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Socio-Economic Appraisal of Farmer Producer Organisations (FPOs): Empirical Insights from Northern Bihar

[1]Trishita Banik, [2]Satya Prakash, [3]Sudhanand Prasad Lal and Narendra VN

[1]Dr. Rajendra Prasad Central Agricultural University, Samastipur, Bihar, India.

[2]Associate Professor, Department of Agricultural Extension Education, Post Graduate College of Agriculture, Dr. Rajendra Prasad Central Agricultural University, Pusa, Samastipur, Bihar, India

[2]Assistant Professor, Department of Agricultural Extension Education, Post Graduate College of Agriculture, Dr. Rajendra Prasad Central Agricultural University, Pusa, Samastipur, Bihar, India

[3*]National Research Centre on Mithun (ICAR), Medziphema, Nagaland, India

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Corresponding Author: Narendra VN

Abstract

The study investigates the socio-economic impact of Farmer Producer Organizations (FPOs) on small and marginal farmers in northern Bihar, focusing on Muzaffarpur and Samastipur districts. These regions were chosen for their high poverty rates and limited resource accessibility, critical factors influencing the effectiveness of FPO interventions. Through a comprehensive analysis involving six selected FPOs and a diverse sample of 240 farmers, the research reveals significant insights. The findings indicate that FPO membership positively influences farmers' socio-economic conditions, enhancing livelihoods, income levels, and agricultural sustainability. Key demographic factors such as age distribution (predominantly middle-aged farmers), educational background (diverse, with a notable proportion having completed high school), and landholding sizes (dominated by small and marginal farmers) underscore the inclusive nature of FPOs in catering to varied farmer needs. Moreover, the study highlights the proactive engagement of FPO members in group activities, information-seeking behavior, and adoption of innovative farming practices, all contributing to improved decision-making, market access, and overall community resilience. These insights are crucial for policymakers and practitioners aiming to strengthen support mechanisms and optimize the impact of FPOs in transforming agricultural landscapes and enhancing rural livelihoods in disadvantaged regions like northern Bihar.

Keywords: Farmer Producer Organizations (FPOs), Socio-economic impact, Small and marginal farmer, Northern Bihar, Livelihoods.

1. Introduction

In many developing regions, including Bihar in northern India, small and marginal farmers face significant challenges such as fragmented landholdings, limited access to markets and resources, and low bargaining power. Farmer Producer Organizations (FPOs) have emerged as a collective strategy to address these issues by pooling resources and enhancing farmers' market access, input procurement, and overall socio-economic well-being. This study investigates the impact of FPOs on the socio-economic conditions of farmers in northern Bihar, focusing on Muzaffarpur and Samastipur districts. These districts were purposively selected due to their high poverty rates and limited resource accessibility, which are critical factors influencing the effectiveness of FPO interventions. By examining these contexts, the research aims to provide empirical insights into how FPOs contribute to improving livelihoods, income levels, and agricultural sustainability among smallholder farmers. The study encompasses a diverse sample of FPOs and farmers, utilizing an ex-post-facto research design to explore the nuanced socio-economic dynamics shaped by FPO membership and operations. Understanding these dynamics is crucial for informing policy and practice aimed at enhancing the resilience and prosperity of smallholder farmers through collective action and institutional support provided by FPOs

2. Methodology

This study adopts an ex-post-facto research design to systematically examine the socio-economic impact of Farmer Producer Organizations (FPOs) on farmers in the northern region of Bihar. The research focuses on Muzaffarpur and Samastipur districts, strategically selected for their high poverty rates and limited resource accessibility, which significantly influence the effectiveness of FPOs. Specific blocks within these districts-Saraiya, Marwan, Kanthi in Muzaffarpur, and Pusa, Warisnagar, Kalyanpur in Samastipur-were chosen to capture diverse socio-economic contexts. Six FPOs were purposively selected: Saraiya Kisan Farmer Producer Company Limited, Climate Resilient Agriculture Farmers Producer Company LTD., Kanti Kisan Producer Company Limited, Krishi

Utpadak Producer Company Limited, Adarsh Jiva Bikash Krishi Bagbani Swabalambi Sahakari Samiti Limited, and Pusa Farmer Producer Company Limited, covering a range of agricultural commodities. A total of 240 respondents, with 40 from each FPO, were randomly sampled to ensure a representative socio-economic cross-section of farmers. This methodological approach aims to provide comprehensive insights into how FPOs impact the socio-economic conditions and livelihoods of small and marginal farmers in Bihar's disadvantaged regions.

3. Results and Discussion

3.1 Socio-economic Status and Personal Characteristics of Selected Farmers

3.1.1 Age: The study area's farmer population shows a predominant presence of middle-aged individuals (35-55 years), comprising 53.8% of the respondents. Young farmers (18-35 years) make up 32.9%, while those above 55 years constitute 13.3% of the sample.

Table 1: Distribution of respondents according to their age

SL. No	Category	Frequency (N=240)	Percentage (%)
1.	Young Age (18-35yrs)	79	32.9
2.	Middle Age (>35-55yrs)	129	53.8
3.	Old Age (Above 55 yrs)	32	13.3

The demographic distribution reveals that middle-aged farmers are prominently represented within Farmer Producer Organizations (FPOs), constituting more than half of the sample. Their involvement can be attributed to their extensive experience in agriculture and family management, motivating them to join FPOs to enhance farm profitability and sustainability through the adoption of modern agricultural practices. The findings were in agreement with the results of studies conducted by Raghavendra *et al.* (2005) [2], Bikadakatti *et al.* (2011) [2], Akkamahadevi (2016) [4].

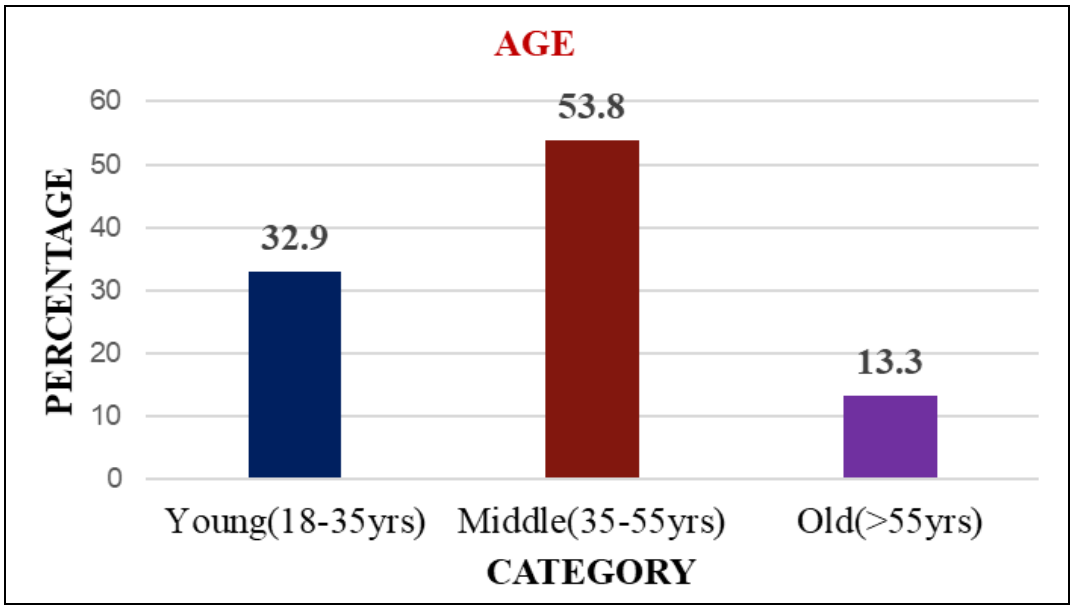

Fig 1: Classification of respondents according to Age

3.1.2. Education

The education levels among respondent farmers show a diverse distribution, with the majority having completed high school (37.1%), followed by those who have completed primary school (23.8%) and higher secondary education (16.7%). A smaller proportion includes graduates (4.6%), while 16.7% can read and write. The data indicate a varied educational background among members of Farmer Producer Organizations (FPOs), highlighting significant levels of education beyond basic literacy.

Table 2: Distribution of respondents according to their education

SL. No	Category	Frequency (N=240)	Percentage (%)
1.	Illiterate	3	1.3
2.	Can read and write	40	16.7
3.	Primary School	57	23.8
4.	High School	89	37.1
5.	Higher secondary	40	16.7
6.	Graduate and above	11	4.6

The diverse educational background observed among FPO members underscores their readiness to adopt innovations and embrace changes in agricultural practices. Educated farmers, particularly those with higher levels of education, are more likely to participate actively in FPOs. Their involvement signifies a proactive approach in leveraging collective efforts for socio-economic advancement within the agricultural sector. Similar results were observed in the study of Raghavendra *et al.* (2005) [2], Gopinath (2005), Bikadakatti *et al.* (2011) [2], Akkamahadevi (2016) [4].

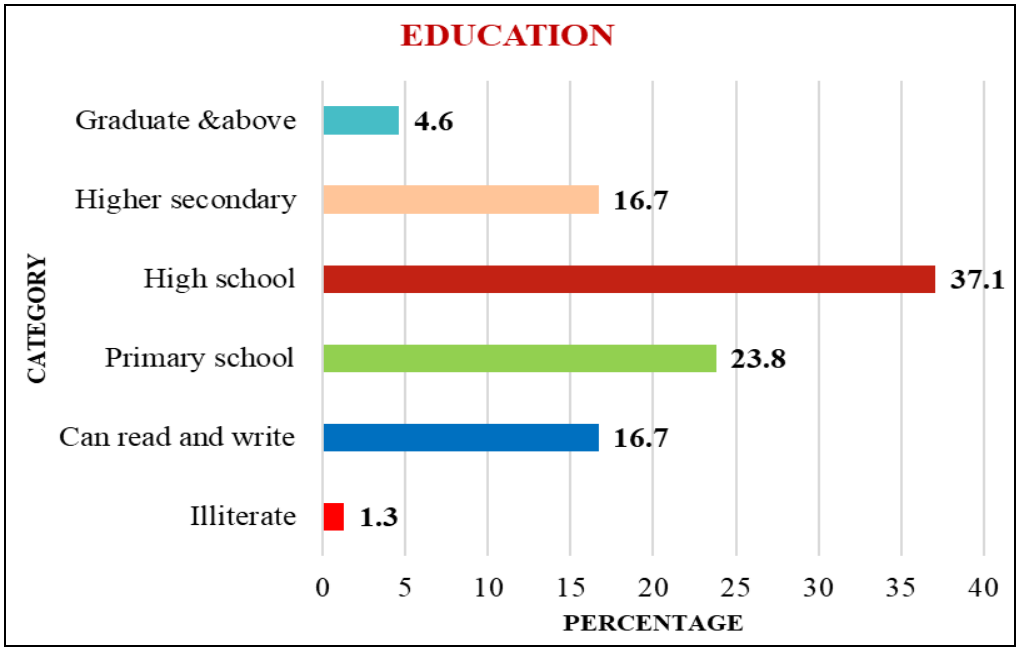

Fig 2: Representation of the respondents according to their Education

3.1.3. Caste

The distribution of respondents according to caste shows a predominance of the general category (46.28%), followed by Other Backward Classes (OBC) comprising 34.22%. Scheduled Castes (SC) account for 16.7% of the respondents, while Scheduled Tribes (ST) constitute 2.8%.

Table 3: Distribution of respondents according to their caste

SL No	Category	Frequency (N=240)	Percentage (%)
1.	General	111	46.28
2.	OBC	82	34.22
3.	SC	40	16.7
4.	ST	7	2.8

The predominance of the general category among FPO members reflects broader socio-economic dynamics influencing membership patterns. This distribution underscores the need for inclusive development strategies within FPOs to ensure equitable participation and benefits across different caste groups. Understanding these demographic patterns is crucial for designing interventions that promote inclusive growth and mitigate socio-economic disparities among agricultural communities. The findings inline with the results for Darshan, 2019 [3].

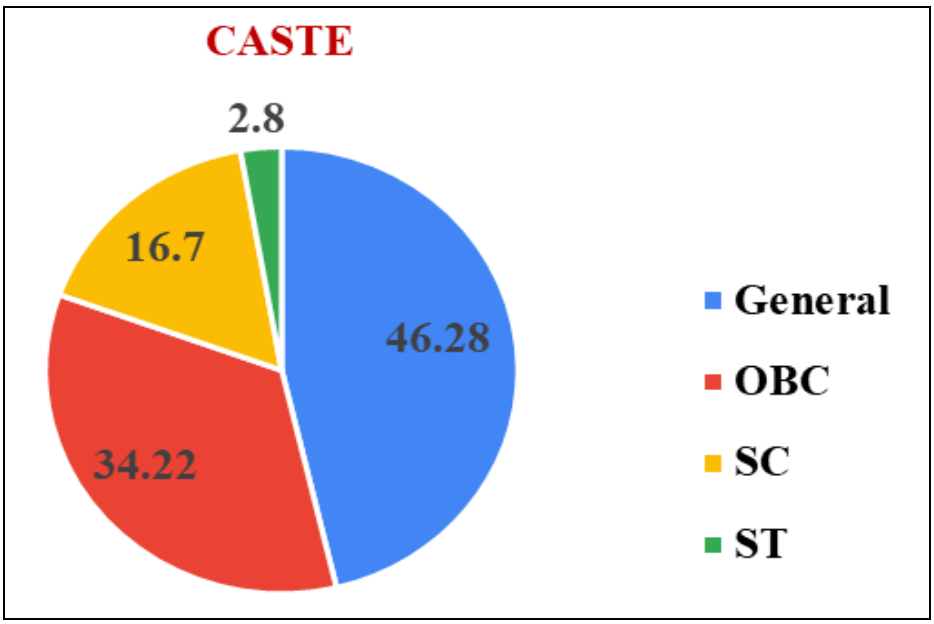

Fig 3: Categorization of the respondents according to their caste

3.1.4. Landholding

The distribution of respondents according to landholding categories within FPOs shows that 48.3% are marginal farmers (less than 1 hectare), 25.4% are small farmers (1-2 hectares), 6.3% are semi-medium farmers (2-4 hectares), 17.5% are medium farmers (4-10 hectares), and 2.5% are large farmers (more than 10 hectares).

Table 4: Classification of members of FPOs according to landholding

SL No	Category	Frequency (N=240)	Percentage (%)
1.	Marginal(<1 ha)	116	48.3
2.	Small(1-2 ha)	61	25.4
3.	Semi medium(2-4 ha)	15	6.3
4.	Medium(4-10 ha)	42	17.5
5.	Large(>10 ha)	6	2.5

The dominance of small and marginal farmers within FPOs underscores the pivotal role these organizations play in supporting economically vulnerable agricultural segments. By facilitating collective action and pooling of resources, FPOs empower smaller farmers to enhance their market access, adopt modern technologies, and improve their overall economic resilience and sustainability. This distribution highlights the importance of tailored support mechanisms within FPOs to address the specific needs and challenges faced by different categories of farmers based on their landholding sizes. Similar results were observed in the studies of Bikadakatti *et al*. (2011) [2], Akkamahadevi (2016) [4] and Rajput *et al*. (2016) [5].

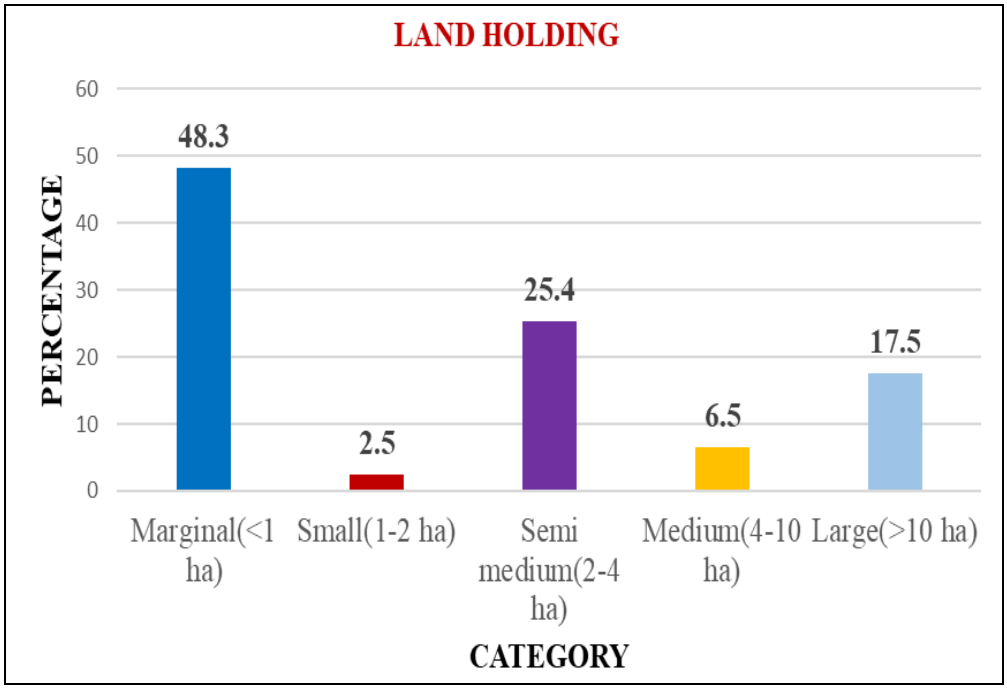

Fig 4: Representation of the respondents of FPOs according to landholding

3.1.5. Family Size

The distribution of respondents according to family size categories within FPOs shows that 24.6% belong to small families (<5 members), 68.3% to medium-sized families (5-8 members), and 7.1% to large families (>8 members).

Table 5: Distribution of farmers according to their family size

SL No	Category	Frequency (N=240)	Percentage (%)
1.	Small(<5 members)	59	24.6
2.	Medium(5-8)	164	68.3
3.	Large(>8)	17	7.1

The prevalence of medium-sized families among FPO members reflects the typical household structure in the study area. FPOs play a crucial role in accommodating and supporting diverse family sizes, thereby facilitating socio-economic advancement through collective farming initiatives and shared resource management. This distribution underscores the importance of FPOs in catering to the varied needs and dynamics of agricultural households, promoting inclusivity and community resilience. The results of the study were in agreement with that of studies of Sidram (2008) and Bikadakatti *et al*. (2011) [2].

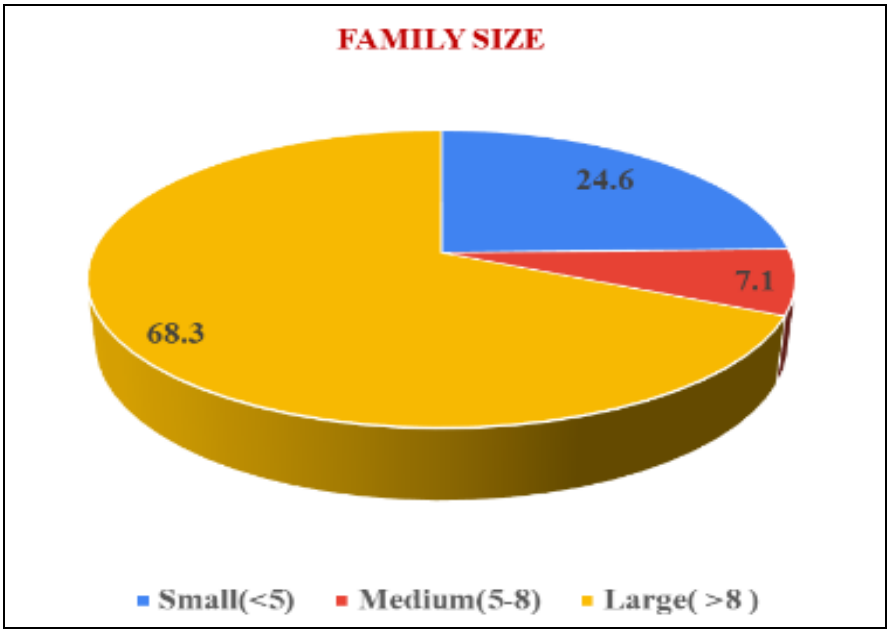

Fig 5: Representation of the respondents of FPOs according to member's family size

3.1.6. Farming Experience

The distribution of respondents according to farming experience categories within FPOs reveals that 27.5% have low experience (15-23 years), 40% have medium experience (24-31 years), and 32.5% have high experience (32-39 years).

Table 6: Categorization of respondents according to farming experience

Sl. No	Category(yrs.)	Frequency (N=240)	Percentage (%)
1.	Low(15-23)	66	27.5
2.	Medium(24-31)	96	40
3.	High(32-39)	78	32.5

The distribution of farming experience among FPO members reflects a blend of seasoned and relatively newer farmers actively engaged in collective farming initiatives. This diversity in experience levels within FPOs facilitates the exchange of knowledge and adoption of innovative agricultural practices, contributing to enhanced productivity and resilience in farming operations. Experienced farmers bring valuable insights and leadership, while newer members contribute fresh perspectives and enthusiasm, collectively driving the agricultural development agenda forward. The study of Bikadakatti *et al*. (2011) [2] also expressed similar results as that of the present study.

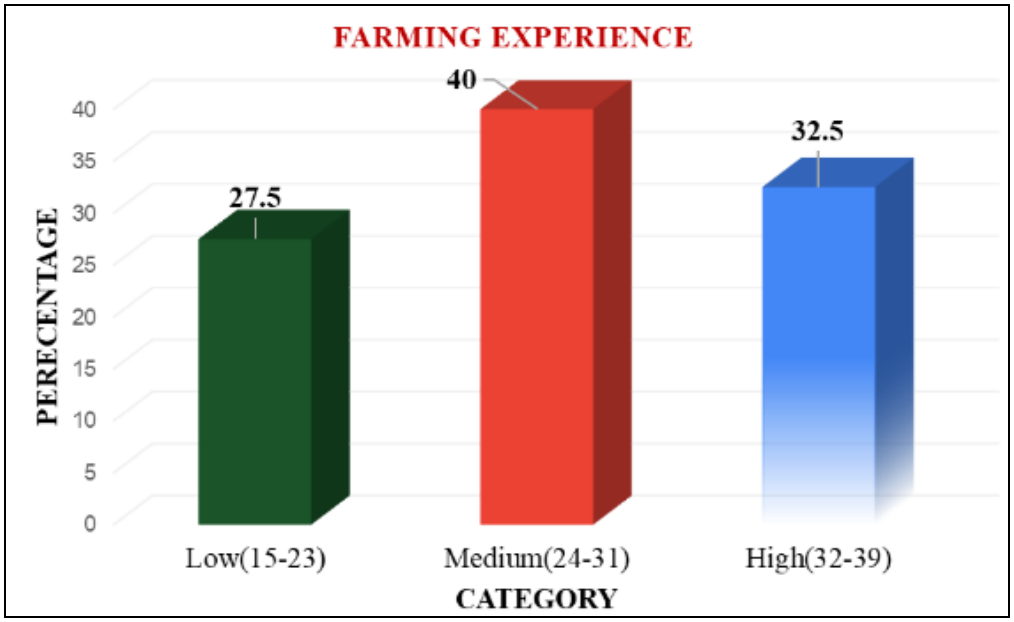

Fig 6: Representation of the respondents of FPOs according to farming experience

3.1.7. Farm Mechanization

The distribution of FPO members according to farm

mechanization status reveals that 15.83% have low mechanization levels (6-11), 60% have medium mechanization levels (12-17), and 24.17% have high mechanization levels (18-23).

Table 7: Categorization of respondents according to farm mechanization status

SL. NO	Category	Frequency (N=240))	Percentage(%)
1.	Low(6-11)	38	15.83
2.	Medium(12-17)	144	60
3.	High(18-23)	58	24.17

The distribution of farm mechanization levels among FPO members highlights a significant adoption of modern farming techniques, with 84.17% of members categorized under medium to high mechanization levels. This adoption trend suggests a positive inclination towards improving agricultural efficiency and productivity through mechanized practices. However, the presence of farmers with low mechanization levels underscores existing challenges and the need for targeted interventions to enhance mechanization adoption across all members. Initiatives focusing on capacity building, access to affordable machinery, and technical support can further accelerate mechanization efforts within FPOs, thereby bolstering overall agricultural sustainability and competitiveness. The current study results in line with the findings of Darshan (2019) [3].

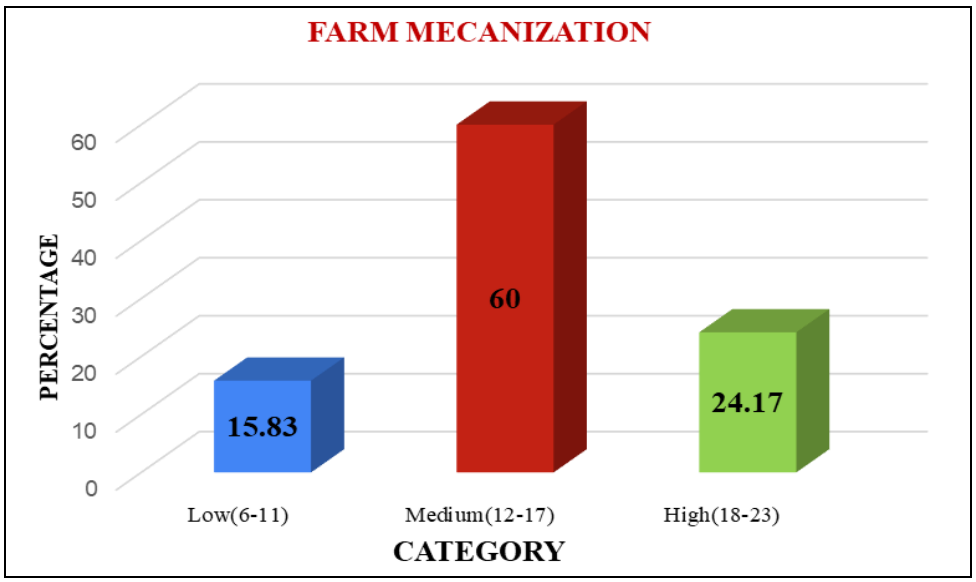

Fig 7: Distribution of FPO members according to their Farm Mechanization Status.

3.1.8Annual Income

The distribution of respondents according to annual income levels shows that the majority of FPO members fall within the medium (41.25%) and high (26.6%) income categories. This distribution reflects the positive economic impact of FPO membership, enabling farmers to secure better market prices, reduce input costs through collective purchasing, and access financial support more effectively. The income levels highlight the role of FPOs in improving farmers' economic stability and livelihoods.

Table 8: Categorization of respondents according to annual income

SL. No	Category	Frequency (N=240)	Percentage (%)
1.	Very low (<82,000)	26	10.84
2.	Low (82001-124001)	33	13.75
3.	Medium (1,24,002-1,66,002)	99	41.25
4.	High (1,66003-2,08,003)	64	26.6
5.	Very High (2,08,004-2,50,004)	18	7.5

The significant proportion of FPO members in the medium and high-income categories underscores the effectiveness of collective action in enhancing agricultural profitability. By leveraging collective bargaining power and shared resources, FPOs empower farmers to overcome market challenges and achieve higher income levels. This outcome aligns with studies emphasizing the economic benefits of collective farming organizations. Moving forward, sustaining and expanding these economic gains requires continued support for market access, financial inclusion, and capacity building within FPOs. Similar results were observed in the studies of Bikadakatti *et al.* (2011) [2], Akkamahadevi (2016) [4] and Rajput *et al.* (2016) [5].

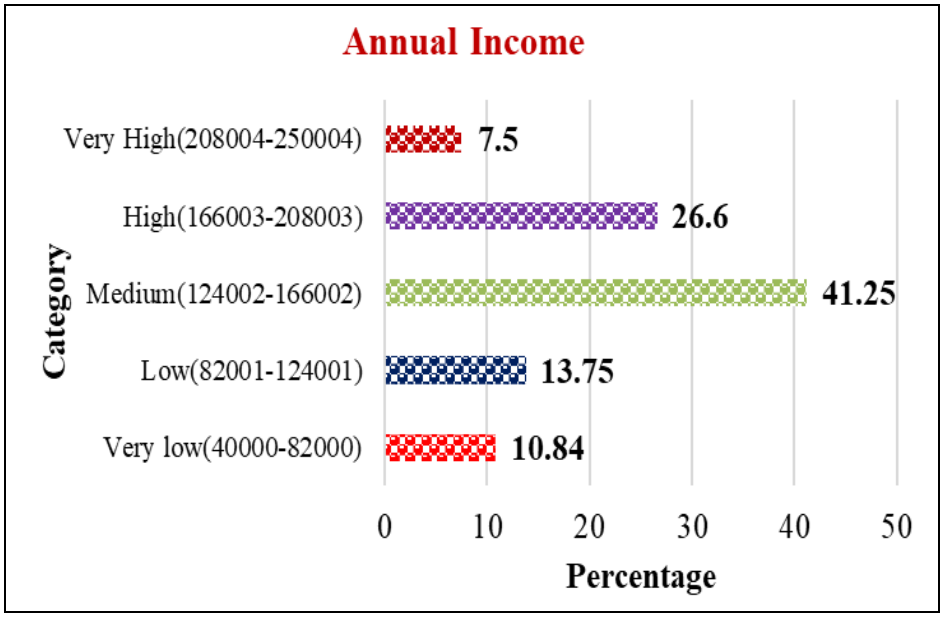

Fig 8: Distribution of FPO Farmers according to their annual income

3.1.9. Participation in Groups

The distribution of respondents based on their participation levels in various groups within FPOs shows that a significant number exhibit medium (50%) to high (33.75%) participation. This active engagement underscores the collaborative spirit and collective efforts driving FPO success, fostering knowledge exchange, skill development, and community support among members.

Table 9: Categorization of respondents according to participation in groups

SL. No	Category	Frequency (N=240))	Percentage (%)
1.	Low(8-13)	39	16.25
2.	Medium(14-19)	120	50
3.	High(20-25)	81	33.75

The medium levels of participation observed among FPO members highlight the strong sense of community and shared responsibility within these organizations. Active engagement in group activities facilitates learning and innovation, enhances decision-making processes, and strengthens social capital among farmers. These findings are consistent with research emphasizing the role of participatory approaches in promoting sustainable agricultural development. Enhancing participation levels further requires ongoing efforts to foster inclusive governance, transparent communication, and opportunities for skill enhancement within FPOs. Similar results were observed in the studies of Raghavendra *et al*. (2005) [2] and Bikadakatti *et al*. (2011) [2].

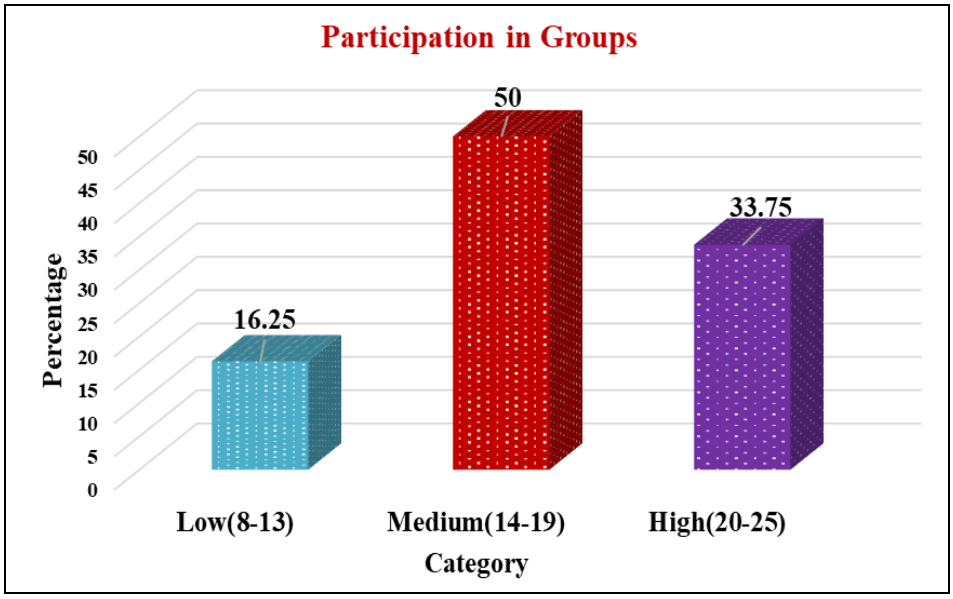

Fig 9: Distribution of FPO Farmers according to their participation in groups

3.1.10. Information Seeking Behavior

The categorization of respondents according to their information-seeking behavior reveals that a majority demonstrate medium (43.75%) to high (35.83%) levels of information-seeking behavior. This proactive approach indicates a strong interest among FPO members in acquiring knowledge, adopting new agricultural practices, and staying updated with technological advancements.

Table 10: Categorization of respondents according to information seeking behavior

SL. No	Category	Frequency (N=240))	Percentage (%)
1.	Low (8-13)	49	20.42
2.	Medium (14-19)	105	43.75
3.	High (20-25)	86	35.83

The prevalence of medium to high information-seeking behavior reflects FPO members' readiness to embrace innovation and improve farm management practices. Access to timely and relevant information enhances decision-making, supports adaptive strategies to climate change, and fosters sustainable agricultural practices. Promoting information literacy and providing reliable extension services are essential to sustain this proactive behavior, ensuring that FPOs remain adaptive and resilient in dynamic agricultural landscapes. The findings were in agreement with the results of studies conducted by Bikadakatti *et al*. (2011) [2], and Rajput *et al*. (2016) [5].

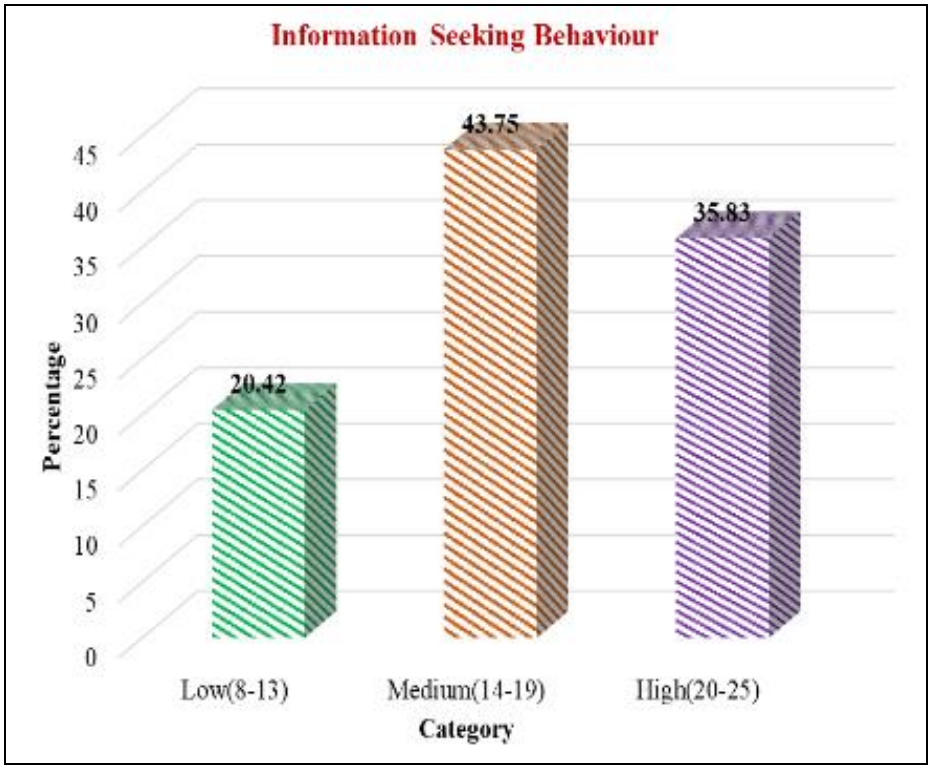

Fig 10: Distribution of FPO Farmers according to their Information seeking behaviour

3.1.11. Leadership Ability

The distribution of respondents according to their leadership ability shows that a significant majority (42.08%) possess high leadership ability, followed by medium (35%) and low (22.92%) categories. This distribution underscores the diverse leadership strengths within FPOs, crucial for organizational effectiveness and member engagement.

Table 11: Categorization of respondents according to leadership ability

SL. No	Category	Frequency (N=240))	Percentage (%)
1.	Low (10-16)	55	22.92
2.	Medium (17-23)	84	35
3.	High (24-30)	101	42.08

High levels of leadership ability among FPO members facilitate effective decision-making, strategic planning, and mobilization of collective action towards common goals. Strong leadership fosters innovation, builds trust among members, and enhances the overall resilience of agricultural organizations. Developing leadership skills through training programs, mentorship, and inclusive governance structures is essential to nurture future leaders and sustain the long-term impact of FPOs on rural development. The findings align with the outcomes of Darshan, (2019) [3].

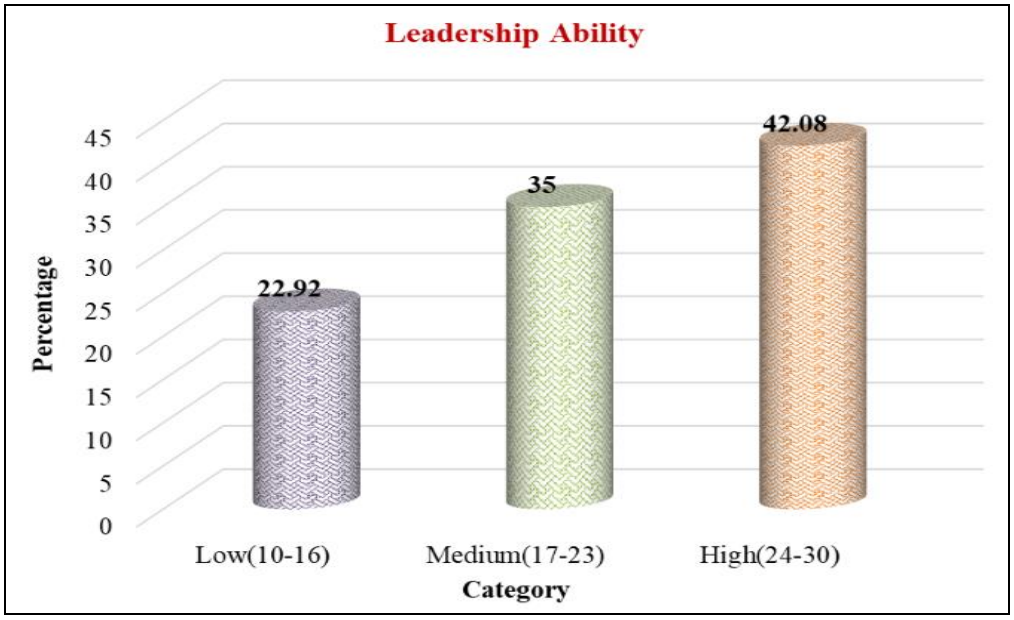

Fig 11: Distribution of FPO farmers according to their leadership ability

3.1.12. Risk Orientation

The categorization of respondents based on their risk orientation reveals that a majority (52.5%) exhibit medium risk orientation, followed by high (34.58%) and low (12.92%) orientations. This distribution reflects farmers' attitudes towards adopting innovative practices and managing agricultural risks effectively.

Table 12: Categorization of respondents according to risk orientation

SL. No	Category	Frequency (N=240))	Percentage (%)
1.	Low (7-11)	31	12.92
2.	Medium (12-16)	126	52.5
3.	High (17-21)	83	34.58

The categorization of FPO farmers based on risk orientation reveals a predominant medium risk orientation (52.5%), followed by high (34.58%) and low (12.92%) orientations. This distribution underscores farmers' readiness to adopt innovative practices and manage agricultural risks effectively. Medium to high levels of risk orientation indicate a proactive approach towards leveraging new opportunities and integrating technology in agricultural operations. Cultivating an environment that supports informed risk-taking while mitigating potential hazards is essential for enhancing agricultural productivity, fostering resilience, and sustaining competitiveness within FPOs. Similar results were observed in the studies of Chidananda (2008), Sidram (2008) [2] and Akkamahadevi (2016) [4].

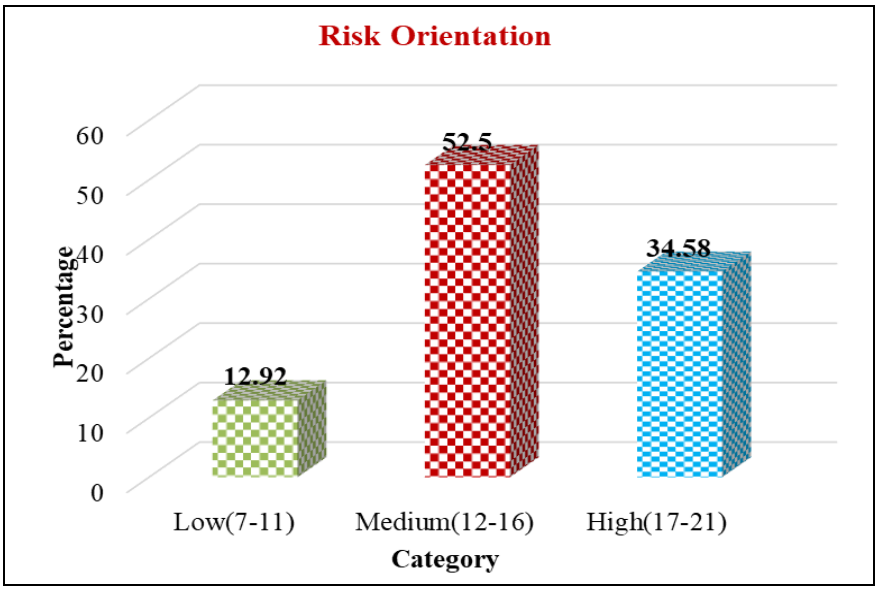

Fig 12: Distribution of FPO Farmers according to their leadership ability

3.1.13. Innovativeness

The distribution of respondents according to their innovativeness shows that a majority (56.67%) possess medium innovativeness, followed by high (38.75%) and low (4.58%) levels. This distribution highlights the propensity of FPO members to adopt new agricultural technologies and practices.

Table 13: Categorization of respondents according to Innovativeness

SL. No	Category	Frequency (N=240))	Percentage (%)
1.	Low(4-6)	11	4.58
2.	Medium(7-9)	136	56.67
3.	High(10-12)	93	38.75

This distribution underscores the willingness of farmers to embrace new agricultural technologies and practices. Medium to high levels of innovativeness among FPO members highlight their proactive approach to adopting and adapting to new methods, driving productivity, resource efficiency, and sustainability in agricultural practices. Building robust innovation ecosystems through collaborative research, technology dissemination, and farmer-driven experimentation is essential to harnessing the transformative potential of FPOs in agricultural development and improvement. The findings were in agreement with the results of studies conducted by Sidram (2008) [2] and Akkamahadevi (2016) [4].

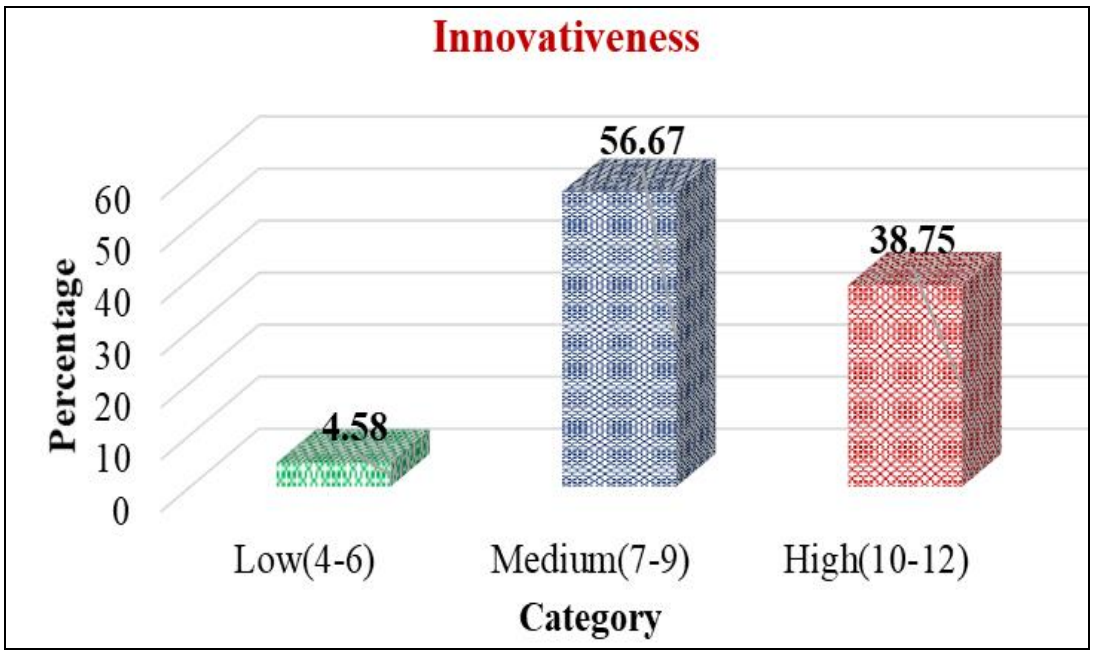

Fig 13: Distribution of FPO Farmers according to their innovativeness

3.1.14. Achievement Motivation

The categorization of respondents based on their achievement motivation reveals that a majority (55.42%) demonstrate medium motivation, followed by high (25.48%) and low (20%) levels. This distribution reflects farmers' drive to set and achieve goals for personal and organizational growth.

Table 14: Categorization of respondents according to innovativeness

SL. No	Category	Frequency (N=240))	Percentage (%)
1.	Low (6-10)	11	20
2.	Medium (11-15)	136	55.42
3.	High (16-20)	93	25.48

This breakdown underscores farmers' strong drive to set and achieve goals, essential for personal and organizational growth in agriculture. Medium to high levels of achievement motivation indicate a proactive approach towards enhancing agricultural practices, improving productivity, and achieving economic prosperity. Motivated farmers are more likely to adopt innovative techniques, participate actively in learning opportunities, and contribute effectively to the success of FPO initiatives. To sustain and amplify this motivation, fostering an environment that recognizes accomplishments, offers continuous training, and facilitates market access is crucial for leveraging the potential of FPOs in advancing rural livelihoods and agricultural development. The obtained results similar to the findings of Akkamahadevi (2016) [4].

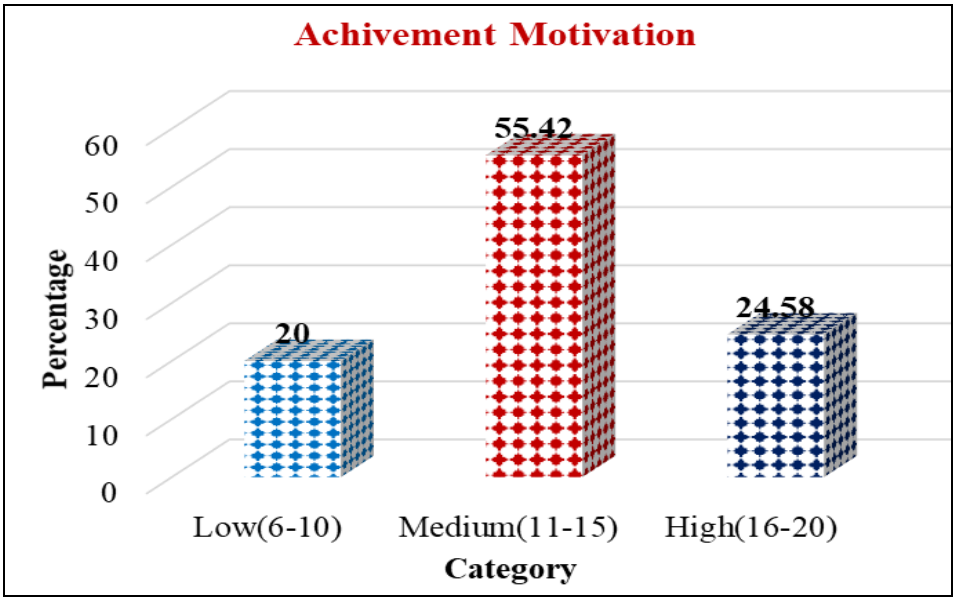

Fig 14: Distribution of FPO Farmers according to their Achievement Motivation

3.1.15. Self-Confidence

The distribution of FPO members according to their self-confidence levels shows that a majority possess medium (58.33%) to high (32.92%) self-confidence, with a minority exhibiting low (8.75%) levels. This distribution underscores the self-assurance and belief in capabilities among FPO members.

Table 15: Distribution of FPO members according to self-confidence

SL. No	Category	Frequency (N=240)	Percentage (%)
1.	Low (8-12)	21	8.75
2.	Medium (13-17)	140	58.33
3.	High (18-22)	79	32.92

The distribution of self-confidence levels among FPO members reveals that a majority (58.33%) possess medium self-confidence, with 32.92% exhibiting high levels and a smaller proportion (8.75%) demonstrating low levels. This distribution highlights the significant self-assurance and belief in capabilities among FPO farmers. Medium to high levels of self-confidence empower farmers to take proactive steps, make sound decisions, and effectively manage challenges in agricultural practices. Individuals with higher self-confidence are more inclined to embrace risks, seek out new opportunities, and actively contribute to the collective achievements of FPOs. Strengthening self-confidence through targeted skill development, mentorship programs, and peer support networks is crucial for nurturing leadership qualities and enhancing resilience within agricultural communities. The findings inline with the outcomes of Darshan (2019) [3].

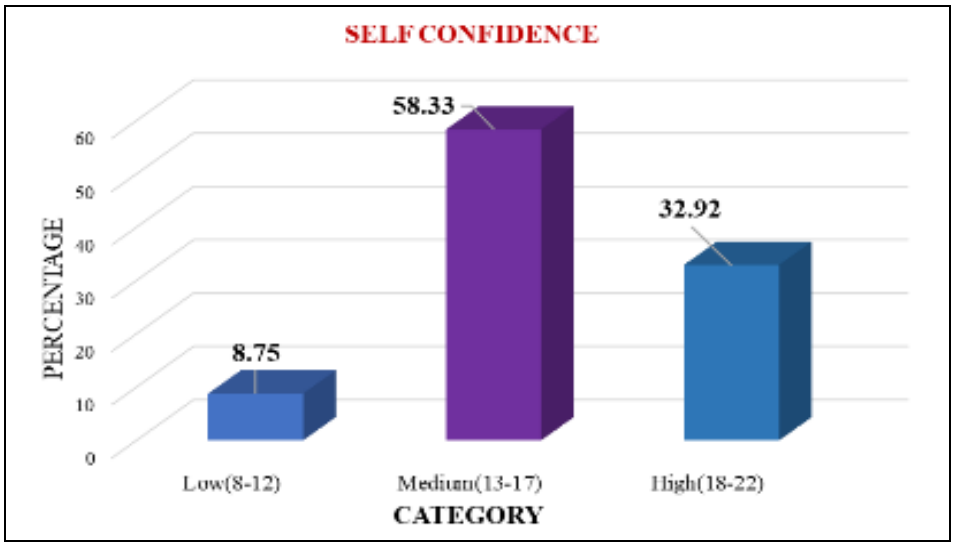

Fig 15: Distribution of FPO Farmers according to their self-confidence

3.1.16. Decision-Making Power

The distribution of FPO members based on their decision-making power reveals that a majority (51.25%) have medium authority, followed by high (41.67%) and low (7.08%) levels. This distribution reflects the decentralized decision-making structure within FPOs.

Table 16: Distribution of FPO members according to their decision making power

SL No	Category	Frequency (N=240)	Percentage (%)
1.	Low(6-9)	17	7.08
2.	Medium(10-13)	123	51.25
3.	High(14-17)	100	41.67

The distribution of decision-making power among FPO members underscores a dynamic organizational structure where leadership roles vary significantly. High decision-making authority among 41.67% of members highlights their pivotal role in steering strategic initiatives and resource allocation, crucial for achieving collective goals. Meanwhile, 51.25% holding medium authority signifies a strong base of operational leadership, ensuring local-level alignment with broader organizational strategies. The presence of 7.08% with low decision-making power signals opportunities for enhancing inclusivity and empowering all members in governance processes. This decentralized approach not only enhances responsiveness to local agricultural challenges but also fosters a culture of ownership and innovation within FPOs, essential for sustainable rural development. Sidram (2008) [2] obtained the similar results of current study.

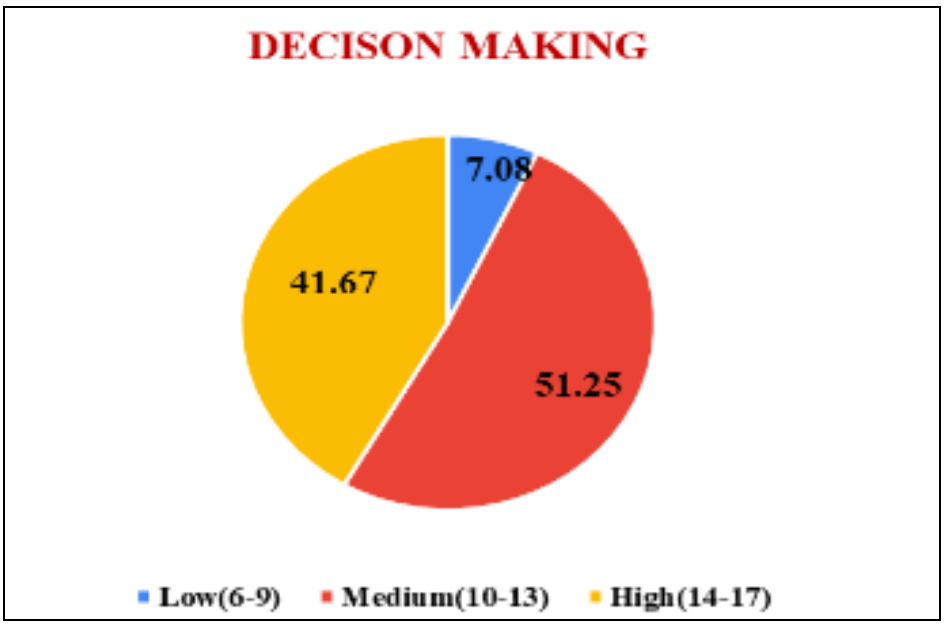

Fig 16: Graphical Representation of FPO members according to their Decision Making Power

3.1.17. Capacity Building

The classification of FPO members based on their capacity building levels indicates a significant distribution across different categories. Specifically, 47.92% of members exhibit medium capacity, 35% demonstrate high capacity, and 17.08% operate at a lower capacity.

Table 17: Classification of FPO members according to capacity building

SL No	Category	Frequency (N=240)	Percentage (%)
1.	Low (5-8)	41	17.08
2.	Medium (9-12)	115	47.92
3.	High (13-16)	84	35

The distribution of capacity building levels among FPO members underscores both strengths and opportunities for enhancing organizational effectiveness and sustainability. Medium-capacity members, comprising nearly half of the cohort, form the operational backbone, ensuring day-to-day functionality and adherence to standards. Their role is crucial in maintaining stability and operational efficiency. In contrast, high-capacity members, representing a substantial proportion, drive innovation, strategic decision-making, and external partnerships, essential for market access and sustainable development. However, the presence of members operating at lower capacities highlights the need for targeted interventions like training and knowledge exchange to bridge skill gaps. Addressing these challenges can strengthen FPOs' resilience, promote inclusive growth, and optimize their role in fostering agricultural transformation and rural development. The findings similar to the results of Mohanakumara, *et al.*(2016).

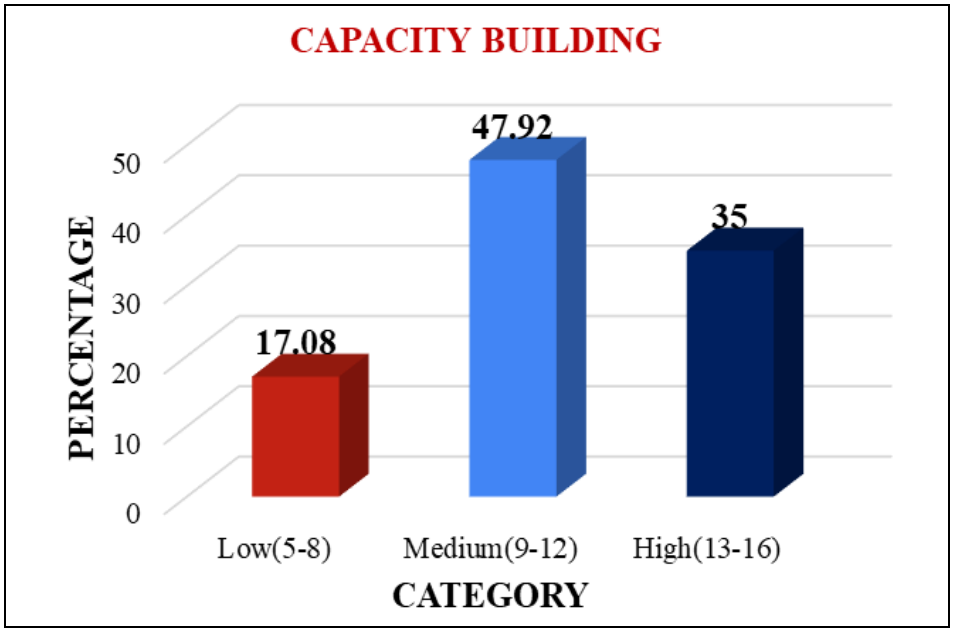

Fig 17: Graphical Representation of FPO members according to capacity building

3.1.18. Group Role Differentiation

The distribution of FPO members based on group role differentiation reveals that a significant majority (57.08%) exhibit medium differentiation, indicating clear and defined roles within the organization. High differentiation levels, observed in 26.25% of members, underscore advanced specialization and leadership roles crucial for strategic decision-making and innovative initiatives within FPOs.

Table 18: Categorization of FPO members according to Group role differentiation

SL No	Category	Frequency (N=240)	Percentage (%)
1. 1	Low	40	16.67%
2.	Medium	137	57.08%
3.	High	63	26.25%

Effective group role differentiation within FPOs is crucial for optimizing efficiency and fostering a collaborative environment. Clear role definitions enhance accountability, minimize redundancy, and promote synergy among members, facilitating effective resource utilization and goal attainment. Addressing challenges associated with lower differentiation levels requires targeted interventions such as tailored training and structured leadership development initiatives. Cultivating a culture of clarity and mutual respect enhances organizational cohesion, positioning FPOs as key drivers of rural development and agricultural sustainability. The findings align with the outcomes of Darshan (2019) [3].

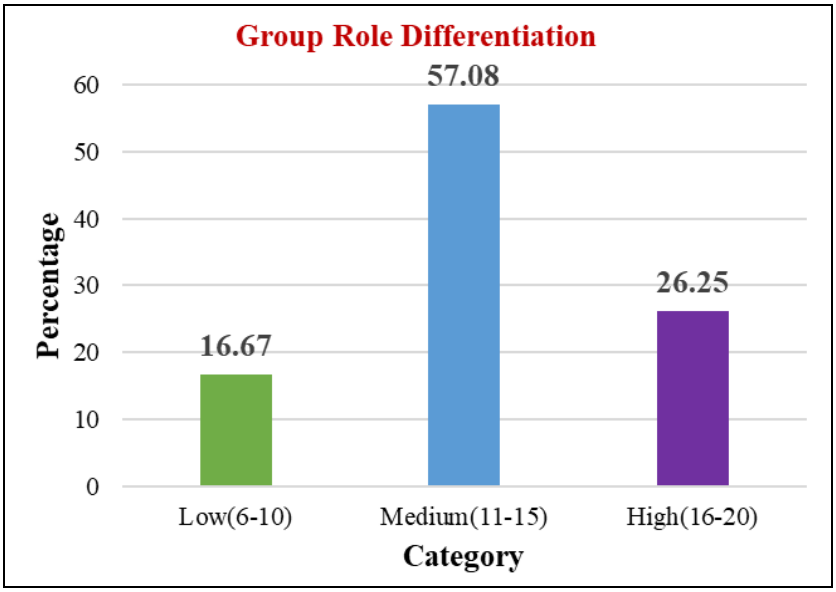

Fig18: Graphical Representation of FPO members according to group role differentiation

3.1.19 Group Leadership

The categorization of FPO members based on group leadership reveals a distribution where 48.75% demonstrate moderate leadership skills, followed by 38.33% exhibiting high leadership capabilities. Conversely, 12.92% exhibit low proficiency in leadership roles.

Table 19: Classification of FPO members according to group leadership.

SL No	Category	Frequency (N=240)	Percentage (%)
1.	Low	31	12.92
2.	Medium	117	48.75
3.	High	92	38.33

Effective leadership within FPOs is fundamental to organizational resilience and sustainable development. Members with moderate to high leadership skills play pivotal roles in fostering collaboration, driving innovation, and ensuring efficient decision-making processes. These leaders are instrumental in navigating challenges, optimizing resources, and maximizing collective outcomes. Strengthening leadership capacities through targeted training, mentorship, and fostering a culture of empowerment is crucial for sustaining cohesive teamwork and enhancing the overall impact of FPOs on rural communities. The obtained results similar to the findings of Rajput *et al.* (2016) [5].

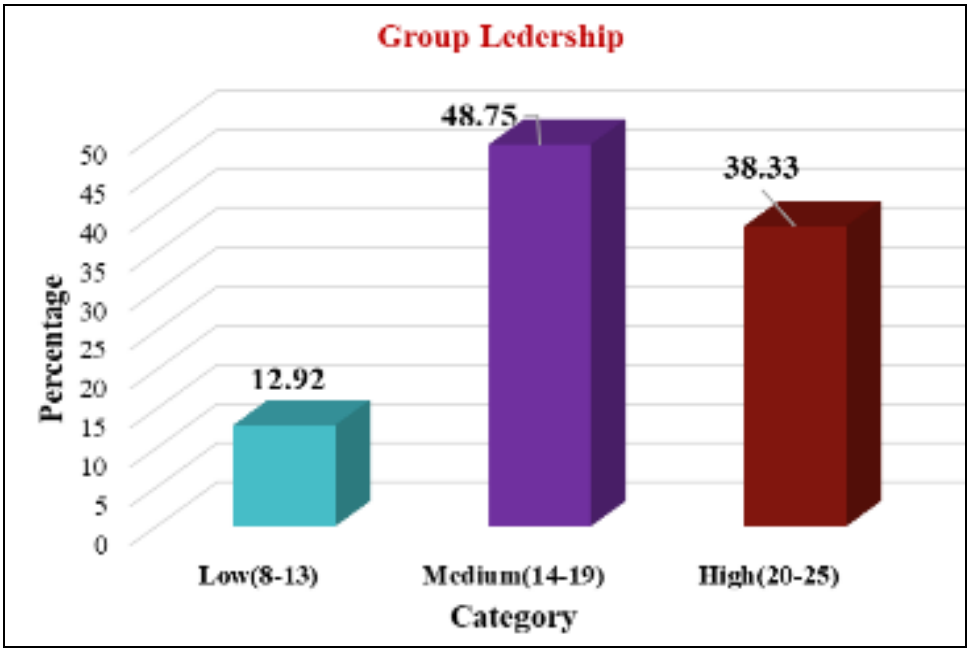

Fig 19: Graphical representation of FPO members according to group leadership

3.1.20 Communication Process

The classification of FPO members based on their communication process shows that 53.33% exhibit moderate communication proficiency, while 44.59% demonstrate high communication effectiveness. Only 2.08% of members show low levels of communication skills.

Table 20: Categorization of FPO members according to communication process

SL. No	Category	Frequency (N=240)	Percentage (%)
1.	Low	5	2.08
2.	Medium	128	53.33
3.	High	107	44.59

Communication processes within Farmer Producer Organizations (FPOs) play a pivotal role in shaping organizational dynamics and fostering collective efficacy (Rajput *et al*., 2016; Gopinath, 2005) [5]. This study reveals a predominant trend towards moderate to high levels of communication proficiency among members, reflecting robust channels for information dissemination, decision-making, and collaborative action. Such effective communication not only enhances operational efficiency but also cultivates a culture of transparency and shared responsibility within FPOs. By nurturing communication skills and leveraging technological advancements, FPOs can strengthen their capacity to navigate agricultural challenges, harness collective knowledge, and drive sustainable development initiatives that benefit rural communities. The results in line with the findings of Darshan (2019) [3].

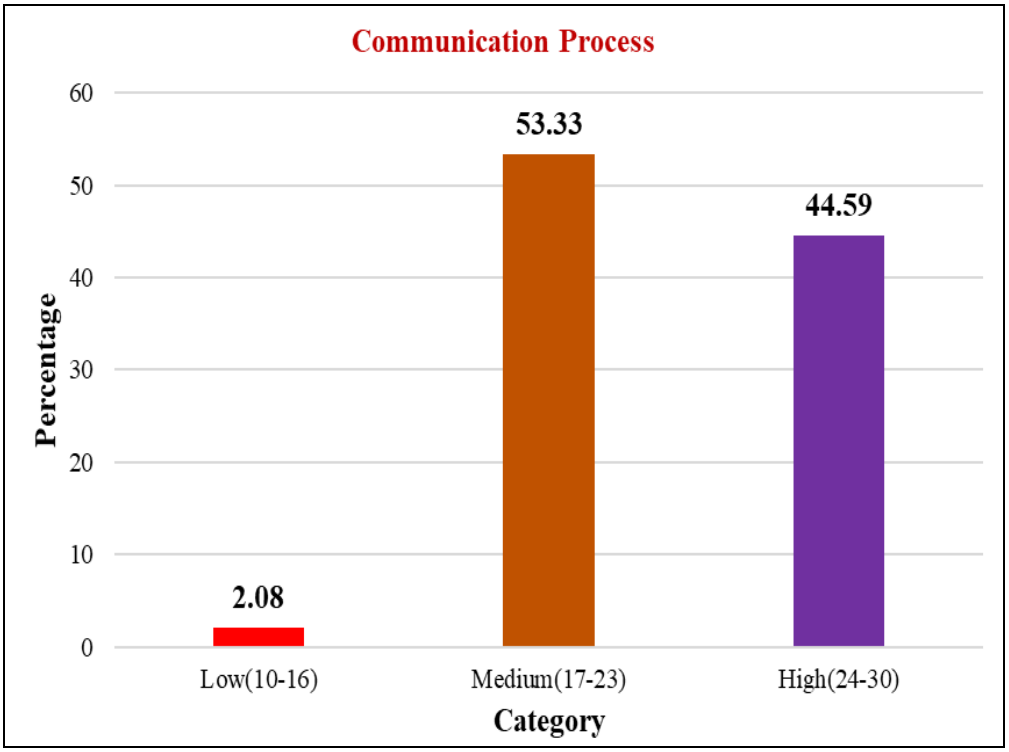

Fig 20: Graphical Representation of FPO members according to communication process

4. Conclusion

The study investigates the impact of Farmer Producer Organizations (FPOs) on smallholder farmers in Bihar's Muzaffarpur and Samastipur districts, addressing challenges such as fragmented landholdings and limited market access. By employing an ex-post-facto research design, the study reveals that FPOs play a crucial role in enhancing socio-economic conditions. The majority of FPO members are middle-aged, educated up to high school level, and predominantly from general and OBC castes, with marginal and small landholdings. They demonstrate medium to high levels of mechanization, income, and participation in FPO activities. This collective action not only improves agricultural productivity and market access but also fosters resilience and socio-economic empowerment among smallholder farmers in northern Bihar.

5. References

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