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Joint liability groups in India: Catalyst for financial inclusion: A study through NABARD's lens

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Abstract
Access to affordable formal credit remains a significant challenge for economically disadvantaged populations, particularly in rural India. The Joint Liability Group (JLG) model has emerged as a viable microfinance solution to bridge this gap. Our present study examines the growth and structure of JLGs in India in recent years. Using data from NABARD's Status of Microfinance in India, and All India Rural Financial Inclusion Survey reports, we analyse trends in JLG formation, loan disbursement and financial inclusion across different regions of India in 2023-24 compared to 2013-14. Further, a Joint Liability Group-specific Financial Inclusion Index (JLG-FII) has been constructed to assess state-level variations in financial outreach of JLG in some selected states of India.

Keywords: Microfinance, joint liability groups, social collateral, financial inclusion

1. Introduction
Addressing the financial needs of impoverished and underprivileged segments of the population has long been a persistent challenge for policymakers, particularly in underdeveloped nations (Basu, 1997) [2]. India, as a developing country, is no exception. This issue is especially pronounced in rural areas, where both farm and non-farm households often lack access to formal financial services. While collateral requirements are frequently cited as obstacles to obtaining bank credit, factors such as bureaucratic reluctance to engage with high-risk borrowers associated with risky economic activity, or the demand for small-scale loans for non-productive purposes such as health emergency, social festivities, litigation, consumption of food grain often pose greater barriers within the formal financial landscape (Ray, 1998) [12]. Banks may refuse loans to financially vulnerable borrowers due to the elevated costs associated with monitoring and administration, or because of the moral hazard linked to high-risk economic activities. In rural areas, for instance, agricultural outputs are heavily influenced by weather conditions, making crop production susceptible to risks such as crop failure caused by adverse climatic events.

Microfinance has emerged as a significant financial innovation in the 21st century to address these challenges (Mukherjee and Bhattacharya, 2015) [10]. In India, the National Bank for Agriculture and Rural Development (NABARD) has implemented two prominent models—the Self-Help Group (SHG) and the Joint Liability Group (JLG)—to fulfil the need for small-scale, timely credit through local information networks. The SHG-Bank Linkage Program (SHG-BLP), introduced during the era of economic liberalization, has proven to be an effective microfinance instrument. Notably, the post-COVID period has witnessed substantial growth in women-centric SHGs, highlighting their potential for empowering women economically (Mondal and Bhattacharjee, 2024) [8].

However, questions persist regarding the efficacy of SHGs in meeting the needs of the most vulnerable segments of society. Features such as loans tied to savings, frequent repayment schedules, shorter loan tenures, and irregular group meetings often render the SHG model less attractive to the lowest-income groups, who typically lack sufficient collateral (Myvizhi *et al*., 2021) [11]. Additionally, the high incidence of non-performing assets in certain regions, arising from the inclusion of high-risk borrowers, complicates the credit sanction process (Mondal and Bhattacharjee, 2024) [8].

The Joint Liability Group (JLG) model offers a potential solution to these challenges. With women's active engagement in joint liability groups, improved repayment rates are recognized as a key advantage in securing formal credit (Myvizhi *et al.*, 2021) [11]. Further, JLGs do not require savings as a prerequisite for loan disbursement. Instead, JLG loans are collateral-free and rely on social information networks, where group members mutually guarantee each other's repayment (Krishna and Balasubramanian, 2024) [7]. A JLG is an informal group of 4-10 individuals from similar socio-economic backgrounds who come together to access bank loans. The model was first pioneered by the Bank of Agriculture and Agricultural Cooperatives (BAAC) in Thailand. Inspired by BAAC's success in addressing the credit needs of small farmers and enhancing credit flow in the agricultural sector, NABARD introduced the JLG pilot scheme in 2004-05 (Cherian and Ramchandra, 2012) [1].

In India, JLGs cater to the most vulnerable sections of society, including micro-entrepreneurs, artisans, small farmers, tenant farmers, sharecroppers, landless farmers, and oral lessees. Loans under the JLG framework can be availed either on an individual basis or through a group mechanism. In individual financing, each member assesses their credit absorption capacity, with all members jointly responsible for repayment. In group financing, the group as a whole is eligible for a single loan that represents the combined credit needs of all its members. All members collectively execute the loan documents and share the debt liability. Typically, JLGs are formed within homogeneous communities or villages, where members have a strong understanding of each other's economic activities, creditworthiness, and loan purposes (Saxena and Kohli, 2014) [14].

Trust functions as a critical form of social collateral in securing loans (Kadiyala and Ascioglu, 2024; Suran, 2008) [6, 17]. Group members exercise caution when forming JLGs, as any default can result in exclusion from future credit access and damage to the group's reputation within the community. This dynamic helps mitigate the problem of adverse selection, as risk-averse groups are unlikely to include individuals with poor credit histories. By leveraging group cohesion and local information, JLG members regularly exchange ideas and strategies during scheduled meetings.

In our present study we wish to understand the trends in JLG formation, loan disbursement and financial outreach across different regions and selected states of India in recent years. Our study is systematically structured into five distinct sections. Section 1 provides an introduction to Joint Liability Groups, while Section 2 offers a concise review of existing literature. Section 3 outlines the data and methodological framework, followed by Section 4, which critically examines the expansion of Joint Liability Groups in India in recent years. Finally, Section 5 presents the conclusions drawn from our research.

1.1 Theoretical Framework

Model 1

Let us consider a Joint Liability Group-Microfinance Model, in which purpose of joint liability group is to extend small amount of loan (L) to a small group of borrowers (N) collectively guarantees loan repayment.

Suppose each borrower (I) receives a loan L_i at a market rate of interest (r) then total loan to the group (G_L) is-

$$G_L = \sum_{i=1}^{N} L_i \qquad \text{…. (1)}$$

Each borrower (i) is expected to repay loan outstanding at any future date (R_i) is-

$$R_i = L_i\,(1+r) \qquad \text{…. (2)}$$

If a borrower of the joint liability group default, rest of group members share the default burden. Suppose a borrower default with probability p (where, $0<p<1$).

Suppose, 'j' number of borrowers in the group defaults then (N-j) number of borrowers share the default burden.

Thus, additional repayment per non-defaulting member =

$$\sum_{i=1}^{j} R_i/(N-j) = j.R/(N-j) \qquad \text{…. (3)}$$

Total repayment per non-defaulting member ($R'_{(N-j)}$) is-

$$R'_{(N-j)} = \{R_{(N-j)} + \sum_{i=1}^{j} R_i/(N-j)\} = \{R_{(N-j)} + j.R/(N-j)\} \qquad \text{…. (4)}$$

Where, $R_{(N-j)}$ is actual repayment of non-defaulters at the event of "no-default" situation.

Using expected default

$$E(j)=p.N \qquad \text{…. (5)}$$

Expected repayment burden of each non-default borrower is-

$$E\{R'_{(N-j)}\} = E\{R_{(N-j)} + \sum_{i=1}^{j} R_i/(N-j)\} = E\{R_{(N-j)} + j.R/(N-j)\} = \{R_{(N-j)} + (pN).R/(N-pN)\} \qquad \text{…. (6)}$$

(Substituting the value of (5) in (6))

Model 2

Consider an individual microfinance model where in individual lending, default risk is borne by the lender leading to higher rate of interest (r') where $r'>r$ (i.e. higher than the interest charged by lender in case of group lending). Suppose a borrower default with probability q (where, $0<q<1$).

When a borrower is 'safe' i.e. q=1, lender receives positive expected return,

$$E(R_i) = L_i\,(1+r') > 0 \qquad \text{…. (7)}$$

But when the borrower is 'risky' i.e. q=0, lender receives nothing,

$$E(R_i) = 0 \qquad \text{…. (8)}$$

Thus, Model 1 (joint liability group lending model) offers lower interest rate compared to Model 2 (individual lending model) due to the fact that $E\{R'_{(N-j)}\} > E(R_i)$ at the event of borrower's default which enhance the seamless accessibility of affordable credit for economically disadvantaged sections of society through a collective lending mechanism.

2. Literature Review

A review of existing literature reveals several compelling insights into the role and impact of Joint Liability Groups (JLGs) in India. Scholars have extensively explored the developmental dimensions of JLGs, particularly their role in financial inclusion and economic empowerment. For instance, (Sreeni, 2022) [15] highlighted how investments channelled through JLGs significantly contributed to Kerala's poverty alleviation programs. The study demonstrated that group-based lending not only facilitated access to credit but also empowered women, ultimately enhancing their living standards. Moreover, while JLGs have been instrumental in improving rural economies by creating local employment opportunities and sustaining livelihoods, structural challenges-such as rising input costs without a corresponding increase in output price-often impede their long-term growth.

(Krishna and Balasubramanian, 2024) [7] Analysed loan disbursement trends to southern Indian states over the past five years, illustrating how JLGs serve as crucial financial conduits for marginalized populations traditionally excluded from formal banking channels. Similarly, (Halder and Stiglitz, 2016) [4] recognized JLGs as innovative financial instruments within South Asian economies. Their study emphasized that group lending effectively bridges the gap between the exclusivity of formal banking and the exploitative nature of informal moneylenders, offering a structured yet accessible alternative to credit for underserved communities.

Further, (Cherian and Ramchandra, 2012) [1] underscored the significant benefits that Kerala's farmers have derived from JLGs, particularly in fostering micro-business development. Addressing external economic shocks, (Kadiyala and Ascioglu, 2024) [6] examined the impact of the COVID-19 pandemic as an exogenous shock on individual default rates in microcredit. Their extensive research found that group lending mechanisms serve as a more resilient strategy for mitigating loan defaults within the microfinance sector.

(Jana, 2023) [5] Provided a regional perspective, noting that while Regional Rural Banks (RRBs) and cooperative banks have been relatively slow in promoting and financing JLGs in West Bengal, commercial banks have played a more proactive role in supporting these credit groups within the state. Meanwhile, (Mukherjee and Bhattacharya, 2015) [10] identified group size as a critical determinant of JLG efficiency. Their findings suggest that the effectiveness of group lending hinges on carefully selecting members, taking into account social and ethnic dynamics. The study further noted that while larger groups may enhance cooperative efforts, they also increase the risk of free-riding in monitoring activities, particularly when monitoring costs are high.

Comparative studies have also examined the interplay between different microfinance models. (Sarma and Mehta, 2014) [13] Contrasted Self-Help Groups (SHGs) and Joint Liability Groups (JLGs), finding that SHGs are more complementary in regions with a strong presence of Non-Government Organizations (NGOs) and formal financial institutions, whereas JLGs thrive in areas characterized by homogeneity and entrepreneurial tendencies. Given India's dynamic social structure, the coexistence of both models appears necessary to cater to the diverse financial needs of its population.

3. Data and Methodology

In our research, we have utilized regional data on the number of joint liability groups (JLGs) fostered by formal financial institutions and the volume of loans disbursed to these groups, as documented in the Status of Microfinance in India reports by NABARD from 2013-14 to 2023-24. These reports typically compile data on the number of microfinance groups supported by various formal financial sectors, the total credit extended to both general microfinance groups and exclusive women's groups, as well as the non-performing assets generated by these groups.

To understand the average annual growth rate of Joint Liability Groups over a period, regardless of interim fluctuations and to compare growth rates between multiple regions and credit agencies over a particular time frame (n years), Compound Annualised Growth Rate (CAGR) has been used in our study. To analyse the underlying trend of a variable over a multi-year period without being affected by short-term spikes CAGR is best used for understanding long-term growth and making comparisons.

$$\text{CAGR} = (\text{Initial Value/Final Value})^{1/n} - 1 * 100$$

Further, to evaluate the state-specific performance of bank-linked Joint Liability Groups (JLGs) in addressing the financial needs of economically disadvantaged sections of society, we have developed a Joint Liability Group-specific Financial Inclusion Index (JLG-FII) for selected states across different regions of India for the year 2021-22. As the most recent comprehensive dataset on JLG-specific financial inclusion is available only for 2021-22, based on the NABARD All India Rural Financial Inclusion Survey (NAFIS) 2021-22, our study is constrained to this time frame. NAFIS was first introduced in 2016-17 to provide a holistic understanding of the economic conditions of rural farm and non-farm households and to assess their level of financial inclusion.

Table 1: Key parameters used to construct Joint Liability Group-specific Financial Inclusion Index (JLG-FII)

Parameters	Source of Data
Number of Bank Linked-Joint Liability Groups promoted during 2021-22 (X_1)	Status of Microfinance in India, NABARD
Loan Disbursed to Bank Linked-Joint Liability Groups during 2021-22 (Amount in Lakh) (X_2)	Status of Microfinance in India, NABARD
Households reporting availability of any Joint Liability Group in their village (in%) during 2021-22 (X_3)	NABARD All India Rural Financial Inclusion Survey
Households having at least one member associated with Joint Liability Group (in%) during 2021-22 (X_4)	NABARD All India Rural Financial Inclusion Survey

Each parameter's value has been normalized using the Min-Max Normalization technique to scale the data within a comparable range of 0 to 1.

X_i = (Actual Value-Minimum Value)/(Maximum Value-Minimum Value)

The Joint Liability Group-specific Financial Inclusion Index (JLG-FII) has been formulated by assigning equal weights (WI) to each parameter.

$$\text{JLG-FII} = (W_1 * X_1 + W_2 * X_2 + W_3 * X_3 + W_4 * X_4)$$

State with JLG-FII value close to 0 indicate weak financial inclusion, whereas a state with JLG-FII value approaching 1 signifies strong financial inclusion.

4. Analysis

The economic well-being of the extensive rural population is profoundly dependent on the agricultural sector, which is predominantly characterized by a significant presence of tenant farmers and landless labourers. The income of these groups is largely reliant on daily wages, which fluctuate seasonally—peaking during the harvest period and dwindling in the off-season. Smallholder farmers frequently require credit to stabilize their consumption patterns during lean periods. These credit needs are often modest in scale and may be considered urgent. Providing timely financial support to these communities through Joint Liability Groups offers a viable solution.

Table 2: Region and Year-wise growth of Bank Linked-Joint Liability Groups (JLGs) in India

Region	No. of JLGs promoted during 2013-14	Loan Disbursed during 2013-14 (Amount in Lakh)	No. of JLGs promoted during 2018-19	Loan Disbursed during 2018-19 (Amount in Lakh)	No. of JLGs promoted during 2023-24	Loan Disbursed during 2023-24 (Amount in Lakh)	Compound Annual Growth Rate (CAGR) of JLGs promoted in 2023-24 with respect to 2013-14 (in%)	Compound Annual Growth Rate (CAGR) of loan disbursed in 2023-24 with respect to 2013-14 (in%)
Central	16068	16706.54	160272	326307.22	1346359	2422704.31	55.71	64.49
Eastern	7178	9040.10	617555	938742.04	2292176	4359195.52	78.00	85.49
North-Eastern	63602	58320.52	78013	90666.80	65098	128984.69	0.23	8.26
Northern	49053	31512.10	132272	218725.63	592138	1138594.95	28.28	43.15
Southern	26867	18475.92	469254	1217348.12	2124245	8958505.09	54.81	85.59
Western	45103	87960.78	146290	302897.58	914324	1823353.07	35.11	35.41

Source: Authors' own calculation using data from Status of Microfinance in India, NABARD

Table-2 illustrates the regional growth trends in the promotion of Joint Liability Groups (JLGs) and the loan amounts disbursed under the Bank Linked-JLG scheme in India. By combining the Compound Annual Growth Rate (CAGR) values with economic insights, we can conclude Eastern region recorded the highest CAGR for both JLGs promoted (78.00%) and loans disbursed (85.49%).

Similarly, the Southern region exhibited robust growth (CAGR of 54.81% for JLGs and 85.59% for loans). These regions have historically been key areas for microfinance institutions due to their dense rural population and strong agricultural base, which drive demand for small-scale credit. The Southern region's high growth reflects the maturity of microfinance institutions in states like Tamil Nadu, Andhra Pradesh, and Kerala, where JLG models are well-established. In regions with high growth in the number of JLGs (e.g., Eastern and Southern), there is a proportionately higher growth in loan disbursements. This indicates that the availability of organized groups directly enhances credit accessibility and utilization.

The Central region showed notable growth (CAGR: 55.71% for JLGs and 64.49% for loans), indicating significant efforts to expand financial inclusion in states such as Madhya Pradesh and Uttar Pradesh. However, Northern region's CAGR (28.28% for JLGs and 43.15% for loans) suggests steady expansion but at a slower pace. This could be due to diverse challenges such as lower rural outreach or competition from traditional banking institutions. Western region also demonstrated moderate growth (CAGR: 35.11% for JLGs and 35.41% for loans), driven by financial inclusion programs in states like Maharashtra and Gujarat.

The North-Eastern region experienced negligible growth in JLGs promoted (CAGR: 0.23%) and limited growth in loans disbursed (8.26%). This stagnation could stem from geographic challenges, lower population density, and limited banking infrastructure, which constrain the effectiveness of microfinance initiative.

Table 3: State-wise value of Joint Liability Group-specific Financial Inclusion Index (JLG-FII) in India in 2021-22

State	Region	Value of JLG-FII
Chhattisgarh	Central	0.11
Madhya Pradesh		0.28
Uttarakhand		0.23
Uttar Pradesh		0.17
Bihar	Eastern	0.75
Jharkhand		0.33
Odisha		0.40
West Bengal		0.15
Assam	North-Eastern	0.20
Manipur		0.01
Tripura		0.04
Haryana	Northern	0.15
Himachal Pradesh		0.03
Punjab		0.21
Rajasthan		0.23
Andhra Pradesh	Southern	0.37
Karnataka		0.38
Kerala		0.52
Tamil Nadu		0.73
Gujarat	Western	0.14
Maharashtra		0.43

Source: Authors' own calculation using data from Status of Microfinance in India, NABARD and NABARD All India Rural Financial Inclusion Survey (NAFIS), 2021-22

In the central region, States like Chhattisgarh (0.11) and Uttar Pradesh (0.17) exhibit weak financial inclusion, whereas Madhya Pradesh (0.28) and Uttarakhand (0.23) show relatively better inclusion (See Table 3). Bihar leads with a high JLG-FII of 0.75, indicating strong financial outreach, while Jharkhand (0.33), Odisha (0.40), and West Bengal (0.15) display moderate to weak inclusion in eastern region. North-eastern region has some of the lowest JLG-FII values, with Manipur (0.01), Tripura (0.04), and Assam (0.20) struggling with financial inclusion, highlighting the need for targeted policy interventions. Northern regional States like Haryana (0.15), Himachal Pradesh (0.03), Punjab (0.21), and Rajasthan (0.23) show weak to moderate financial inclusion. In southern region, Tamil Nadu (0.73) and Kerala (0.52) demonstrate strong financial inclusion, while Andhra Pradesh (0.37) and Karnataka (0.38) perform moderately well. Western regional states like Gujarat (0.14) and Maharashtra (0.43) show contrasting levels of inclusion, with Maharashtra outperforming Gujarat significantly.

While Bihar and Tamil Nadu stand out with JLG-FII values above 0.70, suggesting robust financial outreach, states like Kerala, Maharashtra, Odisha, and Jharkhand exhibit moderate levels of JLG-specific financial inclusion. The North-Eastern region, along with states like Himachal Pradesh and Gujarat, shows poor financial inclusion, necessitating strategic interventions for credit accessibility. The disparities in JLG-FII values across states highlight the uneven distribution of financial resources, emphasizing the need for region-specific policies to enhance financial inclusion among JLGs.

5. Conclusion

The Joint Liability Group (JLG) model has proven to be a pivotal instrument in extending formal credit to sections of society that have historically been excluded from mainstream financial systems. Our research highlights the steady expansion of JLGs across India, with notable growth in the Eastern and Southern regions, driven by strong institutional support and demand for small-scale credit. However, disparities persist, particularly in the North-Eastern and certain Northern states, where infrastructural barrier hinder financial outreach. Our findings underscore the effectiveness of JLGs in fostering financial inclusion, as reflected in the Joint Liability Group-specific Financial Inclusion Index (JLG-FII). States such as Bihar and Tamil Nadu exhibit strong JLG-based financial inclusion, whereas Manipur, Tripura, and Himachal Pradesh demonstrate weak penetration. To address the challenges faced by joint liability groups such as regional disparities, limited outreach, and infrastructural bottlenecks, a targeted public policy framework is necessary. Expand JLG outreach to underserved regions, improve financial literacy and incentivizing public and private financial organizations to establish JLG unit in remote areas may be the possible policy recommendations.

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