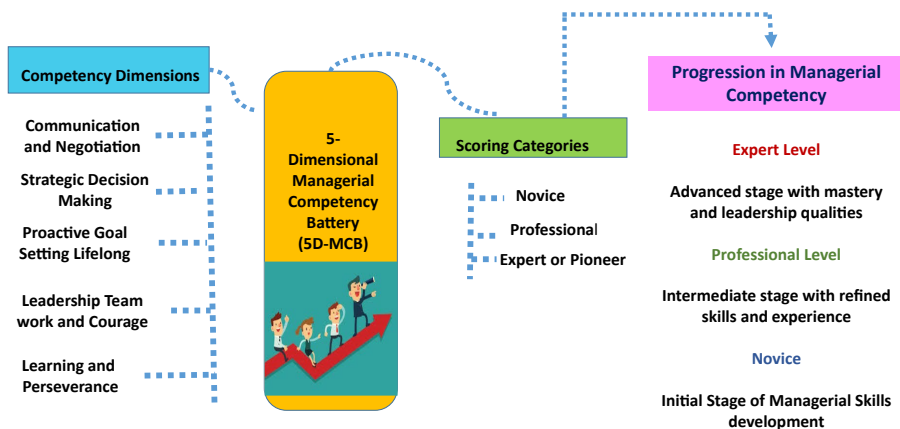


Figure 2. 5-Dimensional managerial competency battery. Source: Authors' own work

3. Results

FPCs in Bihar are playing a significant role in empowering farmers and fostering sustainable agriculture. Present study included eight FPCs at their different growth stages. FPC1, established in 2021 in Muzaffarpur, specializes in maize production, supporting 325 members across 12 villages with an annual turnover of INR 9 lakhs (\$10,909 USD). FPC2, founded in 2022 in Darbhanga, focuses on makhana and wheat, serving 300 members across 27 villages with a turnover of INR 2 lakhs (\$2,424 USD). FPC3, started in 2019 in Darbhanga, excels in makhana-based products, serving 400 members with a turnover of INR 20 lakhs (\$24,242 USD). FPC4, operating since 2018 in East Champaran, specializes in wheat, rice, and moong, supporting 551 members with a turnover of INR 12 lakhs (\$14,545 USD). FPC5, established in 2016 in Darbhanga, offers value-added products like pickles and amla candy, serving 1,500 members with a turnover of INR 41 lakhs (\$49,697 USD). FPC6, operational since 2009 in Purnea, is the largest, with 5,753 members across 354 villages and a turnover of INR 5.42 crores (\$656,970 USD), offering diverse agricultural products. In contrast, FPC7 and FPC8, both established in Katihar in 2015 and 2014 respectively, focused on potato and maize but are currently inactive. These FPCs reflect both the opportunities and challenges in the sector.

The socio-economic profile of FPC members reveals substantial heterogeneity across income, landholding, productivity, and market access. FPC1 has the highest proportion of Above Poverty Line members, whereas FPC7 predominantly comprises Below Poverty Line members. Average annual family income ranges from over INR 1.10 lakh (\$1333 USD) in FPC7, FPC1 and FPC3 to lower levels in FPC2 and FPC8. Agriculture remains the primary income source, complemented by livestock, with holdings varying from 5 to 11 animals per household. Economic data differ: FPC1 and FPC4 have more earning members per household, while FPC7 has only one. Debt prevalence is higher in older FPCs, reflecting greater access to credit or higher investment levels. Land and irrigation access are uneven, with FPC4 reporting the largest cultivable and irrigated areas, affecting cropping intensity and productivity. Seasonal production and commercialization also vary markedly, with Kharif outputs ranging from 747 kg (FPC5) to 3,031 kg (FPC4) and Rabi outputs peaking at 16,538 kg (FPC7). Sales income is highest in FPC6 (INR70,562/\$855 USD), and market proximity influences profitability, from 3 km (FPC7) to 24.58 km (FPC4). These findings highlight that while FPC participation enhances livelihoods and market access, addressing disparities in resources, productivity and infrastructure is essential for equitable growth among members.

The 5D-MCB was crafted to gauge the managerial proficiency of the BODs within FPOs/FPCs. The five dimensions of managerial competency considered in the present study are (1) strategic decision-making, (2) lifelong learning and perseverance, (3) communication and negotiation, (4) proactive goal setting and (5) leadership, teamwork and courage (Table 1 and Figure 3). The comparison among different FPCs (presumably representing various categories of managers) reveals diverse performances across multiple competencies crucial for effective managerial roles. Across communication and negotiation, well-established FPCs like FPC6 emerge as the standout performer, exhibiting strong capabilities in facilitating communication, negotiation and networking followed by FPC5. Conversely, relatively newly established, emerging staged FPCs like FPC2 lags with generally lower scores in these areas among all functioning FPOC. In terms of strategic decision-making, after FPC6, FPC5 demonstrates notable strength, particularly in feedback seeking, problem-solving, planning and overall strategic decision-making, while FPC7 and FPC8, non-functional FPCs, struggle with weaker performances in all aspects. Proactive goal setting showcases FPC6's robust leadership, excelling in vision, locus of control, achievement motivation and teamwork, contrasting starkly with FPC1 and FPC2's lower scores that may be attributed to their initial years of functioning. When it comes to leadership, teamwork and courage, FPC6 continues to lead, displaying prowess in risk-taking ability and conflict resolution, followed by FPC5. Lifelong learning and perseverance reveal a similar trend, with FPC6 maintaining a strong position, whereas FPC1 and FPC2, in the initial stages of functioning, exhibit weaker tendencies. FPC7 and FPC8 struggle with poor performance in competencies. Overall, longer-established FPCs like FPC6 emerge as the top-performing FPC, demonstrating consistency and strength across all competencies followed by FPC5. The intermediate staged FPCs like FPC3 and FPC4 generally exhibit moderate to strong performance, with some fluctuations in specific areas. The emerging staged FPCs like FPC1 and FPC2 show a need for improvement in various managerial competencies, with a lower overall score reflecting areas for development with passing years of functioning and experience. The non-functional FPCs, like FPC7 and FPC8 demonstrate weaker overall performance, highlighting areas for managerial enhancement and skill development. Resuming the functioning of these FPCs needs the strengthening of the managerial competencies across different dimensions. When examining the managerial competency index scores across various FPCs, FPC6 emerges as the highest-scoring group, boasting a robust index score of 43%. This suggests a commendable proficiency across all evaluated competencies. Following closely behind is FPC5, with an index score of 38%, indicating strong managerial capabilities, particularly in strategic decision-making and proactive goal setting. FPC3 and FPC4 also demonstrate good managerial performances, each securing a 32 and 30% index score, indicating a balanced skill set across different managerial dimensions. In contrast, FPC7 and FPC8 lag with index scores of 26%, implying areas of improvement in communication, strategic decision-making, leadership, goal setting, lifelong learning, and perseverance. FPC1 with a relatively lower index score of 29% followed by FPC2 (28%), indicates significant developmental needs across various competencies. Based on the index score of 5D-MCB, the managers were classified into three categories: novice (15–25%), the manager new to and inexperienced in a job, professionals (26–35%), the manager engaged in a specified activity as main occupation and expert (36–45%), very knowledgeable and skilful manager. The index scores reveal a diverse landscape of managerial competency among the different FPCs. The longer-established FPCs as FPC6 (scored 43%), emerge as the epitome of expertise, showcasing a comprehensive understanding and adeptness in managerial roles, followed by FPC5, which scored 38%. Their consistently high scores across various dimensions affirm their prowess in leadership, strategic decision-making, and proactive goal setting. Following closely behind are the intermediate staged FPCs, FPC3 and FPC4, which scored 32 and 30%, respectively, classified as professionals. These groups exhibit commendable performance levels, demonstrating proficiency in their respective managerial responsibilities. However, there exists a notable contrast with FPC1, FPC2, FPC7 and FPC8, with a relatively lower score. The FPCs at their emerging and non-functional stages of

Table 1. Managerial competency dimensions as perceived by the professionals of the selected FPCs

Sl. No.	Managerial competency dimensions	Sub dimensions	Mean (SD)							
			Functioning for 1–3 yrs FPC1		Functioning for 3–6 yrs FPC3		Functioning for >6 yrs FPC5		Non-functional FPC7	
1	Communication and negotiation	Communication facilitation	2.20 (1.10)	2.08 (0.51)	2.27 (0.47)	2.14 (0.90)	2.75 (0.71)	2.88 (0.35)	1.00 (0.00)	1.00 (0.00)
		Negotiation	2.00 (0.00)	1.17 (0.39)	2.55 (0.52)	2.14 (0.69)	2.75 (0.46)	2.88 (0.35)	2.67 (0.82)	1.40 (0.89)
		Networking	2.60 (0.55)	2.17 (0.39)	2.27 (0.47)	2.00 (0.00)	2.63 (0.52)	3.00 (0.00)	1.17 (0.41)	1.00 (0.00)
2	Strategic decision making	Feedback seeking	1.40 (0.55)	2.08 (0.51)	2.27 (0.47)	2.14 (0.38)	2.63 (0.52)	2.88 (0.35)	2.67 (0.82)	2.80 (0.45)
		Problem solving	2.00 (0.00)	2.17 (0.39)	2.09 (0.30)	2.43 (0.53)	2.38 (0.52)	2.63 (0.52)	1.33 (0.52)	1.40 (0.55)
		Planning	2.60 (0.55)	2.25 (0.45)	2.45 (0.52)	2.29 (0.49)	2.25 (0.46)	2.75 (0.46)	1.00 (0.00)	1.00 (0.00)
		Strategic decision	1.80 (0.45)	2.08 (0.51)	1.91 (0.54)	1.57 (0.79)	2.63 (0.74)	2.75 (0.71)	1.00 (0.00)	1.60 (0.55)
3	Proactive goal setting	Vision	1.40 (0.89)	1.50 (0.80)	1.55 (0.93)	2.29 (0.95)	2.75 (0.71)	2.75 (0.71)	1.67 (0.52)	1.00 (0.00)
		Locus of control	1.80 (0.45)	2.08 (0.51)	2.55 (0.52)	2.71 (0.49)	2.63 (0.52)	2.88 (0.35)	2.50 (0.84)	2.60 (0.55)
		Achievement Motivation	2.00 (0.00)	1.92 (0.29)	2.00 (0.63)	1.86 (0.38)	2.38 (0.52)	2.88 (0.35)	1.00 (0.00)	2.60 (0.89)
4	Leadership team work and courage	Team work	2.00 (0.00)	2.00 (0.00)	2.09 (0.54)	1.86 (0.38)	2.25 (0.46)	2.75 (0.46)	2.67 (0.82)	2.60 (0.89)
		Risk taking ability	2.00 (0.00)	2.00 (0.00)	2.27 (0.47)	2.00 (0.00)	2.63 (0.74)	2.88 (0.35)	2.00 (0.00)	2.00 (0.00)
		Conflict resolution	1.60 (0.55)	2.00 (0.43)	2.18 (0.60)	1.43 (0.53)	2.00 (0.93)	2.88 (0.35)	2.33 (1.03)	2.60 (0.55)

(continued)

Table 1. Continued

Sl. No.	Managerial competency dimensions	Sub dimensions	Mean (SD)							
			Functioning for 1–3 yrs		Functioning for >3–6 yrs		Functioning for >6 yrs		Non-functional	
			FPC1	FPC2	FPC3	FPC4	FPC5	FPC6	FPC7	FPC8
5	Lifelong learning and perseverance	Continual learning	1.40 (0.55)	1.33 (0.49)	2.18 (0.87)	1.57 (0.79)	2.63 (0.52)	2.88 (0.35)	1.50 (0.55)	1.60 (0.55)
		Perseverance	2.00 (0.00)	1.50 (0.67)	1.73 (0.90)	1.71 (0.95)	2.38 (0.74)	2.88 (0.35)	1.50 (0.55)	1.20 (0.45)
	Overall Score	1.92 (0.37)	1.89 (0.42)	2.16 (0.58)	2.01 (0.55)	2.51 (0.60)	2.83 (0.40)	1.73 (0.46)	1.76 (0.42)	1.76 (0.42)
	Category of managers (Index score in %) *	29	28	32	30	38	43	26	26	26
	Note(s): *Index score: 15–25 (Novice), 26–35 (Professionals), 36–45 (Experts or pioneer)									
Source(s): Authors' own work										

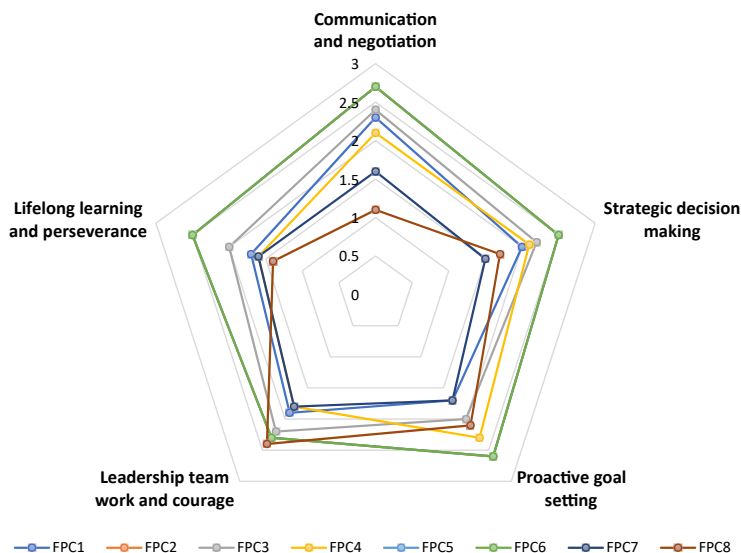


Figure 3. Managerial competency dimensions of the selected FPCs. Source: Authors' own work

functioning display varying degrees of inexperience and require focused efforts to enhance their managerial skills and effectiveness. Overall, the data underscores the importance of continuous development initiatives tailored to the specific needs of each FPC, aiming to nurture a cadre of proficient and accomplished managers capable of steering their organizations towards success.

Overall, while FPC6 sets the benchmark for managerial excellence, there exists a spectrum of performance among the different FPCs. Addressing the specific strengths and weaknesses identified within each group is vital for fostering a well-rounded and effective managerial workforce within the organization. The analysis of index scores highlights the varying levels of managerial competency among different FPCs. While some, like FPC6, demonstrate expertise across multiple dimensions, others, such as FPC2, FPC7 and FPC8, exhibit novice-level proficiency, indicating the need for improvement. This underscores the importance of tailored development initiatives aimed at addressing specific competency gaps within each FPC. By investing in continuous training and skill-building programs, organizations can cultivate a cadre of proficient managers capable of effectively navigating the complexities of their roles, ultimately leading to enhanced organizational success.

4. Discussion

The present study reaffirms that managerial efficiency is a decisive factor in the effective functioning and long-term sustainability of FPCs in Bihar. The assessment based on the 5D-MCB framework revealed considerable variation in managerial capacities across different growth stages. Mature organizations such as FPC6 demonstrated consistently high proficiency in all five dimensions: strategic decision-making, lifelong learning and perseverance, communication and negotiation, proactive goal setting, and leadership, teamwork and courage. In contrast, emerging and non-functional entities like FPC2, FPC7 and FPC8 showed lower competency scores, reflecting their limited experience, weak institutional exposure and inadequate support systems.

These findings align with earlier research emphasizing managerial capability as the cornerstone of organizational effectiveness and sustainability (Chye *et al.*, 2010). Skilled

managers who exhibit strategic foresight, planning ability and operational discipline are better positioned to respond to challenges, seize emerging opportunities and sustain collective enterprises. Similar patterns were noted by Mukherjee (2018), who reported substantial disparities in managerial competencies among FPCs across Indian states, where strengths in decision-making and communication often coexisted with weaknesses in proactive goal setting. The present analysis echoes this observation, as emerging FPCs lacked clarity in vision and strategic orientation, impeding their capacity to scale operations and achieve sustainability. Kumari and Bisht (2022) identified six key managerial competencies: planning and business development, marketing management, operational control, financial management, democratic leadership and business operations management, four of which significantly influenced overall FPC performance. The superior performance of FPC6 and FPC5 in the present study can be attributed to their strength in strategic planning, decision-making and goal orientation. Conversely, weaker FPCs exhibited deficiencies in leadership and financial management, constraining their growth potential and member participation. Similar to the observations of Nikam *et al.* (2023), the absence of business acumen, financial literacy and strategic planning abilities among managerial personnel and BODs limited their access to working capital and markets. Institutional linkages with management institutions and financial advisors are, therefore, vital to enhance professional capabilities and strengthen governance mechanisms.

Leadership also emerged as a defining attribute of successful FPCs. Empirical evidence shows that high-performing organizations are often guided by one or two visionary leaders who establish networks with other FPCs, public institutions, private companies and traders to expand visibility, improve credit access and secure better market opportunities. In the absence of detailed operational frameworks, effective leaders manage their organizations with integrity, professionalism and member trust. They ensure transparency, coordinate efficiently with stakeholders and strategically plan activities to enhance performance. Such leaders display unique interpersonal qualities—persuasion, empathy, and the ability to build trust among members that collectively reinforce organizational cohesion and resilience (Patil and Mehta, 2024). This reinforces the 5D-MCB dimension of leadership, teamwork and courage, underscoring that strong, ethical leadership acts as a catalyst for institutional growth. Managers with a deep understanding of enterprise dynamics are better equipped to identify emerging opportunities, manage working capital and balance short- and long-term priorities. Weakness in preparing viable business plans has been consistently identified as a major constraint in FPC performance (Nikam *et al.*, 2024). Roy and Thorat (2008) emphasized that business literacy and market understanding empower leaders to respond strategically to price fluctuations, policy changes and market shifts. Building institutional partnerships with management and agribusiness schools could thus provide FPC leaders with analytical and entrepreneurial skills necessary for sustainable business planning and market competitiveness. The importance of individual-level attributes in shaping organizational outcomes is also well supported by theoretical literature. Lala (1986) contended that managerial effectiveness is driven more by personal competencies – such as decision-making ability, communication, empathy and vision – than by formal authority. Similarly, Cockerill (1989) described managerial competence as an integration of cognitive, behavioural, affective and motivational characteristics that enable effective performance. The present findings reaffirm that the success of FPCs depends not only on organizational structures but also on the interplay between individual leadership attributes and collective learning environments.

To address the identified competency gaps, structured capacity-building programs tailored to the growth stage of FPCs are essential. These should focus on critical skill domains such as financial management, strategic planning, leadership development and communication. For emerging FPCs, training in basic financial literacy and goal setting is crucial; for developing FPCs, emphasis should shift towards innovation, marketing and business expansion; and for mature FPCs, capacity building should focus on sustainability and diversification strategies. Encouraging continuous learning, mentorship and inter-FPC knowledge exchange through

workshops and networking forums can further strengthen managerial ecosystems (Mukherjee, 2018; Nikam *et al.*, 2023).

Peer learning among BOD members and managers should also be institutionalized to facilitate the transfer of best practices and innovative ideas. A small and cohesive group of directors is suggested for the better and professional management of FPCs (Nikam *et al.*, 2025). Policy frameworks that promote such cross-learning and managerial networks can enhance governance quality and resilience across the FPC ecosystem. Overall, the study highlights that managerial competencies are dynamic and evolve with organizational maturity and institutional experience. Strengthening these competencies particularly in strategic decision-making, leadership, communication and business acumen, can transform FPCs into competitive agribusiness enterprises. Ultimately, the sustainability and growth of FPCs depend on sustained investment in human capital, the learning, leadership and strategic vision of individuals, thereby advancing inclusive and resilient rural development.

5. Conclusion

The study highlights the pivotal role of managerial competencies in shaping the performance, growth and sustainability of FPCs in Bihar. The analysis reveals that long-established FPCs exhibit strong managerial proficiency across all five dimensions of the 5D-MCB framework, particularly in strategic decision-making, communication, leadership, and proactive goal setting. Intermediate-stage FPCs such as FPC3 and FPC4 show moderate competency levels, indicating gradual progress but also areas requiring focused improvement. In contrast, emerging FPCs display significant gaps, especially in communication, leadership and goal setting, reflecting the need for targeted institutional and capacity-building support as they mature.

The findings clearly indicate that continuous learning and skill enhancement in managerial competencies are fundamental to the long-term sustainability of FPCs. The presence of stage-specific gaps, from innovation and market diversification in mature FPCs to leadership, communication and goal orientation in emerging ones, underscores the need for tailored interventions rather than one-size-fits-all approaches. Structured training, mentorship and operational support can play a transformative role in strengthening leadership, improving strategic decision-making and enhancing overall managerial performance. Empowering FPCs through sustained investment in human capital will not only enable them to overcome present operational constraints but also position them for future growth in a dynamic agricultural landscape. Strengthening managerial capacities, particularly among BODs and professional managers through robust training programs and continuous professional development, is therefore essential. Such initiatives will enhance organizational performance, improve market competitiveness, and ultimately contribute to smallholder farmers' income security and inclusive rural development.

6. Policy recommendations

Managerial gaps vary by FPC stage, from innovation and market expansion in mature FPCs to leadership, communication and goal-setting in emerging and non-functional FPCs. Addressing these gaps through targeted interventions is essential to improve performance, ensure sustainability and enhance the overall effectiveness of FPCs. Based on their specific needs, the policy recommendations are suggested (Table 2).

Strengthening managerial acumen and strategic leadership in FPCs requires a stage-specific, ecosystem-based policy approach. Mature FPCs with over six years of operation should be supported through advanced programs in innovation, market diversification and succession planning to sustain leadership continuity. Mid-stage FPCs (3–6 years) need intensive capacity-building in strategic decision-making, leadership, negotiation and financial management, complemented by exposure visits and peer learning from high-performing counterparts. For newly established FPCs (1–3 years), foundational leadership, communication and strategic planning training must be prioritized, supported by structured

Table 2. Stage-wise managerial gaps and policy recommendations for FPCs

FPCs	Functioning stage/ Index score	Key competency gaps	Policy recommendations
FPC6	>6 yrs/43% (Expert)	Minor gaps in innovation and market expansion	<ul style="list-style-type: none"> - Advanced skill programs in innovation and market adoption - Mentorship programs for emerging FPCs - Knowledge-sharing initiatives across state - Succession planning for leadership continuity
FPC5	>6 yrs/38% (Expert)	Proactive goal-setting, innovation	<ul style="list-style-type: none"> - Proactive goal-setting and innovation-oriented training - Risk management and financial planning workshops - Networking with high-performing FPCs
FPC3	>3–6 yrs/32% (Professional)	Strategic decision-making, leadership, negotiation	<ul style="list-style-type: none"> - Training in strategic decision-making and leadership - Team-building and conflict resolution exercises - Market intelligence and negotiation skill programs
FPC4	>3–6 yrs/30% (Professional)	Proactive goal-setting, financial management	<ul style="list-style-type: none"> - Peer learning from top-performing FPCs - Training in proactive goal-setting and vision alignment - Capacity-building in financial management and operational planning - Continuous learning and perseverance programs - Exposure visits to successful FPCs
FPC1	1–3 yrs/29% (Professional)	Leadership, communication, strategic planning	<ul style="list-style-type: none"> - Foundational leadership and communication training - Structured mentorship and Training - Workshops on proactive goal-setting and strategic planning - Networking and negotiation skill development
FPC2	1–3 yrs/28% (Professional)	Communication, teamwork, risk-taking	<ul style="list-style-type: none"> - Communication, negotiation and networking skill programs - Strategic management and problem-solving training - Teamwork, risk-taking and conflict resolution development
FPC7	Non-functional/ 26% (Novice)	All managerial dimensions	<ul style="list-style-type: none"> - Promote continuous learning culture - Comprehensive managerial training - Operational revival support including financial planning and market access - Linkage with business management institutes and technical support - Teamwork, leadership, proactive goal-setting training
FPC8	Non-functional/ 26% (Novice)	All managerial dimensions	<ul style="list-style-type: none"> - Complete re-training of BODs on strategic decision-making, leadership, communication - Structured mentorship and performance monitoring for revival - Training on financial management, market linkages, stakeholder engagement - Continuous capacity building for sustainable functionality

Source(s): Authors' own work

mentorship and networking opportunities. Non-functional or novice FPCs demand comprehensive retraining of Boards of Directors in managerial and operational dimensions, coupled with revival assistance through linkages with management institutes, financial planning support and continuous performance monitoring. Policies should institutionalize multi-tier training, mentorship networks and cross-learning platforms across states, ensuring a dynamic learning ecosystem that nurtures leadership pipelines and strengthens managerial resilience across all stages of FPC evolution.

7. Limitations and future research

The study is based on FPCs drawn from a specific geographical and institutional context, which may limit the generalisability of the findings. Given that the 5D-MCB captures self-reported managerial competencies of BOD members in FPCs, despite procedural safeguards, the possibility of social desirability bias – particularly in relation to leadership, decision-making and governance practices – cannot be entirely eliminated. To minimize this risk, respondents were assured of anonymity and confidentiality, and the instrument was administered by trained researchers using neutral, non-judgmental language. Participants were clearly instructed that responses would not be used for performance appraisal or regulatory purposes and that there were no right or wrong answers, encouraging reflection on actual governance practices rather than idealized roles. Nonetheless, some degree of ideal responding may persist, especially in collective institutional settings such as FPCs.

Future studies should replicate the analysis across different states and regional contexts to test the robustness and external validity of the findings under varied agro-ecological and governance environments. Further, integrating qualitative methods – such as in-depth interviews with Board members, professional managers and general FPC members – would allow triangulation of self-reported competency scores with actual governance practices, decision-making dynamics and organizational performance outcomes.

Human ethics and consent to participate declarations

The research adhered to the ethical standards for studies involving human participants. The research design, instruments, and field procedures were reviewed and approved by the Research Advisory Committee and Board of Studies, Department of Agricultural Extension, Palli Siksha Bhavana (Institute of Agriculture), Visva-Bharati (A Central University and An Institute of National Importance), Santiniketan, West Bengal, India. All respondents were informed about the purpose, scope, and voluntary nature of their participation prior to data collection. Participants were assured that their personal information and responses would remain strictly confidential and used solely for academic and research purposes. No personal identifiers have been used in the analysis or reporting of the findings. The study did not involve any physical, psychological or social risk to participants. All ethical principles concerning autonomy, confidentiality and non-maleficence were duly observed throughout the research process.

Name of the approval committee or the internal review board (IRB) of the research

The research topic was approved by the Board of Studies, Department of Agricultural Extension, Palli Siksha Bhavana (Institute of Agriculture), Visva-Bharati and Research Board, Visva-Bharati (A Central University and An Institute of National Importance), Santiniketan, West Bengal, India. The reported research was monitored by the Research Advisory Committee and Board of Studies, Department of Agricultural Extension, Palli Siksha Bhavana (Institute of Agriculture), Visva-Bharati University.

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