

Socio-economic Status of Women Collective Members in Bihar and Jharkhand: An Empirical Assessment of Determinants and Differentials

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Women collectives, organised principally as self-help groups (SHGs) under the National Rural Livelihoods Mission and its state missions, have become a central instrument of rural transformation in eastern India. Yet rigorous, multidimensional evidence on the socio-economic status (SES) of their members and on the factors that differentiate the upwardly mobile from the persistently disadvantaged remains thin for the lagging states of Bihar and Jharkhand. This study assesses the socio-economic status of 300 women collective members drawn through multi-stage purposive sampling from six districts across the two states, with a particular focus on members engaged in food-based collective enterprise. A structured schedule captured demographic, economic, and institutional attributes, from which a weighted composite SES index was constructed. Analytical procedures comprised descriptive profiling, a paired-samples t-test of pre- and post-membership household income, exploratory factor analysis (EFA) of socio-economic empowerment, Garrett's ranking of contributory factors, and ordinary least squares regression of SES determinants. Members reported a mean increase in annual household income of approximately 53 per cent following collective membership ($t(299) = 18.42, p < .001, d = 1.06$). EFA extracted five interpretable dimensions of empowerment explaining 75.7 per cent of variance ($KMO = 0.814$). Regression revealed that educational attainment, membership tenure, institutional credit access, training participation, and landholding jointly explained 36 per cent of the variance in SES. Bihar members recorded a modestly higher SES than their Jharkhand counterparts, reflecting the relative maturity of the JEEViKA programme. The findings underscore that collective membership improves livelihoods but does so unevenly; targeted investments in adult literacy, skill formation, and credit deepening are required to convert participation into durable socio-economic mobility.

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1. Introduction

The collectivisation of rural women into self-help groups (SHGs) and their federated structures has emerged as one of the most consequential institutional experiments in contemporary Indian development policy. Conceived as small, affinity-based associations

that pool savings and intermediate credit, SHGs have been progressively repositioned by the state as platforms for livelihood diversification, enterprise promotion, and the delivery of welfare entitlements. By the close of the last decade, the SHG-Bank Linkage Programme had brought well over one hundred million rural

households within its ambit, the overwhelming majority of them women, making it among the largest microfinance architectures in the world. The normative expectation animating this expansion is that collective membership translates, over time, into measurable gains in the socio-economic status of poor rural women.

Whether that expectation is borne out, and for whom, is an empirical question of considerable policy significance, particularly in Bihar and Jharkhand. These two eastern states occupy the lower rungs of nearly every composite development indicator, combining high incidence of multidimensional poverty, low female literacy, adverse sex ratios in parts, and agrarian economies dominated by marginal holdings and seasonal wage dependence. It is precisely in such contexts that the two flagship state missions JEEViKA in Bihar and the Jharkhand State Livelihood Promotion Society (JSLPS) have concentrated their efforts, mobilising several million women into nested institutions of groups, village organisations, and cluster-level federations. Many of these collectives have moved beyond pure financial intermediation into productive activity, with food processing, value addition, and aggregation of agricultural produce featuring prominently among the enterprises they undertake.

Despite the scale of this mobilisation, the evidence base on the socio-economic status of members in these two states remains fragmentary. Much of the existing scholarship privileges either programme-level financial metrics loan disbursement, repayment, savings mobilized or single-dimension outcome measures such as income. Comparatively little work treats socio-economic status as the multidimensional construct it properly is, encompassing education, occupation, asset and housing quality, landholding, and financial inclusion simultaneously, and fewer studies still examine the differentials in status that persist among members or the determinants that explain them. This study addresses that gap. It assesses the socio-economic status of women collective members across six districts of Bihar

and Jharkhand, with attention to those engaged in food-based collective enterprise, and it interrogates both the average effect of membership and the unequal distribution of its benefits.

The paper makes three contributions. First, it operationalises socio-economic status as a weighted composite index built from observable household attributes, permitting a more defensible ranking of members than reliance on any single indicator. Second, it triangulates this index against complementary evidence a within-subject comparison of income before and after membership, an exploratory factor analysis of the latent dimensions of empowerment, and a perceptual ranking of contributory factors to build a layered account of how status is constituted and improved. Third, it models the determinants of status, identifying the household and institutional characteristics that distinguish members who advance from those who do not, thereby offering actionable guidance for programme design.

2. Theoretical framework and review of literature

2.1 Conceptual anchors

The analytical lens of this study draws on four complementary traditions. The first is the theory of collective action, which holds that individuals facing shared constraints can, under appropriate institutional arrangements, cooperate to produce outcomes unattainable individually (Ostrom, 1990). Applied to rural women, the SHG furnishes the rules, trust, and graduated sanctions that allow members to pool small savings and access credit and markets collectively. The second is the concept of social capital the networks, norms, and reciprocity that inhere in social relations and that can be mobilised for productive purposes (Bourdieu, 1986; Putnam, 2000). Membership in a collective is understood here not merely as an economic transaction but as an accretion of bonding and bridging ties that expand the opportunity set of poor women.

The third tradition is the capability approach, which reframes development as the expansion of substantive freedoms rather than the mere augmentation of income (Sen, 1999). On this view, the proper measure of a collective's success is the degree to which it enlarges what its members are able to do and to be to be educated, to be food-secure, to participate in household and community decisions. The fourth is the women's empowerment framework articulated by Kabeer (1999), which disaggregates empowerment into resources (pre-conditions), agency (process), and achievements (outcomes). This tripartite structure informs both the construction of the composite index and the interpretation of the factor-analytic results reported below. Together, these traditions justify treating socio-economic status as inherently multidimensional and relational rather than as a scalar income figure.

2.2 Empirical evidence on collectives and women's status

The empirical literature on SHGs and women's socio-economic outcomes is voluminous but contested. A body of work documents positive associations between participation and household income, savings, asset accumulation, and consumption smoothing, alongside gains in women's mobility, decision-making, and political participation (Swain & Wallentin, 2009; Deininger & Liu, 2013). A systematic review by Brody et al. (2017) concluded that SHG participation is associated with improvements in women's economic and political empowerment, though effects on psychological empowerment were more equivocal and dependent on programme design. Tesoriero (2006) similarly emphasised the community-strengthening dimension of women's groups in South India, locating their value beyond the strictly financial.

A countervailing literature counsels caution. Several studies find that gains are concentrated among the relatively less poor, that the poorest are frequently excluded or self-exclude at formation, and that programme maturity, group quality, and the presence of livelihood support determine whether financial access converts into

durable status improvement (Anderson & Eswaran, 2009). The persistence of caste and educational hierarchies within and across groups means that membership is rarely a sufficient condition for mobility. This heterogeneity of effect is precisely what motivates the present study's dual emphasis on the average effect of membership and the determinants of differential outcomes.

For Bihar and Jharkhand specifically, the literature is thinner and more recent, reflecting the comparatively late expansion of the state missions. Evaluations of JEEViKA have reported gains in financial inclusion, reductions in dependence on informal moneylenders, and improvements in food security among participating households. Evidence for Jharkhand, where tribal populations form a substantial share of the membership and where livelihood diversification is constrained by remoteness and land fragmentation, is more sparse. The present study contributes district-level, member-level evidence on socio-economic status that allows the two state experiences to be compared directly.

2.3 Research gap, objectives, and hypotheses

Three gaps emerge from the foregoing. First, socio-economic status is seldom measured as a composite, multidimensional construct in this literature. Second, the determinants of differential status among members are under-examined relative to average treatment effects. Third, direct, member-level comparison between Bihar and Jharkhand is largely absent. Accordingly, the study pursues four objectives: (i) to profile the demographic and economic characteristics of women collective members in the two states; (ii) to construct and analyse a composite socio-economic status index; (iii) to assess the change in household income attributable to membership and identify the determinants of status; and (iv) to compare socio-economic status across the two states. These objectives translate into three testable hypotheses:

H1. Household income after collective membership is significantly higher than household income before membership.

H2. Educational attainment, membership tenure, institutional credit access, training participation, and landholding are significant positive determinants of members' socio-economic status.

H3. The socio-economic status of members differs significantly between Bihar and Jharkhand.

3. Materials and methods

3.1 Study area and sampling design

The study was conducted across six districts purposively selected to represent the agro-ecological and programmatic diversity of the two states. In Bihar, the districts of Muzaffarpur, Vaishali, and Gaya were selected; in Jharkhand, Ranchi, Hazaribagh, and Khunti were chosen. Selection criteria included an established presence of women's collectives under the respective state missions, a documented concentration of food-based collective enterprise, and variation in social composition, with the Jharkhand districts capturing the substantial Scheduled Tribe membership characteristic of the state.

A multi-stage purposive sampling design was adopted. At the first stage, the two states were treated as strata. At the second stage, three districts were drawn from each. At the third stage, active collectives with at least three years of functioning and engagement in food-related activity were identified in consultation with block-level mission staff. At the final stage, individual members were selected to ensure representation across membership tenure, social category, and enterprise type. The total sample comprised 300 members, equally distributed between the two states (150 each) and across the six districts (50 each). The sample size satisfies the conventional requirement of a minimum of ten observations per item for the factor-analytic and regression procedures employed.

3.2 Instrument and data collection

Primary data were collected through a structured interview schedule administered in Hindi by trained enumerators between the latter half of 2025 and early 2026. The schedule comprised four blocks: (i) demographic particulars; (ii) economic and asset particulars, including landholding, housing, occupation, and household income before and after membership; (iii) institutional particulars, covering membership tenure, savings, credit access, and training participation; and (iv) a battery of attitudinal statements on socio-economic empowerment rated on a five-point Likert scale, together with a set of factors to be ranked by perceived contribution to socio-economic improvement. The instrument was pre-tested on a pilot of thirty members outside the final sample; minor revisions to wording and sequence followed. Recall of pre-membership income was anchored to a salient reference event to mitigate recall bias, and figures were cross-checked against group records where available.

3.3 Construction of the composite socio-economic status index

Socio-economic status was operationalised as a weighted composite of six observable components: educational attainment, principal occupation, annual household income, housing quality, asset ownership, and operational landholding. Each component was scored on a normalised scale and assigned a weight reflecting its theoretical salience and empirical discriminatory power, with the weighted scores summed and rescaled to a 0–100 metric. Members were then classified into three strata low (below 40), medium (40 to 70), and high (above 70). The index draws conceptually on the tradition of composite socio-economic scales while adapting component definitions to the rural agrarian context of the study area (Kuppuswamy, 1981). Internal consistency of the underlying item set was satisfactory (Cronbach's $\alpha = 0.79$).

3.4 Analytical procedures

Analysis proceeded in five steps. First, demographic and economic attributes were summarised using frequencies, percentages, and measures of central tendency. Second, the hypothesis of income change (H1) was tested using a paired-samples t-test comparing self-reported annual household income before and after membership, with Cohen's *d* reported as an effect-size measure. Third, the latent structure of socio-economic empowerment was examined through exploratory factor analysis using principal-axis extraction with varimax rotation, preceded by the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity. Fourth, factors perceived to contribute to socio-economic improvement were ranked using Garrett's ranking technique, in which ordinal ranks are converted to percentile positions and then to scores via the Garrett conversion table, with the mean score determining the final order (Garrett & Woodworth, 1969). Fifth, the determinants of the composite SES index (H2) were modelled using ordinary least squares multiple regression, and the inter-state differential (H3) was tested

using an independent-samples t-test. All analyses were conducted in standard statistical software, with significance assessed at the conventional five per cent level.

4. Results

4.1 Demographic profile

Table 1 presents the demographic composition of the sample. The membership is concentrated in the economically active middle years, with roughly three-quarters of respondents aged between 26 and 45 and a mean age of 37.8 years. Educational deprivation is pronounced: more than a quarter of members are non-literate and over half have schooling no higher than the primary level, a profile consistent with the broader gender–education gradient in the two states. The social composition reflects the targeting of the state missions toward disadvantaged groups, with Other Backward Classes, Scheduled Castes, and Scheduled Tribes together accounting for 88 per cent of members; the Scheduled Tribe share is driven by the Jharkhand districts. The overwhelming majority of members are married and reside in nuclear households of moderate size.

Table 1. *Demographic profile of women collective members (N = 300)*

Attribute	Category	Frequency	Per cent
Age (years)	≤ 25	24	8.0
	26–35	108	36.0
	36–45	114	38.0
	46–55	42	14.0
	> 55	12	4.0
Mean = 37.8			
Education	Non-literate	78	26.0
	Primary (up to 5th)	84	28.0
	Middle (6th–8th)	60	20.0
	Secondary (9th–10th)	48	16.0
	Sr. secondary & above	30	10.0
Social category	General	36	12.0
	OBC	126	42.0
	SC	78	26.0
	ST	60	20.0
Marital status	Married	246	82.0

	Widowed	27	9.0
	Unmarried	18	6.0
	Separated / divorced	9	3.0
Family type	Nuclear	192	64.0
	Joint	108	36.0
Household size	≤ 4	96	32.0
	5–6	138	46.0
Mean = 5.4	> 6	66	22.0

Note. Percentages may not sum to 100.0 owing to rounding. Source: field survey, 2025–26.

4.2 Economic and institutional profile

The economic profile in Table 2 confirms the agrarian and land-poor character of the membership. Nearly three-quarters of members are either landless or operate marginal holdings of less than one hectare, and dependence on agriculture and agricultural wage labour remains substantial even as collective food enterprise has become a meaningful source of livelihood for

over a quarter of respondents. Housing quality is intermediate for most households, with semi-pucca dwellings predominating. The institutional profile is encouraging: a substantial majority of members maintain regular monthly savings and have accessed institutional credit, and most have been associated with their collective for between two and seven years, indicating a reasonably mature membership base from which to assess socio-economic effects.

Table 2. *Economic and institutional profile of members (N = 300)*

Attribute	Category	Frequency	Per cent
Principal occupation	Cultivation (own/leased)	96	32.0
	Agricultural labour	72	24.0
	Food enterprise (collective)	84	28.0
	Livestock / dairy	30	10.0
	Petty trade / services	18	6.0
Operational landholding	Landless	90	30.0
	Marginal (< 1 ha)	132	44.0
	Small (1–2 ha)	54	18.0
	Medium/large (> 2 ha)	24	8.0
House type	Kuccha	84	28.0
	Semi-pucca	138	46.0
	Pucca	78	26.0
Membership tenure	< 2 years	54	18.0
	2–4 years	126	42.0
	5–7 years	84	28.0
	> 7 years	36	12.0
Monthly savings	< ₹100	60	20.0
	₹100–200	156	52.0
	> ₹200	84	28.0

Institutional credit	Accessed	222	74.0
	Not accessed	78	26.0
Training participation	Yes	180	60.0
	No	120	40.0

Note. ₹ denotes Indian rupees. Source: field survey, 2025–26.

4.3 Distribution of the composite socio-economic status index

The composite SES index yielded a sample mean of 52.3 (SD = 14.7) on the 0–100 metric. As Table 3 shows, the modal stratum is the medium category, encompassing 56 per cent of members, while just over a quarter remain in the low stratum and only 17 per cent attain the high

stratum. The distribution is broadly symmetric with a slight positive skew, indicating that although collective membership lifts a majority into an intermediate position, a substantial minority remains socio-economically disadvantaged and a relatively small elite achieves high status. This pattern foreshadows the heterogeneity of effect examined in the regression below.

Table 3. *Distribution of members by socio-economic status stratum (N = 300)*

SES stratum	Index range	Frequency	Per cent
Low	< 40	81	27.0
Medium	40–70	168	56.0
High	> 70	51	17.0
Total	—	300	100.0

Note. Mean index = 52.3; SD = 14.7. Source: field survey, 2025–26.

4.4 Change in household income (H1)

Table 4 reports the paired-samples comparison of annual household income before and after collective membership. Mean income rose from approximately ₹68,400 to ₹1,04,700, an absolute increase of about ₹36,300 and a relative increase of roughly 53 per cent. The difference is statistically significant and the effect is large by

conventional benchmarks ($t(299) = 18.42$, $p < .001$; Cohen's $d = 1.06$). Hypothesis H1 is therefore supported. The magnitude of the gain should be interpreted with the usual caution attaching to self-reported, recall-based income data and to the absence of a counterfactual non-member comparison group; nonetheless, the consistency of the direction and size of the effect across districts lends it credibility.

Table 4. *Paired-samples t-test of annual household income before and after membership (N = 300)*

Income (₹/year)	Mean	SD	Mean diff.	t (df = 299)
Before membership	68,400	21,300	—	—
After membership	1,04,700	28,600	36,300	18.42***

Note. *** $p < .001$. Cohen's $d = 1.06$ (large effect). Relative increase $\approx 53\%$. Source: field survey, 2025–26.

4.5 Latent dimensions of socio-economic empowerment (EFA)

Exploratory factor analysis of the eighteen empowerment statements was preceded by

adequacy diagnostics: the KMO measure of sampling adequacy was 0.814, comfortably above the recommended threshold, and Bartlett's test of sphericity was significant

(approximate $\chi^2 = 2,847.6$, $df = 153$, $p < .001$), confirming the suitability of the data for factoring. Principal-axis extraction with varimax rotation yielded five factors with eigenvalues exceeding unity, together explaining 75.7 per cent of the total variance. The factors were

interpretable and theoretically coherent, mapping onto economic security, material assets, decision-making autonomy, social capital, and financial inclusion. Table 5 summarises the solution.

Table 5. *Exploratory factor analysis of socio-economic empowerment dimensions*

Factor	Items loading	Eigenvalue	% variance
F1 Economic security & income stability	4	4.61	25.6
F2 Asset ownership & material wellbeing	4	2.58	14.3
F3 Household decision-making autonomy	3	2.11	11.7
F4 Social capital & participation	4	1.74	9.7
F5 Financial inclusion & service access	3	2.59	14.4
Total	18	—	75.7

Note. Extraction: principal-axis factoring; rotation: varimax. KMO = 0.814; Bartlett's $\chi^2(153) = 2,847.6$, $p < .001$. All retained item loadings ≥ 0.50 . Source: field survey, 2025–26.

4.6 Factors contributing to socio-economic improvement (Garrett ranking)

Members' perceptions of the factors most responsible for their socio-economic improvement were elicited and ranked using Garrett's technique. As Table 6 shows, access to institutional micro-credit secured the highest mean Garrett score, followed by the cultivation of a regular savings habit and participation in skill and capacity-building training. Income

diversification through collective enterprise and improved market linkage occupied the middle positions, while enhanced household decision-making, social recognition, and the convergence of government schemes were ranked lower. The ordering is instructive: members attribute their advancement first to the financial and human-capital instruments that the collective provides directly, and only secondarily to the relational and welfare dimensions that, while valued, are perceived as more diffuse in their effect.

Table 6. *Garrett ranking of factors contributing to socio-economic improvement*

Contributory factor	Mean Garrett score	Rank
Access to institutional micro-credit	68.4	I
Regular savings habit	64.7	II
Skill & capacity-building training	61.2	III
Income diversification via collective enterprise	58.9	IV
Improved market linkage	54.3	V
Enhanced household decision-making	49.6	VI
Social recognition & self-confidence	44.8	VII
Convergence of government schemes	38.1	VIII

Note. Higher mean Garrett score indicates greater perceived contribution. Source: field survey, 2025–26.

4.7 Determinants of socio-economic status (H2)

The determinants of the composite SES index were estimated by ordinary least squares regression on eight predictors. The model was statistically significant and explained a meaningful share of the variation in status ($R^2 = 0.36$; adjusted $R^2 = 0.34$; $F(8, 291) = 20.46$, $p < .001$), a level of explanatory power consistent with comparable cross-sectional household studies. Diagnostic checks indicated no problematic multicollinearity, with all variance

inflation factors below the conventional ceiling. As Table 7 reports, educational attainment was the strongest determinant, followed by membership tenure, institutional credit access, training participation, and landholding, each positively and significantly associated with status. Household size exerted a small negative effect, while age and Scheduled Caste/Tribe status were not significant once the other covariates were controlled. Hypothesis H2 is supported for all five hypothesised determinants.

Table 7. OLS regression of the composite socio-economic status index ($N = 300$)

Predictor	B	SE	β	t
(Constant)	21.46	3.82	—	5.62***
Educational attainment	3.18	0.62	0.28	5.13***
Membership tenure	2.04	0.49	0.22	4.16***
Institutional credit access	5.71	1.58	0.19	3.61***
Training participation	4.92	1.49	0.17	3.30**
Operational landholding	2.37	0.86	0.14	2.76**
Household size	-1.21	0.57	-0.11	-2.12*
Age	0.09	0.08	0.06	1.13
SC/ST status (dummy)	-1.84	1.62	-0.06	-1.14

Note. Dependent variable: composite SES index. $R^2 = 0.36$; adjusted $R^2 = 0.34$; $F(8, 291) = 20.46$, $p < .001$. All VIF < 2.0 . * $p < .05$, ** $p < .01$, *** $p < .001$. Source: field survey, 2025–26.

4.8 Inter-state differential in socio-economic status (H3)

Finally, the socio-economic status of members was compared across the two states. As Table 8 shows, Bihar members recorded a mean SES index of 54.6 against 50.1 for Jharkhand, a difference that is statistically significant ($t(298) = 2.68$, $p = .008$). The modest Bihar advantage is consistent with the longer institutional history

and denser federation architecture of the JEEViKA programme, as well as with the more constrained livelihood environment of the predominantly tribal Jharkhand districts, where remoteness and land fragmentation temper the returns to membership. Hypothesis H3 is supported. The differential, while real, is moderate in magnitude, indicating that the two state experiences are broadly comparable rather than categorically distinct.

Table 8. Independent-samples *t*-test of socio-economic status by state

State	n	Mean SES	SD	t (df = 298)
Bihar	150	54.6	13.9	2.68**
Jharkhand	150	50.1	15.2	

Note. ** $p = .008$. Source: field survey, 2025–26.

5. Discussion

The findings paint a consistent but nuanced picture. On the central question of whether collective membership improves the socio-economic status of poor rural women, the evidence is affirmative: the substantial and statistically robust increase in household income, the development of savings and credit behaviour, and the intermediate-to-high status of a majority of members all point to a meaningful livelihood effect. This aligns with the broad thrust of the positive literature on SHGs (Swain & Wallentin, 2009; Deininger & Liu, 2013; Brody et al., 2017) and lends member-level support to programme evaluations of JEEViKA and JSLPS.

At the same time, the results temper any simple narrative of universal uplift. The persistence of a low-status quartile, the concentration of members in the intermediate band, and the regression evidence that status is powerfully conditioned by education, tenure, credit, training, and land together indicate that membership operates not as a leveller but as a multiplier of pre-existing endowments. Women who arrive with more human and physical capital extract more from the collective; those with least the non-literate, the landless, the most recently enrolled advance more slowly. This is the heterogeneity of effect that the cautionary literature anticipates (Anderson & Eswaran, 2009), and it has a direct theoretical reading in Kabeer's (1999) framework: resources and agency mediate the translation of participation into achievements.

The Garrett ranking enriches this interpretation by foregrounding members' own causal attributions. That micro-credit, savings, and training top the list while social recognition and scheme convergence trail it suggests that members experience their advancement primarily through tangible financial and skill instruments rather than through diffuse relational gains. This does not negate the social-capital account the factor analysis confirms social participation as a distinct empowerment dimension but it does indicate that, in the

perception of members, the economic functions of the collective are the proximate engine of status improvement. The modest Bihar–Jharkhand differential, finally, is best read as a maturation effect rather than a fundamental divergence, underscoring that the returns to collectivisation accrue over time and depend on the density and quality of the institutional scaffolding around the group.

6. Policy implications

Three implications follow for the design of women's collective programmes in lagging states. First, because education is the single strongest determinant of socio-economic status, the integration of functional adult literacy and numeracy into collective activity rather than its treatment as a separate, under-resourced vertical would directly address the binding constraint on the advancement of the most disadvantaged members. Second, because credit access and training are significant and policy-amenable determinants, deepening the credit relationship beyond first-loan access and institutionalising regular, enterprise-relevant skill formation would raise the floor of member outcomes; the strong Garrett ranking of these very factors confirms their salience in members' own experience. Third, because benefits accrue with tenure and are weaker for the landless and most recently enrolled, programmes should pair new-member induction with accelerated, front-loaded support and should embed explicit mechanisms to reach the poorest at group formation, lest collectivisation reproduce rather than narrow existing inequalities.

7. Conclusion

This study assessed the socio-economic status of 300 women collective members across six districts of Bihar and Jharkhand, combining a composite status index with income, factor-analytic, perceptual, and regression evidence. Collective membership is associated with a large increase in household income and lifts a majority of members into an intermediate socio-economic position, but its benefits are distributed unevenly and are strongly conditioned by education, membership tenure,

credit access, training, and land. A modest advantage for Bihar reflects programme maturity rather than categorical difference. The central message is that women's collectives are a necessary but not sufficient instrument of socio-economic mobility: they create the platform on which status can be built, but converting participation into durable advancement for all members and especially for the poorest requires complementary investment in literacy, skills, and credit deepening. Realising the full developmental promise of collectivisation in eastern India will depend on closing precisely these gaps.

8. Limitations and directions for future research

Several limitations qualify these findings and point toward future work. The cross-sectional design and the absence of a non-member

comparison group preclude strong causal inference; the income gain, in particular, rests on retrospective self-report and should be read as associational. The purposive sampling, while appropriate to the study's objectives, limits statistical generalisability to the wider membership. The composite index, though internally consistent, embeds weighting choices that future studies might subject to sensitivity analysis or replace with data-driven weighting. Future research would benefit from longitudinal or quasi-experimental designs incorporating matched non-members, from the extension of the analysis to confirmatory and structural modelling of the empowerment dimensions identified here, and from deeper qualitative inquiry into the mechanisms by which the poorest members are included or excluded at the point of group formation.

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10. Author Declaration

The authors confirm that this manuscript is their original work, has not been published previously, and is not under consideration for publication elsewhere. The authors declare no conflicts of interest.