



EVALUATING THE IMPACT OF MEMBER PARTICIPATION ON FINANCIAL PERFORMANCE OF AGRICULTURAL COOPERATIVES

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Abstract

Agricultural cooperatives represent a unique organizational form that prioritizes member service over profit maximization, yet their financial sustainability remains a critical concern for stakeholders and policymakers globally. This comprehensive literature review synthesizes recent empirical evidence on the relationship between member participation and financial performance in agricultural cooperatives, drawing exclusively on peer-reviewed literature. The review critically examines theoretical frameworks explaining the participation–performance nexus, evaluates methodological approaches employed in empirical studies, and synthesizes findings across diverse geographical contexts including Ethiopia, Malaysia, India, China, Brazil, and Europe. The analysis reveals consistent evidence that active member participation, encompassing patronage, governance engagement, and psychological commitment, positively influences cooperative financial performance through multiple pathways including improved governance, enhanced resource mobilization, and strengthened member loyalty. However, significant heterogeneity in effect magnitudes, conceptualizations of participation, and performance measurement approaches complicates cross-study comparison. This review identifies critical gaps in longitudinal research, standardized measurement frameworks, and investigation of participation mechanisms, providing actionable recommendations for cooperative practitioners, policymakers, and future researchers.

Keywords: *Agricultural cooperatives, member participation, financial performance, cooperative governance, member activism, & patronage*

Introduction

Agricultural cooperatives occupy a distinctive position within the global food system, functioning as member-owned, member-controlled organizations designed to serve the economic interests of their farmer-owners rather than external investors (Felek et al., 2025; Mohd-Saleh et al., 2025). This governance structure theoretically aligns organizational objectives with member needs, yet it simultaneously creates unique challenges for financial performance, as decision-making processes must balance collective welfare against operational efficiency and market competitiveness.

The relationship between member participation and cooperative financial performance has attracted increasing scholarly attention in recent years, driven by several converging factors. First, the global cooperative sector has experienced both notable successes and high-profile failures, prompting questions about the governance mechanisms that differentiate sustainable cooperatives from those that falter (Mohd-Saleh et al., 2025). Second, the COVID-19 pandemic exposed vulnerabilities in cooperative business models while also demonstrating the resilience of member-centered organizations during systemic crises (Billiet et al., 2021; Mangan & Ward, 2024). Third, the digital transformation of agricultural systems has created new opportunities and challenges for member engagement, fundamentally altering how participation is conceptualized and practiced (Santos et al., 2024; Han & Liang, 2025).

Despite growing recognition of the importance of member participation, significant gaps persist in understanding the mechanisms through which participation translates into financial outcomes. As Felek et al. (2025) note in their study of Ethiopian agricultural cooperatives, the empirical evidence base remains fragmented, with studies employing divergent conceptual frameworks, measurement approaches, and analytical methods. This fragmentation limits the ability of cooperative practitioners and policymakers to develop evidence-based strategies for strengthening member engagement and cooperative performance.

This review aims to address these gaps by providing a comprehensive and critical synthesis of recent empirical evidence on the relationship between member participation and financial performance in agricultural cooperatives. The review encompasses studies published between 2021 and 2026, with particular emphasis on research appearing since 2024 that reflects current methodological standards and contextual realities. Specific objectives include: (1) identifying theoretical frameworks that explain the participation–performance relationship; (2) critically evaluating methodological approaches employed in empirical studies; (3) synthesizing findings across geographical and organizational contexts; (4) identifying moderating factors and boundary conditions; and (5) developing recommendations for future research and practice.

Conceptualizing Member Participation in Agricultural Cooperatives

Member participation in agricultural cooperatives encompasses multiple dimensions that extend beyond simple membership status. Drawing on the scoping review conducted by Pedrazzini et al. (2025), which identified nine factors influencing cooperation in commons, member participation can be understood as a multifaceted construct influenced by individual characteristics, including gender, social status, group identification, values and personality traits, and trust, and organizational factors, including incentives, communication, social norms, and anonymity.

Within the cooperative context, member participation typically manifests through three primary channels. First, patronage participation refers to the volume and consistency of members' economic transactions with the cooperative, including delivery of agricultural products and purchase of inputs (Felek et al., 2025). Second, governance participation encompasses attendance

at general meetings, engagement in decision-making processes, service on boards or committees, and exercise of voting rights (Mohd-Saleh et al., 2025; Kumkit et al., 2024). Third, psychological participation reflects members' identification with the cooperative, commitment to cooperative principles, and willingness to engage in collective action beyond minimum requirements (Pedrazzini et al., 2025). These dimensions are conceptually distinct yet empirically interrelated, with research suggesting that psychological commitment often precedes and enables active governance participation, which in turn reinforces patronage behavior (Felek et al., 2025; Mohd-Saleh et al., 2025).

Theoretical Mechanisms Linking Participation to Performance

The theoretical literature identifies several mechanisms through which member participation influences cooperative financial performance. Table 1 synthesizes these mechanisms with supporting evidence from recent empirical studies.

Table 1. *Theoretical Mechanisms Linking Member Participation to Cooperative Financial Performance*

Mechanism	Description	Supporting Evidence	Representative References
Agency Cost Reduction	Active member participation reduces information asymmetry between members and management, constraining managerial opportunism	Active participation correlates with improved governance and accountability	Mohd-Saleh et al. (2025); Felek et al. (2025)
Resource Mobilization	Participating members contribute financial resources through equity investments, patronage, and capital retention	Member capital contributes to financial resilience and investment capacity	Copercampos (2026); Chaudhary & Malhotra (2025)
Collective Action Capacity	Participation builds social capital enabling coordinated responses to market opportunities and threats	Higher participation associated with innovation adoption and marketing success	Bisri (2025); Nguyen et al. (2024)
Member Loyalty and Retention	Engaged members maintain long-term relationships with cooperatives, reducing transaction costs and turnover	Strong member identification predicts continued patronage	Pedrazzini et al. (2025); Zhang et al. (2025)
Information Flow	Participatory structures facilitate knowledge sharing about production practices, market conditions, and cooperative operations	Participation linked to improved farm management and performance	Felek et al. (2025); Geffersa (2024)
Collective Monitoring	Members monitor cooperative operations and each other, reducing free-riding and opportunism	Governance participation associated with improved financial outcomes	Mohd-Saleh et al. (2025); Mangan & Ward (2024)

The theoretical framework advanced by Mohd-Saleh et al. (2025) provides particular insight into these mechanisms. Drawing on mutual incentive theory and dynamic capability theory, the authors demonstrate that member activism serves as a driver of cooperative governance quality, which in turn mediates the relationship between participation and performance. This perspective suggests that the impact of member participation on financial outcomes operates largely through governance mechanisms, participating members demand accountability, contribute to strategic decision-making, and hold management responsible for performance outcomes.

The Role of Governance in Mediating Participation Effects

The governance function of member participation has received substantial attention in recent literature. Kumkit et al. (2024) examined members' perspectives on good governance practices in Thai credit union cooperatives, finding that perceived governance quality significantly influenced member satisfaction and continued participation. Similarly, Mohd-Saleh et al. (2025) developed a novel measure of member activism and demonstrated its positive association with both governance quality and cooperative performance in Malaysian oil palm farmer cooperatives.

These findings align with broader research on cooperative governance emphasizing that the distinctive character of cooperative organizations, characterized by the principle of one-member-one-vote rather than capital-based voting, requires active member engagement to function effectively (Bisri, 2025; Mangan & Ward, 2024). When member participation is weak, governance structures may become captured by professional managers or small groups of active members, potentially diverting cooperative resources from member service to managerial objectives.

Empirical Evidence: Participation and Financial Performance

Global Patterns and Meta-Analytic Evidence

The empirical literature examining the relationship between member participation and cooperative financial performance has expanded substantially in recent years, with studies conducted across diverse geographical and institutional contexts. Ayoub et al. (2025) provide the most comprehensive quantitative synthesis to date, conducting a meta-regression analysis of 332 estimates drawn from 80 studies examining the effect of cooperative membership on farm productive performance. Their analysis reveals three key findings of particular relevance to the participation–performance relationship.

First, the meta-analysis identifies severe positive publication bias in the existing literature, suggesting that studies reporting statistically significant positive effects of cooperative membership are disproportionately represented in published research. This publication bias may reflect both editorial preferences for novel or confirmatory findings and researchers' strategic decisions about study design and analysis.

Second, after correcting for publication bias using multiple meta-analytic techniques, the overall average effect of cooperative membership on farm productive performance remains positive and statistically significant, but its magnitude is small to negligible. This finding suggests that while cooperative membership does confer performance advantages, the effect may be more modest than individual case studies or uncorrected meta-analyses suggest.

Third, Ayoub et al. (2025) find substantial heterogeneity in effect sizes, with cooperative membership showing stronger effects on yield than on technical efficiency. This pattern suggests that the mechanisms through which cooperatives improve member performance may operate

more through input provision and marketing coordination than through improvements in productive efficiency per se.

Evidence from Developing Country Contexts

The relationship between member participation and cooperative performance has been extensively studied in developing country contexts where agricultural cooperatives play particularly important roles in smallholder market integration and rural development. Table 2 summarizes recent empirical findings from key geographical contexts.

Table 2. *Recent Empirical Evidence on Member Participation and Cooperative Performance by Region*

Region	Countries	Sample	Methods	Performance	References
Africa	Ethiopia	384 coop members	Ordered logit	Participation ↑ coop performance; higher participation → superior performance	Felek et al. (2025)
Asia	Malaysia, India, China, Vietnam	Oil palm 416 coops; hh; rural precision ag coops	SEM; PSM; econometrics; SEM-fsQCA	Member activism → ↑ governance & performance; membership ↑ net returns (INR 10,144); poverty reduction; participation + lead firm support → adoption	Mohd-Saleh et al. (2025); Chaudhary & Malhotra (2025); Zhang et al. (2025); Nguyen et al. (2024)
Latin America	Brazil	Copercampos co-op members	Case study	—	Copercampos (2026)

Felek et al. (2025) provide particularly compelling evidence from Ethiopia, where their ordered logistic regression analysis of 384 cooperative members demonstrates that higher member participation dramatically increases the likelihood of superior cooperative performance. The authors operationalize member participation through measures including attendance at general meetings, engagement in decision-making, and active use of cooperative services. Their findings indicate that member participation exerts the strongest influence among the determinants examined, surpassing credit access, management practices, and extension services in explanatory power.

Complementing these findings, Chaudhary and Malhotra (2025) employed propensity score matching to examine the impact of dairy farmer collective action in India, addressing the methodological challenge of selection bias inherent in comparisons of members and non-members. Their analysis reveals significant positive income effects: annual net returns from local cow increased by INR 3,714, returns from buffalo increased by INR 6,430, and total annual net returns increased by INR 10,144 for cooperative members. Notably, the share of dairy in total household income increased by 14 percentage points, and the share of milk sold increased by 1.4

percentage points after membership. These findings provide robust evidence that the participation–performance relationship holds under rigorous econometric identification strategies.

Research from developed country contexts, while less focused on poverty reduction outcomes, provides important insights into the mechanisms linking participation to performance in more market-integrated agricultural systems. Bisri (2025) synthesizes recent empirical evidence on drivers of cooperative sustainability, identifying three consistent patterns across studies. First, participatory governance and collaboration within and across organizations are associated with greater resilience and innovation. Second, cost discipline and end-to-end process digitalization are linked to higher technical efficiency and stronger financial buffers during shocks. Third, entrepreneurial orientation shows a positive association with economic performance and appears strengthened by collaboration.

The Brazilian cooperative Copercampos provides an illustrative case of these principles in practice. The cooperative's 2025 fiscal year results, reported in their annual general meeting, demonstrated total revenue of R\$ 5.016 billion (approximately USD 1 billion), an increase of 17% from the previous year (Copercampos, 2026). Importantly, the cooperative distributed R\$ 32.8 million during the year to members participating in loyalty, seed bonus, and swine bonus programs. At year-end, the cooperative allocated 90% of its R\$ 81 million surpluses to member capital accounts proportional to member activity, with the remaining 10% distributed in cash. This pattern of profit distribution, prioritizing member capital retention over cash distribution, reflects a strategic approach to strengthening member commitment while building financial capacity.

Moderating Factors and Boundary Conditions

The relationship between member participation and financial performance is not uniform across contexts but varies according to multiple moderating factors. Table 3 summarizes key moderators identified in recent literature.

Table 3. *Moderating Factors in the Participation–Performance Relationship*

Moderator	Effect on Participation–Performance Relationship	Supporting Evidence	References
Cooperative Size	Relationship weaker in larger cooperatives due to free-rider problems and reduced individual influence	Larger face greater participation challenges	Grashuis & Cook (2021); Felek et al. (2025)
Member Heterogeneity	Heterogeneous membership reduces participation and satisfaction	Diverse member interests complicate collective decision-making	Grashuis & Cook (2021)
Digital Transformation	Digital tools can enhance participation but may exclude less technologically capable members	Technology access and literacy moderate participation effects	Santos et al. (2024); Han & Liang (2025)
Institutional Environment	Supportive policies amplify positive participation effects	Policy support and financial stability strengthen relationships	Bisri (2025); Diakité et al. (2025)

Crisis Context	Participation effects become more pronounced during crises	Member collective action enhances resilience during shocks	Billiet et al. (2021); Mangan & Ward (2024)
Governance Quality	Strong governance mediates participation effects	Participation influences performance primarily through governance mechanisms	Mohd-Saleh et al. (2025); Kumkit et al. (2024)

Grashuis and Cook (2021) provide important insights into the challenges posed by member heterogeneity, demonstrating that cooperatives with more heterogeneous membership experience lower member satisfaction. This finding has significant implications for the participation–performance relationship, as diverse member interests may complicate decision-making and reduce the effectiveness of participatory governance structures. The role of digital transformation in moderating participation effects has received increasing attention. Santos et al. (2024) assessed digital transformation in agri-food cooperatives, identifying determinants of technology adoption and its implications for member engagement. Han and Liang (2025) extended this analysis, demonstrating that the digital economy can promote inclusive development of new agricultural operating entities, including cooperatives, but that digital divides may exclude certain member groups.

Measurement of Member Participation

A critical challenge in synthesizing evidence on the participation–performance relationship is the diverse conceptualization and measurement of participation across studies. Table 4 presents common measurement approaches and their associated strengths and limitations.

Table 4. *Approaches to Measuring Member Participation in Empirical Research*

Measurement Approach	Core Dimension Measured	Key Strength	Primary Limitation	Representative References
Patronage Volume	Economic engagement (product deliveries, input purchases)	Objective, verifiable, directly tied to cooperative activity	Captures only economic dimension; misses governance or psychological engagement	Felek et al. (2025); Copercampos (2026)
Meeting Attendance	Governance engagement (participation in decision-making)	Direct measure of formal member involvement	Attendance may reflect obligation rather than active participation	Mohd-Saleh et al. (2025); Kumkit et al. (2024)
Psychological Commitment	Attitudinal alignment (identification, loyalty, shared values)	Captures underlying motivations and long-term engagement	Subjective; susceptible to social desirability bias	Pedrazzini et al. (2025)
Composite Indices	Multi-dimensional engagement	Comprehensive; captures full	Weighting decisions can	Mohd-Saleh et al. (2025)

	(economic governance attitudinal)	+ spectrum + participation	of be arbitrary; complexity of construction	
Binary Membership	Simple member vs. non-member status	Easy to collect; widely used for policy evaluation	Fails to capture variation in participation intensity	Ayoub et al. (2025); Chaudhary & Malhotra (2025)

The development of multi-dimensional measures represents an important methodological advance. Mohd-Saleh et al. (2025) developed a novel member activism measure grounded in mutual incentive theory and dynamic capability theory, enabling more nuanced investigation of how different forms of participation influence governance and performance. This approach addresses limitations of earlier studies that relied on binary membership indicators or single-dimensional measures.

Measurement of Financial Performance

Similar heterogeneity exists in the measurement of cooperative financial performance. Studies have employed diverse measures including profitability indicators: net income, return on assets, surplus distribution (Felek et al., 2025; Copercampos, 2026); member income effects: farm net returns, household income, share of income from cooperative activities (Chaudhary & Malhotra, 2025; Zhang et al., 2025); efficiency measures: technical efficiency, cost efficiency (Ayoub et al., 2025; Meliá-Martí et al., 2024); sustainability indicators: resilience, survival, innovation capacity (Bisri, 2025; Mangan & Ward, 2024); and Multi-dimensional performance indices: combining financial and non-financial dimensions (Mohd-Saleh et al., 2025).

The proliferation of performance measures, while reflecting the multi-faceted nature of cooperative success, complicates cross-study comparison and synthesis. Ayoub et al. (2025) address this challenge by distinguishing between yield effects and technical efficiency effects, demonstrating that the choice of performance measure influences observed effect magnitudes.

Methodological Challenges and Advances

Recent research has made significant methodological advances in addressing persistent challenges in studying participation–performance relationships. Table 5 summarizes key methodological challenges and approaches to address them.

Table 5. *Methodological Challenges and Advances in Participation–Performance Research*

Challenge	Description	Methodological Approaches	Representative References
Selection Bias	Members and non-members differ on unobservable characteristics affecting both participation and performance	Propensity score matching; instrumental variables; panel data with fixed effects	Chaudhary & Malhotra (2025); Geffersa (2024); Ayoub et al. (2025)
Endogeneity	Participation and performance may be jointly determined; reverse causality possible	Instrumental variables; structural equation modeling; Granger causality tests	Mohd-Saleh et al. (2025); Felek et al. (2025)

Publication Bias	Significant findings overrepresented in published literature	positive overrepresented	Meta-regression; funnel plots; trim-and-fill analysis	Ayoubu et al. (2025)
Unobserved Heterogeneity	Cooperative-level factors may confound member-level analyses		Multilevel modeling; random effects; fixed effects	Felek et al. (2025); Grashuis & Cook (2021)
Causal Mechanisms	Difficulty establishing mechanisms through which participation affects performance		Mediation analysis; structural equation modeling; qualitative comparative analysis	Mohd-Saleh et al. (2025); Nguyen et al. (2024)

The application of propensity score matching by Chaudhary and Malhotra (2025) represents a particularly rigorous approach to addressing selection bias. By matching members and non-members on observable characteristics, the authors isolate the causal effect of cooperative membership on household income. Similarly, Geffersa (2024) employed panel data analysis with household fixed effects to control for time-invariant unobserved heterogeneity in studying the relationship between cooperative membership and farmer welfare. The meta-regression analysis conducted by Ayoubu et al. (2025) addresses publication bias, a challenge that has received insufficient attention in the cooperative literature. Their finding of severe positive publication bias suggests that the true effect of cooperative membership on performance may be more modest than individual studies suggest, highlighting the importance of meta-analytic approaches for synthesizing evidence.

Critical Discussion

Strength and Consistency of Evidence

The cumulative evidence from recent empirical studies supports the conclusion that member participation positively influences financial performance in agricultural cooperatives, though the strength and consistency of this relationship vary across contexts and study designs. The meta-regression analysis by Ayoubu et al. (2025) provides the strongest evidence for a positive but modest effect, with an overall effect size that remains statistically significant after correcting for publication bias.

Individual country studies reinforce this conclusion while providing context-specific insights. Felek et al. (2025) find that member participation dramatically increases the likelihood of superior cooperative performance in Ethiopia, while Mohd-Saleh et al. (2025) demonstrate that member activism enhances performance through improved governance in Malaysia. The Indian dairy cooperative study by Chaudhary and Malhotra (2025) provides robust causal evidence of positive income effects using propensity score matching.

However, several important caveats temper these conclusions. First, the small overall effect size identified in the meta-analysis suggests that cooperative membership alone is not a panacea for farm performance challenges. Second, the identification of publication bias raises questions about whether the published literature accurately represents the full range of research findings. Third, the substantial heterogeneity in effect sizes across studies indicates that context matters—participation is more beneficial in some settings than others.

Mechanisms and Pathways

The evidence reviewed provides strong support for governance as a key mediating mechanism in the participation–performance relationship. Mohd-Saleh et al. (2025) explicitly test and confirm this mediating pathway, demonstrating that member activism improves governance quality, which in turn enhances cooperative performance. This finding aligns with theoretical expectations that participatory governance constrains managerial opportunism, improves decision-making, and aligns organizational priorities with member interests.

Resource mobilization represents a second important pathway. The Copercampos case demonstrates how member participation in loyalty and bonus programs contributes to financial resources that can be reinvested in cooperative operations. The cooperative's practice of capitalizing 90% of surplus to member accounts reflects a strategic approach to building member equity while maintaining financial flexibility.

Collective action capacity constitutes a third pathway, with evidence from multiple contexts indicating that participating members are better positioned to coordinate responses to market opportunities and challenges (Bisri, 2025; Nguyen et al., 2024). This collective capacity may be particularly valuable during crises, as demonstrated by research on cooperative resilience during the COVID-19 pandemic (Billiet et al., 2021; Mangan & Ward, 2024).

Implications for Cooperative Practice

The evidence reviewed has several implications for cooperative practitioners:

1. Prioritize participation-enhancing practices: Given the consistent evidence linking participation to performance, cooperatives should invest in mechanisms that facilitate member engagement, including effective communication, accessible meeting formats, and meaningful opportunities for member input.
2. Develop multi-dimensional participation strategies: Cooperatives should recognize that participation encompasses patronage, governance, and psychological dimensions, each of which may require different interventions.
3. Strengthen governance structures: The mediating role of governance suggests that participation initiatives are most effective when supported by strong governance structures that channel member input into decision-making processes.
4. Address member heterogeneity: Cooperatives with diverse membership should develop strategies to accommodate different member interests and participation styles, recognizing that heterogeneity may complicate collective decision-making.

Conclusion

This comprehensive literature review has critically examined recent empirical evidence on the relationship between member participation and financial performance in agricultural cooperatives. The synthesis of studies with particular emphasis on research, reveals consistent support for a positive relationship, though meta-analytic evidence suggests the overall effect size is modest after correcting for publication bias. Member participation influences performance through multiple pathways, with governance improvement emerging as a particularly important mediating mechanism.

The evidence reviewed has important implications for cooperative practitioners, policymakers, and researchers. For practitioners, the findings underscore the value of investing in member

engagement, developing multi-dimensional participation strategies, and strengthening governance structures. For policymakers, the evidence suggests that policies supporting inclusive participation and cooperative education may yield performance benefits. For researchers, the review identifies critical gaps in longitudinal research, standardized measurement frameworks, and investigation of negative effects and boundary conditions.

As agricultural systems continue to evolve in response to digital transformation, climate change, and shifting market structures, the role of agricultural cooperatives in supporting farmer livelihoods and sustainable production would likely grow. Understanding how member participation contributes to cooperative performance, and how to foster participation in changing contexts, represents an increasingly important priority for research and practice. The evidence synthesized in this review provides a foundation for addressing this priority while highlighting the need for continued investigation of the mechanisms, moderators, and manifestations of the participation–performance relationship in agricultural cooperatives.

Recommendations

The evidence also suggests several policy priorities, including:

1. Policies that facilitate member participation, including support for cooperative education, transparent communication, and accessible meeting venues, may yield performance benefits.
2. Research identifying social biases in cooperative membership (Chaudhary & Malhotra, 2025) suggests that policies promoting inclusive participation may enhance both equity and performance.
3. While oversight of cooperative governance is important, policies that respect cooperative autonomy while promoting accountability and transparency may best support the participation–performance relationship.

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