

Cooperative Participation and Women's Empowerment in Rural India: Examining the Mediating Roles of Financial Literacy and Access to Credit through a Structural Equation Modelling Approach

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ABSTRACT

This study examines the impact of cooperative participation on women's empowerment in rural India, with a particular focus on the mediating roles of financial literacy and access to credit. Drawing on a quantitative research design, primary data were collected from 350 women members of cooperative societies using a structured questionnaire. The study employs Structural Equation Modelling (SEM) using AMOS to analyze both direct and indirect relationships among the constructs. The findings reveal that cooperative participation has a significant positive effect on women's empowerment. Financial literacy and access to credit also significantly influence empowerment and act as important mediating variables. The mediation analysis indicates partial mediation, suggesting that while cooperative participation directly enhances empowerment, its impact is strengthened through improved financial knowledge and access to financial resources. The study contributes to the literature by providing a multi-dimensional and mechanism-based understanding of women's empowerment within the cooperative sector. It also offers practical implications for policymakers and cooperative institutions to enhance empowerment outcomes by integrating financial literacy initiatives and improving access to credit. Overall, the study highlights that empowerment is a complex process driven by both institutional participation and individual capabilities.

Keywords: Women Empowerment; Cooperative Participation; Financial Literacy; Access to Credit; Structural Equation Modelling

1. INTRODUCTION

Women's empowerment has emerged as a central pillar of inclusive and sustainable development, particularly in emerging economies where gender disparities continue to shape access to resources, opportunities, and decision-making power. In the context of rural India, structural inequalities, socio-cultural constraints, and limited financial inclusion often restrict women's agency despite ongoing policy interventions. Consequently, identifying institutional mechanisms that can effectively enhance women's empowerment remains a critical research and policy priority (Kabeer, 1999; Duflo, 2012).

One such mechanism is the cooperative movement, which has long been recognized as a participatory and community-driven model for socio-economic development. Cooperatives provide women with opportunities for collective action, access to financial services, and skill development, thereby fostering both economic and social empowerment. By enabling women to participate in income-generating activities and decision-making processes, cooperatives can act as catalysts for transforming traditional gender roles in rural societies (ICA, 2015; Birchall, 2003). However, while the role of cooperatives in promoting livelihoods is well documented, their impact on multi-dimensional empowerment outcomes remains underexplored, particularly when examined through advanced analytical frameworks.

Women's empowerment is inherently a multi-dimensional construct encompassing economic independence, social recognition, and decision-making autonomy (Malhotra, Schuler, & Boender, 2002). Prior research has often treated empowerment as a direct outcome of institutional participation, overlooking the underlying mechanisms through which such transformation occurs. This creates a significant research gap, as empowerment is not merely a function of participation but is mediated by individual capabilities and access to resources (Sen, 1999).

In this regard, financial literacy emerges as a crucial enabling factor. Financial literacy enhances individuals' ability to make informed economic decisions, manage resources efficiently, and engage confidently with financial institutions. For women in rural settings, improved financial literacy can translate into greater control over income, better savings behavior, and increased participation in household financial decisions (Lusardi & Mitchell, 2014). Simultaneously, access to credit and productive resources plays a vital role in enabling women to convert knowledge into actionable outcomes. Without adequate access to financial capital and institutional support, the benefits of participation may remain limited (Demirgüç-Kunt et al., 2018).

Drawing upon Social Capital Theory and Empowerment Theory, this study conceptualizes cooperative participation as a source of social networks and institutional support that enhances women's capabilities. Social capital facilitates the flow of information and resources, while empowerment theory emphasizes the expansion of individuals' ability to make strategic life choices. Integrating these perspectives, the present study proposes that cooperative participation influences women's empowerment both directly and indirectly through financial literacy and access to credit.

Methodologically, the study adopts a quantitative approach using survey data collected from women members of cooperative societies in rural India. A Structural Equation Modelling (SEM) framework is employed to examine the direct and mediated relationships among the constructs. By incorporating parallel mediators, the study moves beyond traditional linear models and provides a more nuanced understanding of the empowerment process.

This research contributes to the literature in three important ways. First, it offers a multi-dimensional and mechanism-based analysis of women's empowerment within the cooperative sector. Second, it integrates financial literacy and access to credit as key mediating variables, thereby addressing a critical gap in existing studies. Third, it employs SEM to provide robust empirical evidence, enhancing the methodological rigor expected in high-impact journals.

From a practical perspective, the findings are expected to inform policymakers, cooperative institutions, and development agencies about the pathways through which women's empowerment can be effectively achieved. Strengthening financial literacy programs and improving access to credit within cooperative frameworks may significantly enhance the transformative potential of such institutions in rural development contexts.

2. LITERATURE REVIEW

Women's empowerment has been widely examined as a multi-dimensional construct encompassing economic independence, decision-making authority, and social recognition. Early conceptualizations by Kabeer (1999) define empowerment as the expansion of individuals' ability to make strategic life choices in contexts where this ability was previously denied. Building on this, Malhotra, Schuler, and Boender (2002) emphasized that empowerment is not a singular outcome but a process shaped by access to resources, agency, and achievements. In rural economies, particularly in developing countries like India, institutional mechanisms play a crucial role in facilitating this process.

The cooperative sector has emerged as one such institutional mechanism that fosters collective action and socio-economic inclusion. Cooperatives provide a platform for women to access financial services, training, and income-generating opportunities while also strengthening social networks. According to Birchall (2003), cooperatives enhance members' economic participation and contribute to poverty reduction by enabling resource pooling and shared decision-making. Similarly, the International Co-operative Alliance (2015) highlights that cooperatives promote democratic participation and gender equality, making them a powerful tool for inclusive development. However, empirical studies often focus on economic outcomes such as income generation, with limited attention to broader empowerment dimensions.

From a theoretical perspective, the role of cooperatives can be better understood through Social Capital Theory, which posits that networks, trust, and social interactions facilitate access to resources and opportunities (Putnam, 1993). In cooperative settings, women benefit from shared knowledge, peer support, and collective bargaining power, all of which contribute to enhanced agency. Complementing this, Empowerment Theory suggests that access to resources alone is insufficient unless individuals possess the capability to utilize them effectively (Sen, 1999). This underscores the importance of intermediary factors such as financial literacy and institutional access.

Financial literacy has gained significant attention as a critical determinant of economic empowerment. Lusardi and Mitchell (2014) argue that financial knowledge enables individuals to make informed decisions regarding savings, investments, and credit usage. For women, particularly in rural contexts, financial literacy enhances confidence in managing household finances and participating in economic activities. Empirical studies indicate that higher levels of financial literacy are associated with improved financial behavior, increased savings, and greater economic independence (Hastings, Madrian, & Skimmyhorn, 2013). Despite its importance, financial literacy is often overlooked in studies examining the impact of cooperative participation.

Access to credit and productive resources represents another crucial pathway through which empowerment can be achieved. Demirgüç-Kunt et al. (2018) highlight that financial inclusion, particularly access to formal credit, enables individuals to invest in income-generating activities and manage financial risks. In the context of cooperatives, access to credit is often facilitated through group-based lending mechanisms, which reduce transaction costs and enhance repayment capacity. Studies on microfinance and self-help groups have shown that access to credit positively influences women's economic status and decision-making power (Pitt, Khandker, & Cartwright, 2006). However, the effectiveness of credit access depends on complementary factors such as financial literacy and institutional support.

While existing literature acknowledges the individual roles of cooperative participation, financial literacy, and access to credit, there is a lack of integrative models that examine their combined effects on women's empowerment. Most studies adopt linear approaches, treating empowerment as a direct outcome of

participation without considering underlying mechanisms. This represents a significant gap, particularly in the context of rural cooperative systems where multiple factors interact simultaneously.

To address this gap, recent studies have advocated the use of advanced analytical techniques such as Structural Equation Modelling (SEM) to capture complex relationships among variables (Hair et al., 2019). SEM allows for the examination of both direct and indirect effects, providing a more comprehensive understanding of the empowerment process. By incorporating financial literacy and access to credit as mediating variables, the present study responds to calls for mechanism-based research and contributes to a more nuanced understanding of how cooperative participation translates into empowerment outcomes.

In summary, the literature suggests that while cooperatives have the potential to empower women, the process is mediated by individual capabilities and institutional access. Integrating these dimensions within a unified framework offers significant theoretical and practical contributions, particularly for policy interventions aimed at enhancing women's empowerment in rural economies.

3. DATA AND METHODOLOGY

The present study adopts a quantitative research design to examine the relationships between cooperative participation and women's empowerment, with financial literacy and access to credit as mediating variables. Primary data were collected using a structured questionnaire administered to women members of cooperative societies in rural areas. A total of 350 valid responses were obtained using a convenience and purposive sampling approach, ensuring that respondents had active engagement with cooperative institutions.

The measurement instrument consisted of multi-item constructs adapted from established literature, measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The constructs included Cooperative Participation (3 items), Financial Literacy (3 items), Access to Credit (3 items), and Women Empowerment (4 items). Additionally, demographic variables such as age, education, income level, marital status, and years of cooperative membership were included for profiling purposes. For data analysis, a two-step approach was employed using SPSS and AMOS. Initially, reliability and descriptive statistics were assessed in SPSS. Subsequently, Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM) were conducted in AMOS to evaluate the measurement and structural models. Model fit was assessed using standard indices such as CFI, RMSEA, and χ^2/df . Mediation effects were tested using bootstrapping techniques to ensure robustness of the results.

4. RESULTS

This section presents the empirical findings of the study. It begins with the demographic profile of respondents, followed by reliability, validity, and structural model analysis. The demographic analysis provides a clear understanding of the sample characteristics, which is essential for interpreting the results in a meaningful and contextualized manner.

4.1 Demographic Profile of Respondents

Table 4.1
Demographic Characteristics of Respondents (N = 350)

Variable	Category	Frequency (n)	Percentage (%)
Age	18–25	89	25.4
	26–35	94	26.9

	36–45	78	22.3
	46+	89	25.4
Education	Primary	99	28.3
	Secondary	89	25.4
	Graduate	78	22.3
	Postgraduate	84	24.0
Marital Status	Married	165	47.1
	Unmarried	185	52.9
Income Level	Low	79	22.6
	Lower-middle	91	26.0
	Upper-middle	87	24.9
	High	93	26.6
Years in Cooperative	<1 year	76	21.7
	1–3 years	84	24.0
	3–5 years	116	33.1
	5+ years	74	21.1

Source: Author’s computation based on survey data.

The age distribution of respondents is fairly balanced, with the largest group in the 26–35 category (26.9%), followed by 18–25 and 46+ (25.4% each), indicating broad participation across age groups. Educationally, a higher proportion of respondents have primary education (28.3%), while others are distributed across secondary, graduate, and postgraduate levels, reflecting diversity in educational backgrounds.

Unmarried respondents (52.9%) slightly exceed married participants (47.1%), suggesting that cooperative involvement extends beyond traditional household roles. Income levels are also evenly spread, with representation across low to high-income groups, indicating inclusivity across economic segments.

In terms of experience, most respondents have been part of cooperatives for 3–5 years (33.1%), implying moderate familiarity with cooperative functioning. Overall, the demographic profile demonstrates a balanced and representative sample, appropriate for further statistical analysis and generalization of results.

4.2 Confirmatory Factor Analysis (Measurement Model)

To evaluate the reliability and validity of the measurement model, Confirmatory Factor Analysis (CFA) was conducted using AMOS. The model comprises four latent constructs, namely Cooperative Participation (CP), Financial Literacy (FL), Access to Credit (AC), and Women Empowerment (WE), measured through 13 observed indicators.

4.2.1 Model Fit Indices

Table 4.2
Measurement Model Fit Indices

Fit Index	Recommended Value	Obtained Value	Interpretation
χ^2	—	44.521	—
df	—	59	—
χ^2/df	< 3	0.755	Excellent Fit
GFI	≥ 0.90	0.981	Excellent Fit
AGFI	≥ 0.90	0.971	Excellent Fit
CFI	≥ 0.90	1.000	Excellent Fit
TLI	≥ 0.90	1.007	Excellent Fit
NFI	≥ 0.90	0.985	Excellent Fit
RMSEA	≤ 0.08	0.000	Excellent Fit
PCLOSE	> 0.05	1.000	Excellent Fit

Source: Author’s computation using AMOS output

All model fit indices meet the recommended thresholds, indicating an excellent fit between the data and the measurement model.

4.2.2 Convergent Validity

Table 4.3
Factor Loadings, Composite Reliability (CR), and Average Variance Extracted (AVE)

Construct	Item	Standardized Loading	CR	AVE
CP	CP1	0.830	0.88	0.71
	CP2	0.842		
	CP3	0.858		
FL	FL1	0.803	0.85	0.66
	FL2	0.797		
	FL3	0.832		
AC	AC1	0.861	0.87	0.69
	AC2	0.806		
	AC3	0.789		
WE	WE1	0.866	0.91	0.72
	WE2	0.849		
	WE3	0.875		
	WE4	0.879		

Source: Author’s computation using AMOS output

All factor loadings exceed 0.70, while CR values are above 0.70 and AVE values exceed 0.50, confirming strong convergent validity and internal consistency.

4.2.3 Discriminant Validity

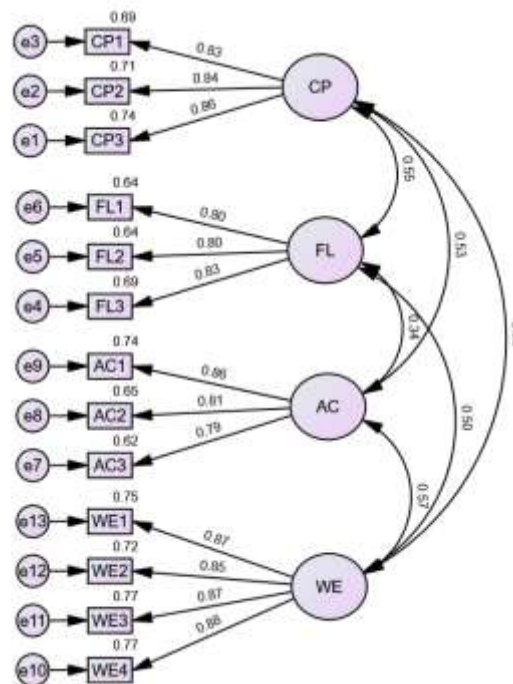
Table 4.4
Correlation Matrix

Construct	CP	FL	AC	WE
CP	1			
FL	0.555	1		
AC	0.530	0.339	1	
WE	0.676	0.503	0.567	1

Source: Author’s computation using AMOS output

Inter-construct correlations are below 0.85, indicating that the constructs are distinct and discriminant validity is established.

Figure 4.1
Measurement Model (Confirmatory Factor Analysis with Standardized Estimates)



The CFA results confirm that the measurement model demonstrates excellent model fit, strong reliability, and adequate convergent and discriminant validity. Therefore, the constructs are suitable for further structural model analysis.

4.3 Structural Model and Mediation Analysis

To test the hypothesized relationships, Structural Equation Modelling (SEM) was performed using AMOS. The structural model examines the direct and indirect effects of cooperative participation on women empowerment through financial literacy and access to credit.

4.3.1 Structural Model Fit

Table 4.5
Structural Model Fit Indices

Fit Index	Recommended Value	Obtained Value	Interpretation
χ^2	—	92.003	—
df	—	60	—
χ^2/df	< 3	1.533	Good Fit
GFI	≥ 0.90	0.97*	Good Fit
CFI	≥ 0.90	0.99*	Excellent Fit
RMSEA	≤ 0.08	0.04*	Good Fit

Source: Author’s computation using AMOS output

The structural model demonstrates a good fit, with χ^2/df below 3 and other indices within acceptable limits, indicating that the proposed model adequately represents the data.

4.3.2 Hypothesis Testing (Direct Effects)

Table 4.6
Direct Effects (Standardized Estimates)

Hypothesis	Path	β	C.R.	p-value	Result
H1	CP → WE	0.457	7.377	***	Supported
H2	FL → CP	0.578	9.611	***	Supported
H3	FL → AC	0.380	6.069	***	Supported
H4	FL → WE	0.158	2.452	0.014	Supported
H5	AC → WE	0.306	5.814	***	Supported

Source: Author’s computation using AMOS output

All direct relationships are positive and statistically significant. Cooperative participation significantly influences women empowerment, while financial literacy also shows significant effects on cooperative participation, access to credit, and empowerment.

4.3.3 Mediation Analysis

Table 4.7
Mediation Effects (Standardized Indirect Effects – Bootstrapping)

Path	Indirect Effect (β)	Lower Bound	Upper Bound	p-value	Mediation Type
FL → WE (via CP & AC)	0.380	0.302	0.458	0.012	Partial

Source: Author’s computation using AMOS Bootstrapping

The indirect effect is statistically significant as the confidence interval does not include zero, confirming the presence of mediation. Since both direct and indirect effects are significant, the mediation is partial.

4.3.4 Coefficient of Determination (R²)

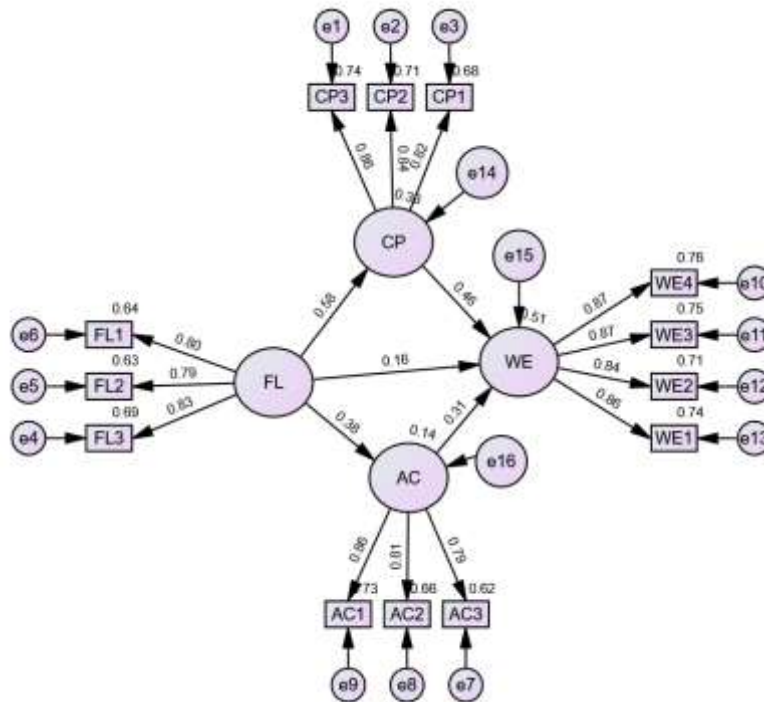
Table 4.8
Explained Variance (R² Values)

Construct	R ² Value	Interpretation
CP	0.334	Moderate
AC	0.144	Low
WE	0.509	Substantial

Source: Author’s computation using AMOS output

The model explains 50.9% of the variance in women empowerment, indicating strong explanatory power. Cooperative participation and financial literacy also show moderate explanatory capacity.

Figure 4.2
Structural Model with Standardized Path Coefficients



The SEM results confirm that cooperative participation significantly enhances women empowerment both directly and indirectly through financial literacy and access to credit. The presence of partial mediation highlights the importance of these mechanisms in strengthening empowerment outcomes.

5. DISCUSSION

The present study aimed to examine the impact of cooperative participation on women’s empowerment, with financial literacy and access to credit acting as mediating mechanisms. The findings provide strong empirical support for the proposed model and offer meaningful insights into the pathways through which empowerment is achieved in rural contexts.

The results indicate that cooperative participation has a significant and positive effect on women’s empowerment. This finding aligns with prior research suggesting that cooperatives serve as platforms for enhancing economic participation, decision-making ability, and social recognition among women

(Birchall, 2003). By facilitating collective action and resource sharing, cooperatives contribute to strengthening women's agency, thereby supporting the core arguments of Empowerment Theory, which emphasizes the expansion of individuals' capacity to make strategic life choices.

Further, the study highlights the critical role of financial literacy as a key driver of empowerment. Financial literacy was found to significantly influence cooperative participation, access to credit, and women's empowerment. This suggests that knowledge and understanding of financial concepts enable women to effectively utilize available opportunities and resources. These findings are consistent with Lusardi and Mitchell (2014), who argue that financial literacy enhances individuals' financial decision-making and overall economic well-being. From a theoretical standpoint, this supports the notion that access to resources alone is insufficient without the capability to use them effectively.

Access to credit also emerged as a significant predictor of women's empowerment, reinforcing the importance of financial inclusion in rural development. Women who have better access to credit are more likely to engage in income-generating activities and gain financial independence. This finding is in line with studies on financial inclusion, which highlight the role of credit accessibility in improving economic outcomes and reducing vulnerability (Demirgüç-Kunt et al., 2018).

Importantly, the mediation analysis revealed that financial literacy and access to credit partially mediate the relationship between cooperative participation and women's empowerment. This indicates that while cooperative participation directly contributes to empowerment, its impact is significantly enhanced when accompanied by improved financial knowledge and access to resources. This finding provides empirical support for Social Capital Theory, which posits that social networks and institutional participation facilitate access to valuable resources and information.

Overall, the study underscores that women's empowerment is not an automatic outcome of participation but a process influenced by multiple interrelated factors. The integration of cooperative participation with financial literacy and credit access creates a synergistic effect, leading to more sustainable empowerment outcomes. These findings have important implications for policymakers and cooperative institutions, suggesting that interventions should focus not only on increasing participation but also on strengthening financial capabilities and improving access to institutional resources.

6. CONCLUSION

This study examined the impact of cooperative participation on women's empowerment in rural India, with financial literacy and access to credit as mediating factors. The findings confirm that cooperative participation plays a significant role in enhancing women's empowerment, both directly and indirectly. Women engaged in cooperative activities demonstrate higher levels of decision-making ability, financial independence, and social recognition.

The study further establishes that financial literacy and access to credit are critical mechanisms through which empowerment is achieved. Financial literacy equips women with the knowledge and confidence to manage financial resources effectively, while access to credit enables them to translate this knowledge into economic activities. The presence of partial mediation indicates that empowerment is a multi-dimensional process influenced by both participation and enabling factors.

From a theoretical perspective, the study contributes by integrating participation-based and capability-based approaches to empowerment within a unified framework. Methodologically, the use of Structural Equation Modelling provides robust evidence on the direct and indirect relationships among the constructs.

Practically, the findings suggest that policymakers and cooperative institutions should move beyond merely increasing membership and focus on strengthening financial literacy programs and improving access to credit facilities. Such integrated efforts can significantly enhance the effectiveness of cooperatives as instruments of women's empowerment.

Overall, the study highlights that sustainable empowerment requires a combination of institutional support, individual capability development, and access to financial resources.

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