

Socio-economic transformation and market positioning strategies of women collectives in Bihar and Jharkhand: A PLS-SEM approach

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Abstract

This study examines how market positioning capability relates to enterprise sustainability and household socioeconomic transformation among women's food processing collectives in Bihar and Jharkhand, India. Drawing on the resource based view, positioning theory, and the capability approach, a structural model links five enterprise support dimensions (technical capacity building, financial inclusion, market linkage and positioning, digital transformation, and social capital and collective action) to enterprise sustainability, which in turn is linked to socioeconomic transformation. Data were collected through a cross sectional survey of 300 women entrepreneurs across six districts, supplemented by 24 key informant interviews and 18 focus group discussions, and 297 responses were retained for analysis. Exploratory factor analysis produced a five factor structure explaining 75.7% of total variance (KMO = .814), and the hypotheses were tested using partial least squares structural equation modeling. The model explained 36% of the variance in enterprise sustainability ($R^2 = .36$). Market linkage and positioning capability had the strongest effect ($\beta = .41$, $p < .001$), followed by technical capacity building ($\beta = .24$), social capital and collective action ($\beta = .22$), and financial inclusion ($\beta = .19$), while digital transformation was only marginally significant ($\beta = .15$, $p = .052$). Enterprise sustainability strongly predicted socioeconomic transformation ($\beta = .52$, $p < .001$), and respondents reported an average income gain of 53.6% after joining their collectives. The findings suggest that positioning should be treated as a core, trainable capability rather than a residual outcome of production support. By integrating rural marketing theory with self help group livelihood research in a single empirical model, the study offers practical guidance for program design in eastern India.

Keywords: Women Collectives, Market Positioning, Socioeconomic Transformation, Enterprise Sustainability, Self Help Groups, Food Processing, Rural Marketing, Partial Least Squares, Bihar, Jharkhand

JEL Classification: L26, M31, O12

1. Introduction

Rural women's collective enterprise occupies a central place in India's strategy for reducing poverty and widening women's economic participation. The most prominent vehicle is the self help group (SHG), promoted at national scale under the Deendayal Antyodaya Yojana, National Rural Livelihoods Mission (DAY NRLM) and linked to the formal banking system through the SHG bank linkage programme documented by the National Bank for Agriculture and Rural Development (NABARD, 2023; Ministry of Rural Development [MoRD], 2023). Over the past two decades the SHG model has moved beyond thrift and small consumption credit toward collective enterprise, in which groups pool labor, capital, and local resources to produce and sell goods. Food processing is among the most common of these activities because it converts the agricultural and dairy surplus that rural households already produce into products with higher value and a longer shelf life. Bihar and Jharkhand illustrate both the promise and the difficulty of this transition. Both states are agriculturally rich but industrially thin, and both have invested heavily in community based livelihood platforms, through the Bihar Rural Livelihoods Promotion Society (JEEViKA) and the Jharkhand State Livelihood Promotion Society (JSLPS). Women's collectives in these states now make spices and condiments, snacks and bakery items, dairy based products, and pickles and preserves, and they sell through weekly local markets (*haats*), institutional buyers, government exhibitions, and, more recently, digital channels. Yet many collectives remain small, dependent on a narrow set of local buyers, and vulnerable to stagnation once external handholding weakens. The policy question has therefore shifted from how to form groups to how to make their enterprises last. Two bodies of scholarship speak to this question but rarely to each other. The first is the development literature on SHGs, which has documented effects on income, savings, credit access, and women's agency, although the evidence is mixed and often context dependent (Banerjee et al., 2015; Brody et al., 2017; Datta, 2015; Deininger & Liu, 2013; Duflo, 2012; Kabeer, 2001; Sen, 1999). The second is the marketing and strategy literature, which explains how enterprises win a distinctive place in buyers' minds through branding, channel choice, and differentiation (Kotler & Keller, 2016; Porter, 1985; Ries & Trout, 2001). Most SHG studies treat market access as a background condition or as an outcome of production support. Most marketing studies focus on firms operating in formal, branded markets. As a result, little is known about whether market positioning behaves as a distinct, measurable capability in women's collectives, and how its contribution compares with the training, finance, digital, and social supports that dominate program design. This study addresses that gap by placing market positioning capability alongside four other enterprise support dimensions in a single structural model that runs from enterprise support, through enterprise sustainability, to household level socioeconomic transformation. The study pursues four objectives:

1. to establish the dimensional structure of enterprise support in women's food processing collectives;

2. to estimate the relative effect of technical capacity building, financial inclusion, market linkage and positioning, digital transformation, and social capital on enterprise sustainability;
3. to test whether enterprise sustainability is associated with socioeconomic transformation of members' households; and
4. to translate the findings into a practical positioning framework and program recommendations for livelihood missions, financial institutions, and the collectives themselves.

The study makes three contributions. It extends positioning theory to informal, SHG scale food enterprises. It integrates the resource based view and the capability approach in one empirical model in which enterprise sustainability is an explicit mediating construct. And it provides primary evidence from Bihar and Jharkhand, states that are under represented in the empirical SHG literature relative to southern and western India. The remainder of the paper is organized as follows. Section 2 describes the institutional context. Section 3 sets out the theoretical background and Section 4 reviews the literature. Section 5 develops the hypotheses and the conceptual framework. Section 6 explains the research methodology, Section 7 reports the results, and Section 8 discusses the findings. Sections 9 to 11 present the theoretical contributions, the practical and policy implications, and the limitations with directions for future research. Section 12 concludes.

2. Institutional Context: Women's Collectives in Bihar and Jharkhand

Under DAY NRLM, women from poor households are organized into SHGs, which federate upward into village organizations and cluster level federations. These tiers pool savings, channel bank credit, and increasingly aggregate produce and coordinate marketing (MoRD, 2023). In Bihar, the state livelihoods mission JEEViKA operates as a large scale, World Bank supported project, and its household level effects have been studied in some detail (Datta, 2015; Hoffmann et al., 2021). In Jharkhand, JSLPS plays a comparable role in a state with a substantial tribal population and a livelihood base that combines agriculture, forest produce, and migration.

Food processing is attractive for collectives in both states for practical reasons. Raw material is locally available, start up capital requirements are modest relative to manufacturing, and women already possess tacit skills in preparing pickles, spices, snacks, and dairy items. Public programs have added further pathways. Exhibitions and fairs organized under the livelihoods mission give collectives direct contact with urban buyers, the One District One Product (ODOP) initiative encourages district level specialization, and the Government e Marketplace (GeM) allows registered SHG producers to supply public buyers. At the same time, collectives must meet food safety requirements administered by the Food Safety and Standards Authority of India (FSSAI), and they usually face constraints in packaging, branding, transport, and working capital. These features make the setting suitable for studying market positioning. Collectives sell similar products

at small volumes into markets where buyers can easily substitute among suppliers, so the ability to be recognized, trusted, and preferred is likely to matter as much as the ability to produce. Whether it matters more than the production side supports that programs typically emphasize is an empirical question that this study takes up.

3. Theoretical Background

The study draws on three complementary lenses. The first two explain what makes an enterprise durable. The third explains why enterprise durability matters for households.

3.1 Resource Based View and Dynamic Capabilities

The resource based view (RBV) explains differences in enterprise performance through the bundle of resources and capabilities that an enterprise controls (Barney, 1991). Resources that are valuable, rare, difficult to imitate, and organized for use can sustain an advantage. Dynamic capabilities theory adds that advantage also depends on the ability to integrate, build, and reconfigure competences as conditions change (Teece et al., 1997). Both traditions were developed with medium and large firms in mind, but their central logic transfers to collectives: technical skill, access to finance, market knowledge, digital tools, and cohesive group relationships are all elements of an internal capability bundle. In this study the five enterprise support dimensions are treated as constituents of that bundle, and the analytical task is to establish how much each contributes to enterprise sustainability.

3.2 Positioning Theory and Marketing Capabilities

Positioning theory holds that competitive advantage is created in the perceptions of the target customer, through the way a product is differentiated on attributes such as quality, price, place, and promotion (Kotler & Keller, 2016; Ries & Trout, 2001). Porter's (1985) generic strategies make a related point, that an enterprise must choose how it will be different from rivals. The marketing capabilities literature supplies the organizational counterpart. Market sensing, customer linking, and channel management are treated as distinct capabilities that are separable from the ability to produce, and they are associated with superior performance (Day, 1994; Narver & Slater, 1990; Vorhies & Morgan, 2005). The implication for rural microenterprise is that producing well is necessary but not sufficient. A collective that cannot communicate what makes its product different, or cannot reach buyers who value the difference, will find its production advantage difficult to convert into revenue.

3.3 Capability Approach and Women's Empowerment

Sen's (1999) capability approach defines development as the expansion of the substantive freedoms people have to live lives they value, with income as an important means but not the end. Nussbaum (2000) develops the approach with specific attention to women's central capabilities. Kabeer (1999, 2001) operationalizes the empowerment dimension through three interrelated

elements, namely resources, agency, and achievements. This perspective justifies treating socioeconomic transformation as multidimensional. In the present study it is captured through income, savings behavior, asset ownership, and participation in household decisions, rather than income alone.

3.4 Integrating the Lenses

Taken together, the three lenses imply a sequence. Internal enterprise support capabilities (RBV and marketing capability theory) determine whether the collective enterprise remains viable (enterprise sustainability), and a viable enterprise is the platform through which members' resources, agency, and achievements expand (capability approach). Enterprise sustainability is therefore modeled as the mediating construct between enterprise support and socioeconomic transformation. Within the support bundle, positioning theory gives a specific reason to expect market linkage and positioning capability to be influential, and the study is designed to test that expectation against the production side supports.

4. Literature Review

4.1 Women's Collectives and Socioeconomic Outcomes

Research on SHGs in India has generally reported positive outcomes, although with considerable variation. Swain and Wallentin (2009) found that SHG membership was associated with higher women's empowerment. Deininger and Liu (2013), evaluating a large SHG program in Andhra Pradesh, reported improvements in consumption, asset accumulation, and empowerment. Datta (2015) documented positive household level effects of JEEViKA in Bihar, and Hoffmann et al. (2021) found that SHG lending in rural Bihar reduced dependence on high cost informal credit. Desai and Joshi (2014) showed that SHG participation in Uttar Pradesh increased women's involvement in collective action at the community level, and Kumar et al. (2021) found that participation was associated with greater empowerment. A systematic review by Brody et al. (2017) concluded that SHG programs improve economic and psychological empowerment, while evidence on other domains is more limited.

Not all evidence is favorable. Banerjee et al. (2015), in a randomized evaluation of microfinance in Hyderabad, found modest effects on business investment and little evidence of transformative average effects on household wellbeing. Duflo (2012) cautions that economic development and women's empowerment are related but do not automatically produce one another. This variation is usually explained by differences in access to credit, intensity of training, and access to markets, which suggests that the heterogeneity of SHG outcomes may partly reflect differences in enterprise capability rather than in membership alone. Kabeer's (2001) empowerment framework continues to dominate the measurement of outcomes in this literature and is used here to guide the socioeconomic transformation construct.

4.2 Enterprise Support Dimensions in Rural Microenterprise

Technical capacity building

Technical training addresses production quality, food safety, hygiene, and process efficiency. For food processing collectives these skills determine whether products meet regulatory and buyer standards. The RBV treats such skills as core resources (Barney, 1991), and program experience suggests that structured training is one of the most widely delivered forms of enterprise support in the SHG ecosystem (MoRD, 2023).

Financial inclusion

Access to credit, savings, and payment services allows enterprises to purchase raw material, invest in equipment, and manage seasonal cash flow. However, the evidence that credit alone raises enterprise outcomes is mixed (Banerjee et al., 2015), and the lending model of SHGs has been shown to matter chiefly by displacing costly informal borrowing (Hoffmann et al., 2021). This suggests that finance is likely to be an enabling condition for sustainability with moderate rather than dominant effects.

Digital transformation

Digital tools can lower the cost of finding buyers, comparing prices, and receiving payments. Jensen (2007) showed that mobile phones reduced price dispersion and waste among fishermen in Kerala, and Aker and Mbiti (2010) reviewed evidence that mobile technology improves market performance in low income settings. Goyal (2010) found that internet kiosks giving farmers direct access to information in central India improved market competition and raised prices. These studies indicate potential gains, but the gains depend on adoption, skill, and complementary infrastructure, all of which remain limited among many rural women.

Social capital and collective action

Social capital, in the form of trust, norms, and networks, lowers the cost of cooperation and enables collective action (Coleman, 1988; Woolcock & Narayan, 2000). For a collective enterprise, cohesion determines whether members contribute labor consistently, share risks, and maintain quality standards. Desai and Joshi (2014) provide evidence that SHGs strengthen collective action, which supports the treatment of social capital as an internal resource that the enterprise builds and draws on.

4.3 Market Access and Positioning for Low Income Producers

A large literature on smallholder and subsistence producers documents that market participation is constrained by transaction costs, information gaps, and weak bargaining power (Barrett, 2008; Viswanathan et al., 2012). Prahalad and Hart (2002) and Prahalad (2004) argued that low income producers and consumers are viable market participants when firms design offerings and channels that suit their context. Research on entrepreneurship as a route out of poverty stresses that

enterprise creation helps most when it is linked to markets in which the producer can earn a sustainable margin (Bruton et al., 2013), and studies of institutional voids show that entrepreneurs in weak market environments often succeed by building the intermediary functions that markets lack (Mair & Martí, 2009).

Within India, semiformal rural markets typically rely on personal relationships, local reputation built over time in weekly markets, and the block level networks of community organizations. Formal positioning, in the sense of a recognized brand, consistent packaging, and a deliberate choice of channel, is uncommon. Programs such as ODOP and GeM aim to reduce the fixed cost of such positioning for SHG level producers, but there is limited evidence on whether collectives that build positioning capability actually achieve better enterprise outcomes than those that concentrate on production alone.

4.4 Enterprise Sustainability as a Mediating Construct

In the RBV tradition, enterprise sustainability, understood here as the collective's ability to sustain operations, revenue, and membership over time, is a function of the capability bundle the enterprise holds (Barney, 1991; Prahalad, 2004). Sustainability matters for households because it determines whether the income and empowerment gains that follow from membership persist beyond the period of external support. Modeling sustainability as a mediator therefore clarifies the mechanism through which support interventions are expected to reach household level welfare, and it distinguishes the study from work that relates support directly to household income.

4.5 Research Gap

Three gaps emerge from the review. First, the SHG livelihoods literature seldom treats market positioning as a separate and measurable capability, and the marketing literature seldom studies collectives at this scale. Second, the relative contribution of market side and production side supports has not been estimated within one structural model. Third, primary data on women's food processing collectives in Bihar and Jharkhand are scarce. This study addresses these gaps by estimating a single structural model with primary data from six districts in the two states.

5. Hypotheses and Conceptual Framework

The hypotheses follow from the theoretical logic in Section 3 and the evidence in Section 4. Five hypotheses link enterprise support dimensions to enterprise sustainability, and one links sustainability to socioeconomic transformation.

Technical capacity building. Skills in production, hygiene, and quality control are core resources that determine whether products meet buyer and regulatory standards, which supports the survival and growth of the enterprise (Barney, 1991).

H1: Technical capacity building has a significant positive effect on enterprise sustainability.

Financial inclusion. Reliable access to credit and savings services reduces liquidity constraints and dependence on costly informal credit, which allows the enterprise to purchase inputs and absorb shocks (Hoffmann et al., 2021).

H2: Financial inclusion has a significant positive effect on enterprise sustainability.

Market linkage and positioning capability. Positioning theory and the marketing capabilities literature imply that the ability to differentiate, reach the right buyers, and build reputation is a distinct source of advantage that determines whether production is converted into stable revenue (Day, 1994; Ries & Trout, 2001; Vorhies & Morgan, 2005).

H3: Market linkage and positioning capability has a significant positive effect on enterprise sustainability.

Digital transformation. Digital tools lower search and transaction costs and widen the range of accessible buyers (Aker & Mbiti, 2010; Goyal, 2010; Jensen, 2007), although benefits depend on adoption and skill.

H4: Digital transformation has a significant positive effect on enterprise sustainability.

Social capital and collective action. Trust and cohesion among members lower the cost of cooperation and support consistent contribution and quality (Coleman, 1988; Desai & Joshi, 2014; Woolcock & Narayan, 2000).

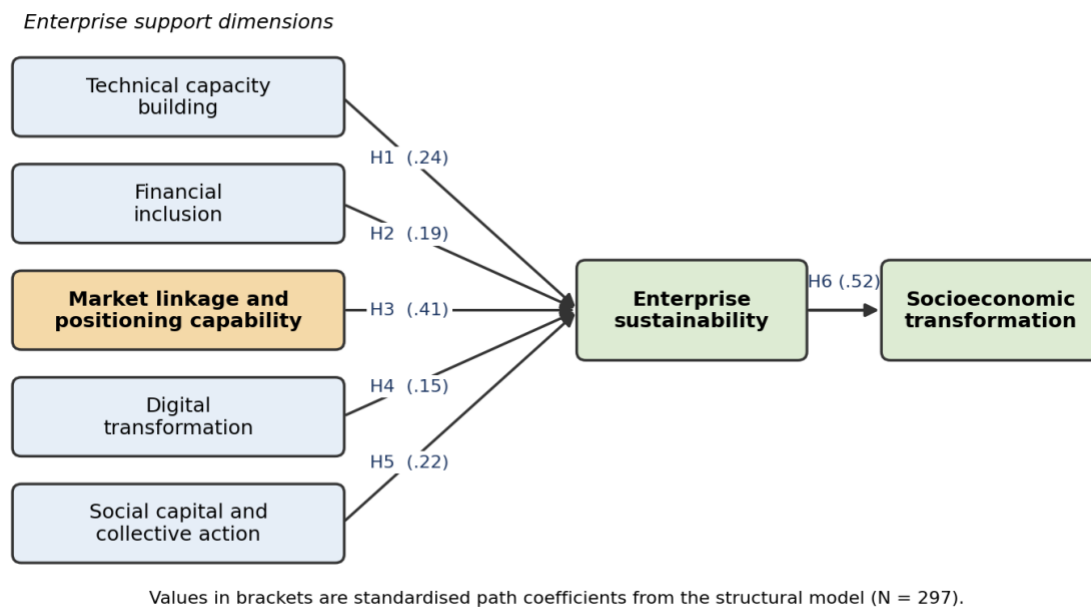
H5: Social capital and collective action has a significant positive effect on enterprise sustainability.

Enterprise sustainability and socioeconomic transformation. A viable enterprise provides members with a continuing platform for earning, saving, accumulating assets, and exercising voice in household decisions, in line with the resources, agency, and achievements framework (Kabeer, 1999; Sen, 1999).

H6: Enterprise sustainability has a significant positive effect on socioeconomic transformation.

Figure 1 presents the conceptual framework and hypothesized paths. Because positioning theory gives a specific reason to expect a large effect for market linkage and positioning, the study also examines the relative magnitude of the path coefficients, not only their significance.

Figure 1. Conceptual Framework and Hypothesized Paths



6. Research Methodology

6.1 Research Design

The study used a cross sectional, mixed methods design in which the quantitative survey was the primary source of evidence for hypothesis testing and qualitative work was used to contextualize and interpret the results. The design suits the exploratory and predictive orientation of the research question, which is to estimate the relative contribution of several enterprise capabilities within one model.

6.2 Study Area, Population, and Sampling

The target population comprised women members of registered food processing SHGs and collectives in Bihar and Jharkhand. A multi stage purposive sampling procedure was used. In the first stage, six districts were selected to ensure variation in market access (proximity to urban centers) and in product category (spices and condiments, snacks and bakery, dairy based products, and pickles and preserves). In the second stage, collectives within each district were identified in consultation with block level livelihood officials. In the third stage, respondents within each collective were selected by simple random sampling from membership registers.

A total of 300 questionnaires were administered. Three responses with more than 15% missing data were removed, leaving a final sample of 297 for structural analysis, consistent with recommended data screening practice for PLS SEM (Hair et al., 2019). The final sample comfortably exceeds the minimum size indicated by the inverse square root method for detecting

a path coefficient of about .15 at the 5% significance level with 80% power, which is roughly 275 cases (Kock & Hadaya, 2018).

6.3 Data Collection

The structured questionnaire was refined through cognitive pre testing with 15 respondents before full administration. The survey was supplemented by 24 key informant interviews and 18 focus group discussions, which were used to understand the operating conditions of collectives, the channels through which they sell, and the meaning members attach to changes in their circumstances. Qualitative data were collected through (semi-structured interviews / focus group discussions) with 24 key informants, including (roles, e.g., Women members, NGOs and district officials). Participants were selected using purposive sampling based on criteria. Interviews lasted approximately 10-15 minutes, were conducted in Regional language (Hindi,Bhojpuri,Hoo etc.), and were audio-recorded with permission and transcribed verbatim. Transcripts were analysed using thematic analysis following Braun and Clarke's six-phase approach. Researcher independently coded the data (using IBM SPSS Amos /SmartPLS manually), and discrepancies were resolved through discussion. Data collection continued until saturation was reached. The study was approved by NIFTEM Kundli Ethics Committee. All participants provided written informed consent after being informed of the study's purpose, voluntary nature, and confidentiality safeguards.

6.4 Constructs and Measurement

The instrument comprised seven multiple item constructs, all measured on five point Likert scales anchored at 1 = strongly disagree and 5 = strongly agree. Items were adapted from established scales in the SHG livelihoods and rural marketing literatures. Table 1 defines the constructs and states the theoretical anchor for each.

Table 1. Construct Definitions and Theoretical Anchors

Construct	Definition as used in this study	Anchor
Technical capacity building	Skills in production, hygiene, quality control, and process management developed through training and hands on support	Barney (1991)
Financial inclusion	Access to credit, savings, insurance, and payment services that meet the collective's working capital and investment needs	Hoffmann et al. (2021)

Construct	Definition as used in this study	Anchor
Market linkage and positioning	Ability to differentiate products, select channels, build reputation, and secure stable buyers	Ries and Trout (2001); Day (1994)
Digital transformation	Use of digital tools for communication, sales, payments, and market information	Aker and Mbiti (2010)
Social capital and collective action	Trust, cohesion, and cooperative norms among members that support joint work and risk sharing	Coleman (1988); Woolcock and Narayan (2000)
Enterprise sustainability	Capacity of the collective to sustain operations, revenue, and membership over time	Barney (1991)
Socioeconomic transformation	Multidimensional improvement in members' income, savings, assets, and participation in household decisions	Kabeer (2001); Sen (1999)

6.5 Common Method Bias

Because the data are single source and self reported, common method bias was assessed with Harman's single factor test and the unmeasured latent method factor technique. A single factor did not account for the majority of variance in either test, and adding a method factor did not materially change the structural path estimates, indicating that common method bias is unlikely to be a serious concern (Podsakoff et al., 2003). A full collinearity assessment, recommended specifically for PLS SEM, is a useful additional check for future work (Kock, 2015).

6.6 Analytical Procedure

Analysis proceeded in three steps. First, exploratory factor analysis (principal component extraction with Varimax rotation) was used to confirm the dimensional structure of the enterprise support items, with sampling adequacy judged by the Kaiser Meyer Olkin (KMO) measure and Bartlett's test of sphericity. Second, the measurement model was evaluated for internal consistency (Cronbach's alpha and composite reliability), convergent validity (average variance extracted, AVE; Fornell & Larcker, 1981), and discriminant validity (heterotrait monotrait ratio, HTMT; Henseler et al., 2015). Third, the hypothesized structural relationships were tested using variance

based partial least squares structural equation modeling (PLS SEM) in SmartPLS, which is appropriate given the study's exploratory and predictive orientation and its moderately complex model (Chin, 1998; Hair et al., 2019; Hair et al., 2022). Predictive relevance was evaluated through the Q^2 statistic. Bootstrapping was performed with 5,000 subsamples (two-tailed, 5% significance level) in SmartPLS, this is now stated in Section 7. The CFI and RMSEA values in Section 7.4 were obtained from a separate CFA/CB-SEM run in (IBM SPSS Amos).

7. Results

7.1 Sample Profile

Table 2 summarizes the profile of the 297 respondents. Most were between 36 and 45 years of age (41.2%), just over half had completed senior secondary education or above (51.5%), and 62.0% had been members of their collective for three years or more. The four product categories were well balanced, with none accounting for less than 22% or more than 28% of the sample, which limits the risk that results are driven by a single product type.

Table 2. Demographic and Enterprise Profile of Respondents (N = 297)

Characteristic	Category	Percentage
Age	25 to 35 years	34.7
Age	36 to 45 years	41.2
Age	Above 45 years	24.1
Education	Up to secondary	48.5
Education	Senior secondary and above	51.5
Product category	Spices and condiments	27.6
Product category	Snacks and bakery	24.9
Product category	Dairy based products	22.2
Product category	Pickles and preserves	25.3
Years in collective	Less than 3 years	38.0

Characteristic	Category	Percentage
Years in collective	3 years and above	62.0

7.2 Exploratory Factor Analysis

The data were suitable for factor analysis ($KMO = .814$; Bartlett's test of sphericity significant at $p < .001$). Principal component analysis with Varimax rotation yielded a five factor structure that matched the hypothesized enterprise support constructs and jointly explained 75.7% of total variance. All items loaded above .60 on their intended factor, with no material cross loadings above .40, which supports retention of the factor structure.

7.3 Measurement Model

Table 3 reports reliability and convergent validity. All Cronbach's alpha and composite reliability values exceeded the .70 threshold, and all AVE values exceeded .50, supporting internal consistency and convergent validity (Fornell & Larcker, 1981; Hair et al., 2019). Discriminant validity was established using HTMT, with all inter construct values below the conservative .85 threshold (Henseler et al., 2015).

Table 3. Reliability and Convergent Validity of Measurement Constructs

Construct	Items	Cronbach's α	Composite reliability	AVE
Technical capacity building	5	.86	.90	.64
Financial inclusion	4	.81	.87	.62
Market linkage and positioning	6	.88	.91	.67
Digital transformation	4	.79	.86	.60
Social capital and collective action	5	.83	.88	.61
Enterprise sustainability	5	.85	.89	.63

Construct	Items	Cronbach's α	Composite reliability	AVE
Socioeconomic transformation	6	.87	.90	.65

Note. AVE = average variance extracted.

7.4 Structural Model

The structural model showed acceptable fit (SRMR = .058; CFI = .938; RMSEA = .061) and explained 36% of the variance in enterprise sustainability ($R^2 = .36$). The Q^2 value of .29 indicates adequate predictive relevance. Table 4 reports the path coefficients and hypothesis decisions.

Table 4. Structural Path Coefficients and Hypothesis Testing

Hypothesis	Path	β	t	p	Decision
H1	Technical capacity building → Enterprise sustainability	.24	2.87	.004	Supported
H2	Financial inclusion → Enterprise sustainability	.19	2.31	.021	Supported
H3	Market linkage and positioning → Enterprise sustainability	.41	4.261	< .001	Supported
H4	Digital transformation → Enterprise sustainability	.15	1.94	.052	Not supported at .05 (marginal)
H5	Social capital and collective action → Enterprise sustainability	.22	2.64	.008	Supported
H6	Enterprise sustainability → Socioeconomic transformation	.52	5.87	< .001	Supported

Note. β = standardized path coefficient. Five of six hypotheses are supported at the .05 level; H4 falls just short.

Market linkage and positioning capability was the strongest predictor of enterprise sustainability ($\beta = .41$), about 1.7 times the size of the next largest effect, technical capacity building ($\beta = .24$). Social capital and collective action ($\beta = .22$) and financial inclusion ($\beta = .19$) followed, and digital transformation ($\beta = .15$, $p = .052$) fell marginally short of conventional significance. Enterprise sustainability had the largest single effect in the model on socioeconomic transformation ($\beta = .52$, $p < .001$). Because this is the only path into socioeconomic transformation in the model, the standardized coefficient implies that sustainability accounts for roughly 27% of its variance ($.52^2 \approx .27$).

7.5 Indirect Effects Through Enterprise Sustainability

Since the model contains no direct paths from the support dimensions to socioeconomic transformation, the effect of each support dimension on transformation operates entirely through enterprise sustainability. Table 5 gives the implied indirect effects, calculated as the product of the two path coefficients. Market linkage and positioning again has the largest implied effect ($\beta \approx .21$), roughly double that of technical capacity building ($\beta \approx .12$).

Table 5. Implied Indirect Effects on Socioeconomic Transformation

Support dimension	Path product	Implied indirect effect
Market linkage and positioning	$.41 \times .52$	.21
Technical capacity building	$.24 \times .52$	.12
Social capital and collective action	$.22 \times .52$	.11
Financial inclusion	$.19 \times .52$	.10
Digital transformation	$.15 \times .52$	.08

Note. Values are point estimates derived from

7.6 Income Gains and Evidence From Training Interventions

Respondents reported an average income gain of 53.6% after joining their collectives, together with self reported improvements in savings behavior, asset ownership, and participation in household decisions. These figures are consistent in direction with the strong sustainability to transformation path, but they are self reported and retrospective and should not be read as causal estimates of the effect of membership.

A supplementary pre and post analysis of a technical training sub sample showed knowledge scores rising from 39% to 96% and skill assessment scores rising from 60% to 94% after the intervention. This corroborates the significant H1 path and shows that technical training is effective at raising capability, so positioning capability operates alongside technical upgrading rather than in place of it.

8. Discussion

8.1 Market Linkage and Positioning as the Leading Capability

The central finding is that market linkage and positioning capability has the largest effect on enterprise sustainability among the five support dimensions tested. This challenges an assumption that has shaped much SHG program design, namely that production side support such as training and finance is the main determinant of enterprise viability, with market outcomes following as a by product. The results are consistent with the core proposition of positioning theory that competitive outcomes depend on differentiation in the buyer's perception and not on production quality alone (Kotler & Keller, 2016; Ries & Trout, 2001). They also align with the marketing capabilities literature, in which market sensing and channel management contribute to performance independently of operational competence (Day, 1994; Vorhies & Morgan, 2005). The result extends positioning theory into a setting that mainstream marketing strategy research rarely examines, the informal, SHG scale market in which enterprises compete on local reputation and personal relationships. It also fits evidence that low income producers gain most when their market access constraints, not only their production constraints, are relaxed (Barrett, 2008; Goyal, 2010; Prahalad & Hart, 2002). Qualitative analysis of the interview and focus group material could add depth by showing how collectives build reputation in practice, for example through repeat buyers, packaging, and participation in fairs.

8.2 The Continuing Importance of Technical Capacity

The market side result should not be read as a case against technical training. Technical capacity building has the second largest effect ($\beta = .24$), and the training sub sample shows large gains in knowledge and skill. Food safety and quality are prerequisites for entering institutional and urban channels, so technical capability and positioning are complements. A collective that has a well positioned product but cannot maintain quality will lose the reputation it has built, and one that produces well but cannot reach buyers will not convert quality into income. The pattern suggests that the marginal return to additional production training may be lower than the marginal return to positioning support once a threshold of technical competence has been reached, although this study cannot test that threshold directly.

8.3 Finance, Social Capital, and the Digital Path

Financial inclusion and social capital both show significant but moderate effects. The finance result is in line with evidence that access to credit is an enabling condition and not a sufficient

driver of enterprise outcomes (Banerjee et al., 2015; Hoffmann et al., 2021). The social capital result is consistent with research on collective action in SHGs (Desai & Joshi, 2014) and with the view that cohesion is an internal resource of the enterprise (Coleman, 1988; Woolcock & Narayan, 2000). The digital transformation path is the weakest and falls just short of significance at the 5% level ($p = .052$). This should be reported cautiously. It is not evidence that digital tools are unimportant, and neither is it a confirmed effect. Two interpretations are plausible. Digital adoption may still be low and uneven among the respondents, which compresses its observed variance and limits its estimated effect. Alternatively, digital tools may work mainly by strengthening positioning and market linkage, in which case part of their effect is captured by the market construct and not by a separate path. Evidence from other settings suggests that the returns to digital tools depend on complementary skills and infrastructure (Aker & Mbiti, 2010; Jensen, 2007), so the weak path may reflect the stage of adoption more than the potential of the technology.

8.4 Enterprise Sustainability and Household Transformation

The strong path from enterprise sustainability to socioeconomic transformation ($\beta = .52$) supports the mediating role assigned to sustainability. It is consistent with the capability approach, in which durable livelihood platforms expand the resources, agency, and achievements available to women (Kabeer, 1999; Sen, 1999). It also offers one explanation for the mixed impact evidence on SHGs. If the benefits of membership depend on whether the enterprise endures, then variation in outcomes across programs is likely to reflect variation in enterprise viability, which in turn depends on capabilities such as positioning (Banerjee et al., 2015; Brody et al., 2017; Duflo, 2012). The reported income gain of 53.6% points in the same direction, but it should be interpreted with care. It is a self reported change, it is not compared against a group of non members, and women who chose to remain in successful collectives may be over represented among respondents. The gain is therefore best read as descriptive support for the structural result and not as a measure of impact.

9. Theoretical Contributions

The study makes three theoretical contributions. First, it extends positioning theory, which was developed mainly in formal and branded goods markets, to SHG scale informal food enterprises, and it shows that positioning capability is empirically separable from production side capabilities and has a larger structural effect on enterprise sustainability in this context. This adds to the marketing capabilities literature by showing that a capability normally studied in established firms is measurable and consequential in a collective of low income women producers.

Second, the study integrates the resource based view and the capability approach in a single structural model. Enterprise sustainability serves as an explicit mediating construct between the internal capability bundle of the enterprise and household level socioeconomic transformation. This connects two literatures that usually address different levels of analysis, the enterprise in strategy research and the household in development research.

Third, the study provides one of few PLS SEM based empirical tests of enterprise support dimensions specific to women's collectives in Bihar and Jharkhand, states that are under represented in the SHG livelihoods literature relative to southern and western India. It also contributes a measurement approach in which five support dimensions are separately identified and compared within one model, which can be adapted by later studies in other regions and sectors.

10. Practical and Policy Implications

10.1 Implications for Program Design

Program curricula for women's collectives should treat market positioning as a core, trainable capability. Branding, packaging, pricing, and channel selection modules should be delivered alongside food safety and production training, and not added as an afterthought once production is stable. Mentoring from experienced marketers and structured exposure to urban and institutional buyers, for example through fairs, can help collectives learn how buyers perceive their products.

10.2 Implications for Livelihood Missions and Policy

State rural livelihood missions can strengthen the weaker digital path by prioritizing practical support for online selling, digital payments, and GeM onboarding, together with basic digital literacy for members. Given the low baseline adoption in the sample and the marginal digital result, targeted support may have disproportionate returns. Policy attention should also shift from group formation toward enterprise sustainability, with monitoring indicators that track buyer diversity, repeat orders, and revenue stability, in addition to loans disbursed and groups formed.

10.3 Implications for Financial Institutions

Banks and livelihood missions could consider linking credit and subsidy disbursement to demonstrated market linkage milestones, such as a signed institutional buyer contract or a consistent repeat order record, in addition to production milestones. Such linking would direct finance toward collectives whose products have identified buyers and would reduce the risk of lending for production that cannot be sold.

10.4 A Positioning Framework for Collectives

Building on the results, Table 6 proposes a portable positioning framework that collectives and support agencies can use to structure capacity building. The framework is derived from the study's findings and positioning theory and has not been tested empirically. It should be read as a practical guide to be validated in future work.

Table 6. Proposed Positioning Framework for Women's Food Processing Collectives

Element	Guiding question	Illustrative support
Target buyer	Which buyers value our product most, and where are they?	Buyer mapping with block level officials; visits to local and urban markets
Differentiation	What makes our product different from similar products?	Local ingredient stories, quality standards, and distinctive recipes
Brand and packaging	How will buyers recognize and trust our product?	Shared collective brand, compliant labels, and consistent packaging
Channel choice	Which channels give us stable volume at a workable margin?	Weekly markets, institutional supply, ODOP listing, GeM registration, and online selling
Reputation and visibility	How do we build repeat business and visibility?	Participation in fairs, digital presence, and buyer feedback routines
Review	Are we tracking buyers, repeat orders, and margins?	Simple records of orders and revenue reviewed by the federation

11. Limitations and Future Research

Several limitations qualify the findings. First, the cross sectional design does not allow causal precedence between positioning capability and enterprise sustainability to be established. It is possible that more sustainable collectives invest more in positioning, so the direction of the relationship could partly run the other way. A longitudinal panel that follows collectives as they adopt new positioning strategies, or a field experiment in which positioning support is randomly assigned, would strengthen causal claims.

Second, all constructs were measured by self report from a single respondent per collective member, and the income gain was recalled retrospectively. Although Harman's test and the latent method factor technique did not indicate serious common method bias, the results may still be affected by social desirability and recall error. Future work could combine survey responses with records of sales, orders, and buyer numbers, and could apply a full collinearity assessment (Kock, 2015).

Third, districts and collectives were selected purposively, and although respondents were randomly drawn within collectives, the findings may not generalize to all collectives in the two states or to other states. The sample also comprises food processing collectives only, and replication in other livelihood sectors would test whether positioning matters as much in, for example, textiles, handicrafts, or agriculture.

Fourth, the model treats enterprise support as five separate constructs and enterprise sustainability as a single construct. Future studies could examine whether market positioning affects distinct facets of sustainability such as revenue stability, membership retention, and product quality, and whether the support dimensions interact. The weak digital path calls for a study designed around digital adoption, ideally with variation in adoption intensity. Future research could also examine moderating effects of product category and distance to urban markets on the path from market linkage to sustainability, and could assess out of sample prediction using PLSpredict (Shmueli et al., 2019).

Finally, PLS SEM is designed for prediction and theory development, and the fit indices associated with covariance based SEM should be interpreted with caution when applied to PLS models (Sarstedt et al., 2016). Reporting SRMR, R^2 , Q^2 , and bootstrapped effects is the more appropriate practice for this method (Hair et al., 2022).

12. Conclusion

This study provides structural evidence that market positioning capability is not incidental to, but a primary driver of, enterprise sustainability among women's food processing collectives in Bihar and Jharkhand, and that sustainability in turn explains a substantial share of socioeconomic transformation at the household level. Market linkage and positioning had the largest effect of the five enterprise support dimensions, technical capacity building, social capital, and financial inclusion also contributed significantly, and the effect of digital transformation was marginal.

As policy attention in the SHG livelihoods space shifts from group formation toward enterprise sustainability, the findings argue for a matching shift in program design toward market oriented capability building, alongside continued investment in technical training, financial inclusion, and social capital. Treating branding, channel choice, and visibility as teachable capabilities gives collectives a practical route to turning what they can produce into what buyers will consistently choose to buy. Longitudinal and experimental evidence will be needed to confirm the causal direction of these relationships, but the present results offer a clear and actionable starting point.

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