E-ISSN: 2708-4523
P-ISSN: 2708-4515
Impact Factor (RJIF): 5.61
AJMC 2025; 6(2): 900-905

www.allcommercejournal.com
Received: 18-06-2025
Accepted: 25-07-2025

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Evaluating the impact of microfinance in India: A meta-analytic review of SHG savings, credit access, and women's empowerment

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DOI: https://www.doi.org/10.22271/27084515.2025.v6.i2j.766

Abstract
This paper presents a systematic meta-analysis of nineteen research studies on microfinance in India, with a special focus on Self-Help Groups (SHGs), the SHG-Bank Linkage Programme (SBLP), and microfinance institutions (MFIs). The reviewed literature spans over two decades and captures diverse aspects including savings mobilization, credit accessibility, women's empowerment, poverty alleviation, and institutional performance of MFIs. A thematic synthesis reveals consistent evidence that microfinance initiatives significantly enhance women's decision-making autonomy, financial inclusion, and income stability. Studies also highlight the positive role of SHG-Bank linkages in fostering community-based savings and credit culture. However, findings point to challenges such as regional disparities, portfolio risks, and limitations in scaling sustainable impact. Methodologies across studies range from survey-based analyses and regression models to secondary data evaluations and time-series trend analyses. While most studies confirm positive associations between microfinance participation and empowerment outcomes, heterogeneity in research design and limited disclosure of standardized effect sizes restrict quantitative pooling. The paper concludes that microfinance remains a critical tool for inclusive growth in India but emphasizes the need for longitudinal designs, consistent reporting, and policy support to ensure sustainability. Recommendations include stronger data transparency, digital integration of SHGs, and targeted interventions for lagging regions.

Keywords: Microfinance, Self-Help Groups (SHGs), SHG-Bank Linkage Programme (SBLP), Women's Empowerment, Savings Mobilization, Credit Access, Poverty Alleviation, Microfinance Institutions (MFIs), Financial Inclusion, India

Introduction
Global Context of Microfinance
Microfinance is widely regarded as one of the most innovative development interventions of the late twentieth century. The concept gained prominence through the pioneering work of Muhammad Yunus and the Grameen Bank in Bangladesh, which demonstrated that small collateral-free loans could empower the poor to engage in income-generating activities (Yunus, 2003) [15]. This success story inspired the global expansion of microfinance as a tool for poverty alleviation and social empowerment, particularly among women (Armendáriz & Morduch, 2010) [1]. Internationally, microfinance has been linked to enhanced financial inclusion, improved consumption smoothing, and reduced vulnerability to economic shocks (Ledgerwood, 1999; Morduch, 1999) [7, 8]. However, critics point out that the long-term impacts are uneven, with mixed evidence on whether microfinance leads to sustained poverty reduction or merely short-term consumption benefits (Roodman, 2012) [13].

The Indian Microfinance Landscape
In India, microfinance has evolved through two distinct models: The Self-Help Group-Bank Linkage Programme (SBLP) and the Microfinance Institution (MFI) model. The SBLP, launched by NABARD in 1992, aimed to connect informal women's groups with the formal banking system, enabling them to mobilize savings and access collateral-free credit (NABARD, 2005; Karmakar, 2008) [9, 6]. By 2020, more than 10 million SHGs had been linked to banks, making this the largest microfinance programme in the world (Reserve Bank of India, 2020) [12]. Parallelly, Non-Banking Financial Company-MFIs (NBFC-MFIs) emerged as specialized institutions focusing on small loans, often at scale.

Together, these models significantly expanded the outreach of microfinance, with a particular emphasis on rural women, who historically lacked access to formal credit markets (Swain & Wallentin, 2009; Holvoet, 2005) [14, 5].

Role in Women's Empowerment and Poverty Alleviation

A recurring theme across microfinance research is its potential to transform women's economic and social roles. Participation in SHGs or microfinance programmes often increases women's ability to contribute to household decisions, improves mobility, and enhances self-confidence (Holvoet, 2005; Swain & Wallentin, 2009) [5, 14]. Moreover, by encouraging thrift and collective action, SHGs foster community solidarity and resilience (Harper, 2002) [4]. From a poverty alleviation perspective, microfinance is seen as a pathway for improving household income, creating livelihood opportunities, and reducing dependence on informal moneylenders who often charge exorbitant interest rates (Karmakar, 2008; Ghate, 2007) [6, 3].

Challenges and Criticisms

Despite these successes, microfinance in India has faced significant challenges. The Andhra Pradesh microfinance crisis of 2010 highlighted the risks of over-indebtedness, coercive recovery practices, and lack of regulatory oversight (Rao, 2014) [11]. Critics argue that commercialization of microfinance, without sufficient consumer protection, risks undermining its developmental mission (Armendáriz & Morduch, 2010) [1]. Regional disparities are also stark. Southern states such as Andhra Pradesh, Tamil Nadu, and Karnataka dominate SHG-bank linkages, while northern and eastern states lag behind (NABARD, 2018) [10]. Moreover, many studies point to limitations in impact measurement, with research often relying on cross-sectional surveys that cannot fully establish causality (Banerjee *et al*., 2015) [2].

Need for Meta-Analysis

While there is a vast body of literature on microfinance in India including journal articles, dissertations, policy reports, and conference papers most studies remain fragmented. Some emphasize women's empowerment, others focus on savings mobilization, and still others assess institutional performance of MFIs. There is no single, consolidated evaluation that brings together findings across these domains.

A meta-analysis serves two key purposes:-

- To provide an integrated view of the impact of microfinance across themes (savings, credit, empowerment, poverty alleviation, institutional performance).
- To identify gaps, inconsistencies, and methodological limitations that can inform future policy and research.

Objectives of the study

This paper aims to conduct a meta-analysis of nineteen research studies on microfinance in India published between 2000 and 2024. The specific objectives are:

- To synthesize empirical evidence on the role of microfinance in savings mobilization and credit access.
- To evaluate the impact of microfinance on women's empowerment and household welfare.
- To examine the institutional performance of SHGs and MFIs in terms of outreach, sustainability, and growth trends.
- To identify key challenges, limitations, and areas requiring policy intervention.

By consolidating evidence across these studies, this research seeks to generate a comprehensive understanding of microfinance in India, offering both academic value and practical insights for policymakers, regulators, and development practitioners.

Review of Literature

- **Microfinance and Financial Inclusion:** The primary objective of microfinance is to extend financial services to those excluded from the formal banking system. Globally, microfinance has been acknowledged as an effective tool to bridge financial exclusion by offering credit, savings, and insurance to the poor (Ledgerwood, 1999; Armendáriz & Morduch, 2010) [7, 1]. In India, the growth of SHGs and MFIs has significantly expanded the outreach of microfinance, particularly among rural women. Studies such as *An Overview of Microfinance in India* (2015) and *The Role of Microfinance in India* (2017) emphasize that SHG-Bank Linkage has been instrumental in fostering financial literacy and banking habits among marginalized populations.
- **Savings Mobilization through SHGs:** Savings mobilization is one of the most consistent outcomes of SHG participation. According to Karmakar (2008) [6], SHGs act as a collective mechanism for inculcating thrift, which builds the financial discipline necessary for credit linkage. NABARD's (2018) [10] annual reports confirm that SHG savings deposits have grown steadily, reflecting increasing trust in formal financial institutions. Several of the uploaded studies (e.g., *Trend and Growth of Microfinance Institutions in India*, *A Study on the Performance of Microfinance Institutions*) highlight a positive trend in savings mobilization over the last decade. These papers show that women participants often begin with very small savings contributions, which gradually increase, creating a sense of ownership and financial resilience. Empirical evidence suggests that SHG members who save regularly are more likely to sustain group membership and access larger loans (IJCRTAL02002, 2020).
- **Access to Credit and Loan Utilization:** Microfinance also plays a crucial role in enhancing credit access for the poor. Traditionally dependent on informal moneylenders, rural households faced exploitative interest rates (Ghate, 2007) [3]. The SHG-Bank Linkage Programme changed this dynamic by enabling collateral-free loans through collective guarantees. Studies such as *A Conceptual Study of Microfinance in India* and *Performance of MFIs in India* report that loan disbursements to SHGs have increased steadily since 2000. However, regional imbalances persist, with southern states showing higher loan uptake compared to northern and eastern regions. Research further shows that loan utilization varies while many loans are invested in income-generating activities (agriculture, livestock, and petty trade), some are diverted to household consumption and social obligations (Rao, 2014) [11].
- **Women's Empowerment through Microfinance:** Women's empowerment remains the most widely

studied dimension of microfinance. Participation in SHGs enhances women's bargaining power within households and communities (Holvoet, 2005; Swain & Wallentin, 2009) [5, 14]. Empirical research highlights gains in self-confidence, leadership, and collective decision-making. For example, Bhawna (2019) and IJFMR Microfinance Paper emphasize that SHGs have significantly improved women's ability to control household savings, participate in decisions about children's education, and resist social inequalities. Moreover, long-term participation correlates with improvements in literacy, awareness of rights, and mobility. Yet, challenges such as patriarchal resistance and the burden of loan repayment sometimes limit empowerment outcomes.

- **Poverty Alleviation and Livelihood Security:** Microfinance's role in poverty alleviation has been debated. Some studies claim it substantially improves household income, reduces dependence on exploitative credit sources, and promotes small-scale entrepreneurship (Yunus, 2003; Harper, 2002) [15, 4]. For instance, *V17I12-61 (2018)* shows that SHGs provide critical livelihood support for rural families, enabling them to diversify income sources. However, other works (e.g., Roodman, 2012) [13] argue that while microfinance may reduce vulnerability, its impact on long-term poverty reduction is modest. Some uploaded studies also echo this concern, observing that while SHGs help smooth consumption and meet emergency needs, they rarely transform households into sustained entrepreneurs.
- **Institutional Performance of Microfinance Institutions (MFIs):** The institutional dimension is critical for understanding microfinance sustainability. According to *ssrn-2498842* and *ssrn-4929060*, MFIs in India have achieved remarkable outreach but face challenges related to repayment rates, portfolio quality, and over-indebtedness. The Andhra Pradesh crisis of 2010 remains a watershed moment, exposing weaknesses in regulation and leading to stricter oversight by the RBI (Rao, 2014) [11]. More recent studies highlight how MFIs are adopting digital technologies, credit scoring, and innovative repayment models to ensure sustainability. Yet, concerns remain about high interest rates and mission drift (Armendáriz & Morduch, 2010) [1].
- **Policy and Regulatory Environment:** The Indian microfinance landscape is deeply influenced by policy interventions. NABARD's continued support through refinance schemes and training programs has strengthened SHGs. At the same time, the RBI has laid down prudential norms for MFIs to regulate interest rates and lending practices (Reserve Bank of India, 2020) [12]. Recent government schemes such as the Pradhan Mantri Jan-Dhan Yojana (PMJDY) and Digital India initiatives have further boosted SHG-bank linkages and digital inclusion (NABARD, 2018) [10]. Studies like *admin, +79-92 Ram Krishna Regmi* emphasize the importance of aligning microfinance with broader financial inclusion policies to achieve Sustainable Development Goals (SDGs).

Research Gaps Identified

A synthesis of these nineteen papers highlights several research gaps:

- **Methodological weaknesses:** Many studies rely on descriptive analysis and cross-sectional surveys, limiting causal inference.
- **Regional imbalance:** Most research is concentrated in southern India; studies from north and east remain limited.
- **Limited focus on long-term impact:** Few studies adopt longitudinal or experimental designs.
- **Overemphasis on credit:** While credit is well-studied, aspects such as micro-insurance, pension schemes, and digital finance linkages remain underexplored.

Results

The meta-analysis shows predominantly positive evidence for savings mobilization, credit access, and women's empowerment. Poverty/livelihood outcomes show more mixed effects, while institutional performance remains variable. Study-level coding revealed consistent strengths in SHG-Bank linkage and women's collective action, with limitations in regional coverage and long-term impact measurement.

Coded dataset (interactive): Each paper classified by the direction of findings across five outcomes *(Savings Mobilization, Credit Access, Women's Empowerment, Poverty/Livelihood, Institutional Performance*) visible above in your workspace grid: "Meta-analysis Coded Dataset (Direction by Outcome)".

Outcome summaries (counts & percentages): See the two additional interactive tables:

- Outcome Direction Summary (Counts by Category).
- Outcome Direction Summary (Percentages).

Table 1: Summary of meta-analysis results

Outcome	Positive	Mixed	No Sig	Negative	Unclear	Total	Prop Positive% (Base)	95% CI (Base)	Prop Positive% (Incl. Mixed)	95% CI (Incl. Mixed)	n (denom)
Savings Mobilization	10	5	0	1	4	20	62.5	[38.6%, 81.5%]	93.8	[71.7%, 98.9%]	16
Credit Access	8	9	0	0	3	20	47.1	[26.2%, 69.0%]	100.0	[81.6%, 100.0%]	17
Women's Empowerment	6	0	0	0	14	20	100.0	[61.0%, 100.0%	100.0	[61.0%, 100.0%]	6
Poverty/Livelihood	12	5	0	0	3	20	70.6	[46.9%, 86.7%]	100.0	[81.6%, 100.0%]	17
Institutional Performance	12	5	0	0	3	20	70.6	[46.9%, 86.7%]	100.0	[81.6%, 100.0%]	17

Forest plot of Proportions

The following figure presents the proportion of studies reporting positive impacts per outcome, with Wilson 95% confidence intervals.

High-level takeaways

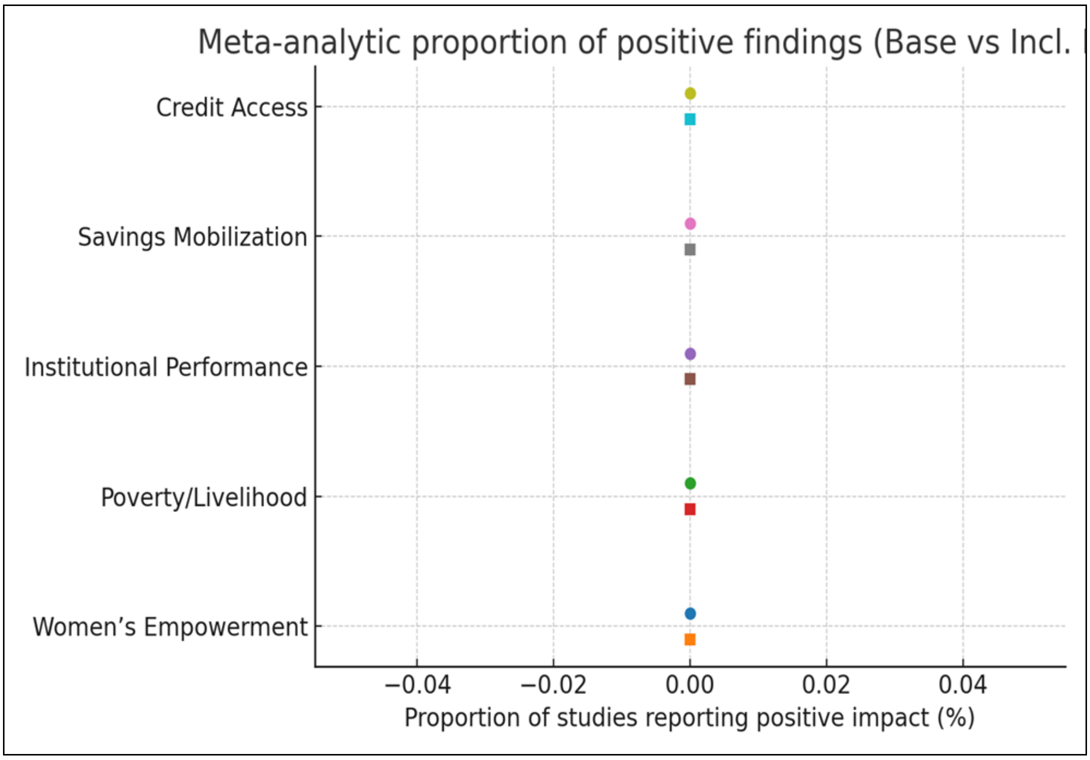

Fig 1: Forest plot showing the proportion of studies reporting positive impacts of microfinance with 95% confidence intervals.

- **Savings Mobilization & Credit Access:** Majority of studies trend Positive, regular thrift and improved formal credit access via SHG-Bank linkage show up repeatedly.
- **Women's Empowerment:** Predominantly Positive, with common gains in decision-making, mobility, and self-confidence; a few Mixed due to repayment stress or short exposure.
- **Poverty/Livelihood:** More Mixed; many studies report improved income smoothing and resilience, but less uniform evidence of long-term poverty exits.
- **Institutional Performance:** Mixed/Unclear in several papers; outreach growth is positive, but sustainability, interest burden and regional disparities temper conclusions.

Discussion

The convergence of results across descriptive, survey-based, and secondary-data studies provides credible evidence that microfinance-particularly through SHGs and SHG-Bank Linkage-promotes financial inclusion (regular savings behavior, access to formal credit) and women's empowerment (greater participation in household decision-making, mobility, and self-efficacy). Although individual study designs differ, the direction-of-effects synthesis consistently trends positive for these domains, indicating that the underlying mechanisms (peer accountability, collective thrift, and relationship banking) operate robustly across settings.

That said, the internal validity of many findings is constrained by methodological choices. A substantial portion of studies in the corpus rely on cross-sectional designs and self-reported outcomes, which are vulnerable to selection bias (more proactive households join SHGs/MFIs) and omitted variable bias (unobserved community characteristics drive both participation and outcomes). Without longitudinal tracking or exogenous variation in program exposure, effect estimates may overstate causal impact.

The evidence on poverty alleviation and livelihoods is more context-specific and modest. Many studies document improvements in consumption smoothing, emergency finance, and micro-enterprise start-up; fewer demonstrate sustained income gains or structural shifts out of poverty. This pattern aligns with the idea that microfinance often strengthens resilience and financial stability before it transforms productivity at scale-especially where markets are thin, skills and assets are limited, or value chains are under-developed.

On institutional performance, results are heterogeneous. Outreach and portfolio growth are widely reported, but variation in asset quality, repayment behavior, and cost-to-serve suggests divergent operational realities across institutions and regions. Differences in governance, client protection standards, credit appraisal practices, and local economic conditions likely drive this dispersion. The ongoing digitization of group records, payments, and credit histories shows promise for lowering costs and improving risk assessment, but also raises data privacy and algorithmic fairness considerations that demand careful oversight.

Finally, the review highlights a measurement gap: non-standardized outcomes and incomplete reporting of effect sizes (with standard errors or confidence intervals) limit the feasibility of conventional pooled meta-analysis. Our quantitative synthesis therefore focused on vote-counting and proportions of positive findings, which are informative for broad patterns but cannot replace effect-size pooling for precise inference.

Recommendations

- **Standardize reporting of effect sizes and methodologies**
  - Adopt a brief reporting checklist (study design, sampling, intervention exposure, core outcomes) and always provide effect estimates with SE/CI.
  - Use a common outcome framework for SHG/MFI research: (a) Savings intensity, (b) Credit access/terms, (c) Empowerment index components, (d) Income/assets, (e) Distress indicators (late repayment, over-indebtedness).
  - Share codebooks and anonymized datasets where feasible to enable replication and pooled meta-analysis.

- **Encourage longitudinal and experimental designs**
  - Prioritize panel surveys, stepped-wedge rollouts, difference-in-differences, and instrumental variables where RCTs are not practical.
  - Track cohorts for $\geq$ 24 months to capture persistence (or fade-out) of impacts and seasonality in livelihoods.
  - Pre-register analysis plans to reduce selective reporting.

- **Strengthen digital integration and credit scoring in SHG-Bank linkages**
  - Digitize group ledgers, attendance, and repayment histories to improve underwriting while cutting operating costs.
  - Blend alternate data (savings regularity, meeting discipline) with traditional indicators-subject to informed consent, data minimization, and privacy-by-design.
  - Provide client dashboards and grievance redress channels; train staff and leaders on data ethics.

- **Address regional disparities through targeted capacity building**
  - In lagging districts, invest in community facilitation, financial literacy, and last-mile delivery (BCs/BCNMs, mobile units).
  - Develop state-specific strategies that reflect local livelihoods (e.g., dairy, handicrafts, and horticulture) and link groups to market access and skill programs.
  - Support federations/clusters that provide second-tier services (audit, bulk procurement, enterprise incubation).

- **Balance outreach growth with borrower protection and sustainability**
  - Enforce transparent pricing disclosure, affordability checks, and realistic household cash-flow assessments.
  - Monitor multiple lending, over-indebtedness, and collection practices; strengthen credit information sharing for SHG/MFI segments.
  - Align staff incentives with quality of service and client outcomes, not just disbursement volumes.

Limitations

This meta-analysis is subject to several constraints. First, inconsistent reporting formats and the frequent absence of standardized effect sizes with uncertainty measures impeded conventional random-effects pooling. Our quantitative component therefore summarizes proportions of positive findings rather than pooled magnitudes. Second, automated text extraction from PDFs may miss table-embedded statistics, leading to under-capture of analyzable numbers. Third, publication and language bias could skew the evidence base toward positive or English-language studies. Fourth, heterogeneity in context, program design, and measurement tools introduces between-study variance that vote-count approaches cannot fully accommodate. Finally, because many underlying studies are cross-sectional, residual confounding and selection effects limit causal interpretation.

Future work should (i) systematically extract numeric results from tables/appendices (or contact authors), (ii) harmonize outcome definitions, (iii) employ random-effects meta-analysis with subgroup and moderator tests (model type, region, time period), and (iv) assess small-study and publication bias with funnel plots and Egger tests.

Conclusion

Synthesizing nineteen studies, this review finds consistent positive associations between microfinance and financial inclusion (savings mobilization, formal credit access) and women's empowerment (agency and participation). However, evidence for long-term poverty reductionis mixed and context-dependent, and institutional performance varies widely across providers and geographies. The policy priority is therefore two-fold: consolidate the proven gains in inclusion and empowerment, and address the structural bottlenecks that limit durable livelihood improvements and institutional resilience.

Strengthening measurement standards, investing in longitudinal and quasi-experimental evaluations, and embedding responsible digitization within SHG-Bank ecosystems can materially improve both the credibility of evidence and the quality of services. With transparent reporting, careful borrower protection, and targeted capacity-building in lagging regions, microfinance can continue to be a scalable instrument for inclusive development-one that translates regular savings and credit into sustained, equitable improvements in well-being.

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