

Unequal Progress: A Regional Evaluation of Self-Help Group Performance in India (2010–2022) Using Non-Parametric Methods

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Abstract: This research examines the regional inequities in the operational effectiveness of Self-Help Groups (SHGs) across six distinct geographical areas in India—Northern, Northeastern, Eastern, Central, Western, and Southern—from the years 2010 to 2022. By utilizing secondary data derived from NABARD's Status of Microfinance in India reports, the analysis concentrates on five pivotal indicators: the number of SHGs, savings, bank loans disbursed, outstanding loans, and Non-Performing Assets (NPAs). Through the application of Compound Annual Growth Rate (CAGR), descriptive statistical methods, and non-parametric tests (specifically Kruskal-Wallis H and Dunn's post-hoc test), this investigation uncovers pronounced inter-regional disparities in SHG performance. The results indicate that the Southern region demonstrates the most robust and mature SHG ecosystem, while the Eastern region, despite exhibiting substantial growth rates, contends with an escalation in NPAs. The Northeastern region showcases significant growth in savings but is hindered by financial instability, whereas the Central and Northern regions illustrate a cautious trajectory of expansion accompanied by improved control over NPAs. These discrepancies can be ascribed to factors such as institutional support, financial literacy levels, geographic isolation, and the underlying economic structure. The outcomes underscore the necessity for region-specific policy interventions, the enhancement of credit monitoring mechanisms, and the implementation of tailored financial literacy programs. By statistically substantiating regional variations, this study contributes to the formulation of evidence-based policy frameworks and offers valuable insights for synchronizing SHG performance with sustainable development objectives.

Keywords: Self-Help Groups, Regional Disparities, Financial Inclusion, Non-Performing Assets, Non-Parametric Analysis

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1. Introduction

The Self-Help Group (SHG) initiative in India has evolved into a pivotal mechanism for enhancing financial inclusion, facilitating grassroots development, and empowering women, particularly within rural contexts. Over time, the proliferation of SHGs has markedly impacted socio-economic transformations across various states in India. Nevertheless, despite the extensive adoption of SHGs, notable disparities in their performance continue to exist across different regions of the nation. These variations can be attributed to differing levels of institutional support, financial literacy, economic infrastructure, and socio-cultural conditions.

This research endeavours to undertake a thorough regional analysis of SHG performance across six prominent regions of India – Northern, Northeastern, Eastern, Central, Western, and Southern – spanning a 12-year timeframe from 2010 to 2022. Through the evaluation of essential financial metrics such as the number of SHGs, mobilized savings, disbursed bank loans, outstanding loans, and non-performing assets (NPAs), the investigation aims to discern the structural and operational divergences that influence SHG outcomes. The application of Compound Annual Growth Rate (CAGR), Kruskal-Wallis H Test, and Dunn Post-Hoc analysis facilitates a rigorous statistical evaluation of these discrepancies.

The results yield an enhanced comprehension of regional strengths and weaknesses in SHG operations and contribute to evidence-based policy interventions that target the mitigation of regional inequalities while fostering sustainable financial inclusion.

2. Literature Review and Research Gap

The SHG model has emerged as a pivotal mechanism for fostering grassroots development, enhancing women's empowerment, and facilitating financial inclusion within the Indian context. Empirical investigations conducted over the preceding three decades substantiate the critical role that SHGs occupy in the realms of poverty alleviation, the promotion of saving behaviours, and the facilitation of community-driven access to credit.

Yadav et al. (n.d.) executed a thorough systematic review encompassing 140 studies spanning from 1992 to 2021, thereby affirming the substantial contribution of SHGs to socio-economic empowerment, particularly among women. This review accentuated notable advancements in financial autonomy, leadership capacities, and income-generating potential throughout rural India. Nonetheless, apprehensions regarding the efficacy of SHGs in securing long-term sustainability persist.

The SHG-Bank Linkage Programme (SHG-BLP), a flagship initiative aimed at formalizing SHG access to institutional credit, has been integral to India's microfinance paradigm. However, Mondal and Bhattacharjee (2024) underscore the escalating levels of Non-Performing Assets (NPAs) within the SHG-BLP, particularly in the central and northern regions. This predicament has unveiled deficiencies in credit risk assessment and monitoring frameworks, especially concerning loans that are either women-led or of substantial volume.

Regional disparities in financial outreach have emerged as a significant issue of concern. In their investigation of Chinese credit systems, Peng et al. (2010) discovered that rural financial institutions, such as rural credit cooperatives, exhibited a more pronounced correlation with the mitigation of regional output disparities in comparison to large, centralized state-owned banks. This revelation carries consequential implications for India's SHG framework, wherein decentralized institutions may assume a more precise and impactful role within underdeveloped regions.

Al-Azzam (2023) broadened the discourse to an international scope and established that microfinance exhibits a statistically significant negative correlation with income inequality across 97 developing nations. In contrast to traditional financial systems, microfinance institutions were more reliably associated with equitable financial outcomes. Mukherjee and Karmakar (2019) similarly noted that, while microfinance initiatives in South Asia succeeded in diminishing inequality, they did not inherently foster economic growth, thereby revealing a trade-off between equity and expansion.

Regarding methodological considerations, non-parametric tools have garnered increased attention within microfinance research. Shair et al. (2024) employed Principal Component Analysis to formulate social performance indices for microfinance institutions in Pakistan, thereby highlighting the heterogeneity and social intricacies of microfinance outcomes. Despite the underutilization of the Kruskal-Wallis test in the existing literature, it presents a robust alternative to parametric tests when data distributions contravene normality assumptions—an occurrence that is prevalent in field-based microfinance datasets. Its integration into this analysis fortifies the analytical credibility of region-specific comparisons of SHG metrics.

Despite the voluminous literature surrounding SHGs and microfinance, several salient research gaps remain inadequately addressed, particularly in relation to regional performance disparities and methodological frameworks for evaluating SHG efficacy across India. While numerous studies underscore the transformative potential of SHGs

in the spheres of women's empowerment, financial inclusion, and poverty alleviation, there exists a conspicuous dearth of research that systematically investigates region-specific disparities in SHG performance employing comprehensive national-level secondary data. Most extant works provide either localized case studies or aggregated national trends, thereby neglecting the intricate variations across India's diverse regional landscape.

Moreover, the utilization of non-parametric statistical methodologies—such as the Kruskal-Wallis H test and Dunn's post-hoc analysis—has been significantly underexploited within the domain of Self-Help Group (SHG) research. These methodologies are particularly instrumental when addressing skewed or non-normally distributed datasets, a prevalent characteristic of datasets within development finance. By overlooking these robust analytical tools, preceding research endeavors may have overlooked crucial insights pertaining to inter-regional statistical discrepancies in essential SHG performance metrics, including savings, loan disbursements, and non-performing assets.

Another critical yet insufficiently examined domain pertains to the analysis of regional trends regarding non-performing assets (NPAs). Despite the acknowledgment of elevated NPAs as a pressing challenge, a limited number of studies have conducted a comparative analysis of loan default trends across different regions, particularly in relation to institutional frameworks or socio-economic conditions. Furthermore, although SHGs play a direct role in advancing several Sustainable Development Goals (SDGs), especially those pertaining to gender equality and economic empowerment, extant literature has not systematically aligned SHG performance with these global objectives. (Pattnaik & Hassan, 2024)

Finally, alternative microfinance frameworks, such as interest-free systems, have garnered minimal scholarly attention in the context of Indian SHG literature, particularly regarding their long-term outreach, sustainability, and institutional viability (Ameer, 2014). Addressing these deficiencies could substantially augment policy development and execution aimed at promoting equitable SHG growth throughout India.

3. Data and Methodology

This research utilizes secondary data derived from the annual reports on the Status of Microfinance in India, published by the National Bank for Agriculture and Rural Development (NABARD), covering the period from 2010 to 2022. These extensive reports represent the most credible and consistent repository of data regarding the

performance of Self-Help Groups (SHGs) within the Indian context. The data were meticulously categorized into six distinct geographic regions—Northern, Northeastern, Eastern, Central, Western, and Southern India—to facilitate a comparative analysis at the regional level. Such classification affords a more nuanced comprehension of regional disparities and structural variations inherent in SHG operations across diverse socio-economic and institutional frameworks.

The study emphasizes five principal indicators that are frequently employed to evaluate the financial and operational viability of SHGs: the number of SHGs, the aggregate amount of savings mobilized, the volume of bank loans disbursed, the outstanding loan balances, and the ratio of Non-Performing Assets (NPAs). These variables collectively encapsulate the degree of SHG penetration, financial engagement, accessibility to credit, and associated credit risks, thereby providing a comprehensive perspective on SHG performance.

To analyze the long-term trends in SHG operations, the Compound Annual Growth Rate (CAGR) was calculated for each variable throughout the 12-year duration. Furthermore, descriptive statistical measures—including the mean, standard deviation (SD), and coefficient of variation (CV)—were utilized to scrutinize the central tendency, dispersion, and relative variability of SHG indicators across various regions.

Considering the non-normal distribution of the dataset, the Kruskal-Wallis H test, which serves as a non-parametric alternative to ANOVA, was employed to ascertain whether statistically significant differences exist among the six regions. To further elucidate specific inter-regional disparities, Dunn's post-hoc test was executed for pairwise comparisons. This rigorous analytical framework guarantees that the findings are both statistically robust and indicative of regional heterogeneity in SHG performance across India.

4. Empirical Findings and Analysis

4.1. Compound Annual Growth Rate (CAGR) of SHG Metrics by Region (2010–2022)

The developmental trajectories of SHGs across the Northern, Northeastern, Eastern, Central, Western, and Southern regions of India are elucidated in the region-specific examination, which delineates the distinct contributions of each geographic area to the comprehensive proliferation of SHGs, as measured by savings accumulation, loan disbursement volumes, outstanding loan balances, and NPAs.

Table 1: CAGR of SHG Metrics by Region in India (2010–2022, in %)

<i>Region</i>	<i>No. of SHGs</i>	<i>Amount of Savings</i>	<i>Bank Loan Disbursed</i>	<i>Loan Outstanding</i>	<i>NPAs</i>
Northern	5	16	10	5	9
Northeastern	6	19	16	11	14
Eastern	6	21	26	19	17
Central	5	15	11	3	8
Western	5	12	16	11	13
Southern	2	17	16	14	12
India	4	17	17	14	12

Source: NABARD Microfinance Reports (2010–2022)

Note: Values computed by the authors.

Table 1 delineates the Compound Annual Growth Rate (CAGR) expressed as a percentage for an array of pivotal metrics pertinent to Self-Help Groups (SHGs) across diverse regions of India during a twelve-year interval, spanning from 2010 to 2022. The assessed metrics encompass the quantity of SHGs, the magnitude of savings, the total bank loans disbursed, the outstanding bank loans, and the Non-Performing Assets (NPA). The regions under examination include Northern, Northeastern, Eastern, Central, Western, and Southern.

The CAGR analysis of SHG metrics from 2010 to 2022 throughout India unveils distinct regional trends, each of which epitomizes the idiosyncratic economic dynamics of Self-Help Groups in various locales of the nation. The Eastern region emerges as a prominent area of activity, characterized by a swift escalation in both outstanding loans and loan disbursements. Nonetheless, this rapid expansion of financial outreach has been paralleled by a rise in NPAs, indicating that, despite the proliferation of SHGs in this region, they may concurrently be facing challenges in maintaining their financial stability and adherence to loan repayment protocols.

Divergent trends are discernible in the Southern region. In spite of a modest increment in the number of SHGs, the enhanced financial performance in terms of savings and loans compensates for this shortfall. This suggests a more gradual yet stable advancement, wherein the focus may be on the reinforcement of existing groups rather than their rapid proliferation. Although some challenges with NPAs are evident, the financial institutions in this region seem to have established a reliable support framework.

The Northeastern region presents a particularly intriguing case, as it demonstrates a substantial surge in savings growth, which implies a heightened level of financial engagement among the local populace. However, the uptick in NPAs raises concerns in this region, as it signifies the potential financial pressures that SHGs may encounter as

they strive to expand. It seems that this region is successfully balancing the management of loan risks with the expansion of its financial foundation.

In juxtaposition, the Central and Northern regions have demonstrated a more restrained pattern of growth across various metrics, thereby indicating a more measured and potentially prudent approach to the SHG movement. These regions have sustained NPAs at levels that are relatively manageable, which implies an enhancement in financial stability. Nonetheless, they have not encountered the rapid expansion that has been documented in other segments of the nation.

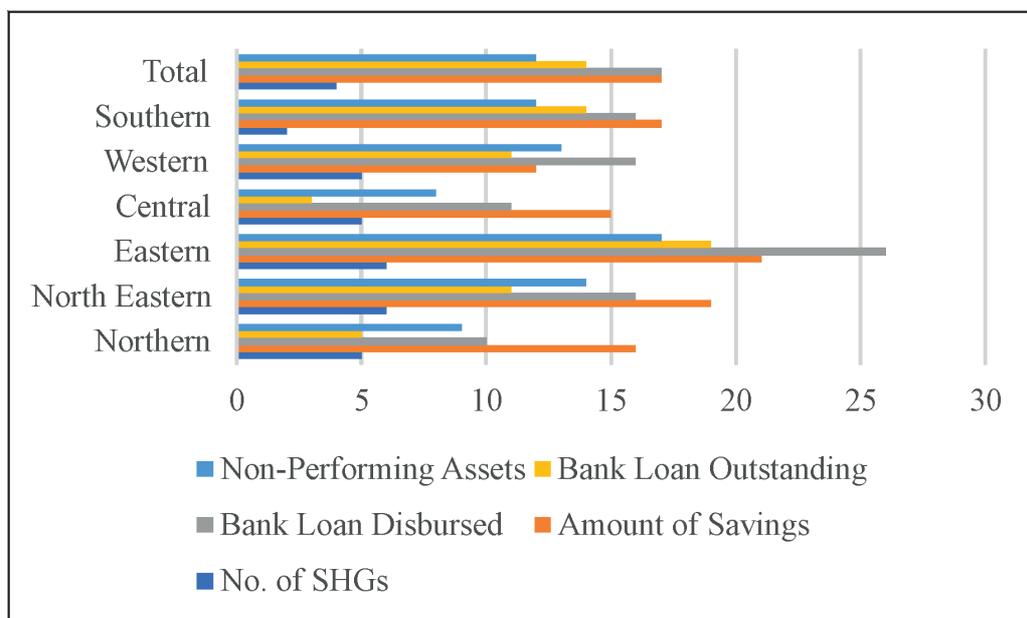
Ultimately, the Western region portrays a diminished rate of savings growth; however, it remains comparable to other regions with respect to loan disbursements. This observation implies that the financial sector is actively facilitating support for SHG members through lending mechanisms, notwithstanding their relatively less aggressive savings behavior. Still, the rise in NPAs signifies that the management of these loans may engender complications.

The escalating apprehension regarding NPAs is a prevalent concern across all regions, as both savings and loan activities have been on the rise. This underscores the imperative for enhanced financial management and risk mitigation strategies, as SHGs progress and expand. The socio-economic context and the degree of institutional support afforded to each region are encapsulated in the distinctive amalgamation of growth dynamics.

A multitude of factors, encompassing the extent of institutional support, prevailing economic conditions, and levels of financial literacy, may account for the disparate outcomes in SHG growth across various regions. Regions such as the Eastern and Southern have witnessed swift advancements in savings growth and loan disbursement, attributable to vigorous government and NGO support. However, the surge in NPAs within the Eastern region signifies the challenges associated with loan repayment, which are intensified by economic vulnerability and agricultural dependency. The well-established SHG ecosystem in the Southern region, bolstered by financial literacy and training, accounts for its more manageable NPAs and consistent growth trajectory. Geographic isolation and limited market access in the Northeast impede the effective utilization of loans, despite significant savings growth, resulting in heightened NPAs. Loan disbursement in the Western region is stimulated by urbanization and industrial development; however, the complexity of financial risk management is exacerbated by the sluggish growth of savings and the rising incidence of NPAs. Conversely, the Central and Northern regions exemplify conservative development, as evidenced by their lower NPAs, which are likely attributable to their diminished reliance on more

precarious economic sectors and their prudent lending practices. Singh, D., & Singh, A. K. (2024) findings also reveal analogous trends in NPAs.

Figure 1: CAGR of SHG Metrics by Region (2010–2022)



Source: NABARD Microfinance Reports (2010–2022)

Note: Values computed by the authors.

The figure further elucidates the CAGR for an array of metrics pertinent to SHGs across diverse regions of India, underscoring the considerable regional disparities. The Eastern region demonstrates the most vigorous growth in bank loans both disbursed and outstanding; however, it concurrently leads in NPAs, implying the existence of potential repayment challenges and heightened financial activity. The Northern region displays moderate growth in financial metrics accompanied by significantly lower NPAs, reflecting enhanced credit risk management practices, while the Southern region excels in the augmentation of savings. Conversely, the Northeastern region registers the most minimal growth in financial activities coupled with the highest NPAs, suggesting substantial barriers to achieving financial sustainability. Overall, the illustration delineates the distinctive financial behaviours and impediments faced by SHGs across various regions of India. Farooq and Akhtar (2022) corroborated these findings in their regional analysis of SHGs within the Indian context.

4.2. Descriptive Statistics of SHG Indicators by Region

Table 2 presents a comprehensive set of descriptive statistics (mean, standard deviation, and coefficient of variation) pertaining to SHG indicators across various regions. These statistical measures facilitate the evaluation of central tendencies and the variability inherent in SHG performance.

Table 2: Descriptive Statistics of SHGs by Region (2010–2022)

Region	Mean SHGs	CV (%)	Mean Savings	CV (%)	Mean Loan Disbursed	CV (%)	Mean Loan Outstanding	CV (%)	Mean NPAs	CV (%)
Northern	468,855	23	64,954	90	57,943	48	116,015	21	16,428	31
Northeastern	452,405	28	34,964	88	45,802	102	101,985	46	16,035	59
Eastern	2,102,825	32	430,714	86	808,696	98	1,280,169	80	75,490	41
Central	939,163	25	120,912	66	93,010	48	253,389	14	48,934	22
Western	1,177,026	23	159,980	62	162,544	96	229,007	41	59,207	215
Southern	3,648,489	10	1,074,596	62	3,164,916	53	5,062,956	49	203,287	34

Source: NABARD Microfinance Reports (2010–2022)

Note: Values computed by the authors.

The descriptive statistics pertaining to Self-Help Groups (SHGs) across various regions of India from 2010 to 2022 reveal pronounced regional disparities. In terms of the quantity of SHGs, the volume of savings, and the amount of bank loans disbursed, the Southern region consistently surpasses its counterparts, thereby demonstrating both enhanced stability and elevated values over the observed timeframe. Conversely, the Northern and Northeastern regions display lower averages across all metrics along with heightened variability, indicating that the performance of SHGs in these areas is markedly inconsistent and susceptible to fluctuations.

The Southern region maintains a preeminent position regarding savings, whereas the Northeastern and Northern regions manifest greater volatility and diminished savings. Furthermore, the Southern region is substantially ahead concerning the disbursement of bank loans, while the Eastern region showcases a relatively higher degree of variability. This trend is similarly observable in the outstanding loan amounts, with the Southern region warranting particular attention, whereas regions such as the Eastern and Northeastern exhibit a more pronounced degree of unpredictability.

Another salient area of examination pertains to Non-Performing Assets (NPAs). The average NPA values within the Southern region are the most elevated, yet they maintain a relative stability in comparison to the Western region, where the data reveals significant fluctuations. Overall, the Southern region exemplifies a more consistent and robust performance of SHGs across all indicators, whereas the Northern and

Northeastern regions are trailing, characterized by lower averages and heightened irregularity in key financial metrics.

The regional disparities in the efficacy of SHGs can be ascribed to a multitude of institutional and socio-economic factors. The preeminence of the Southern region can be attributed to its early adoption of the SHG model, the establishment of robust microfinance networks, and the presence of stronger institutional support, which encompasses the involvement of non-governmental organizations (NGOs) and government initiatives. Moreover, the stability and growth of SHGs in this region are influenced by enhanced access to financial services, the broadening of economic opportunities, and elevated literacy rates. In stark contrast, the sustained growth of SHGs in regions such as the Northeastern and Northern parts of India is hampered by challenges including socio-political instability, restricted access to credit, and a compromised financial infrastructure. Additionally, these regions exhibit increased variability in reserves, loan disbursement, and non-performing assets, which can be attributed to their geographical isolation and diminished economic development. The effectiveness of SHGs across regions is also significantly shaped by cultural dynamics and differing levels of governmental support.

4.3. Kruskal-Wallis H Test: Regional Comparison of SHG Performance

To empirically assess the significance of inter-regional disparities, the Kruskal-Wallis H test was performed for each respective variable.

Table 3: Kruskal-Wallis H Test Results (Region-wise)

<i>Variable</i>	<i>Chi-Square</i>	<i>df</i>	<i>p-value</i>	<i>Significance</i>
No. of SHGs	64.949	5	<0.001	Significant
Amount of Savings	54.19	5	<0.001	Significant
Bank Loan Disbursed	56.85	5	<0.001	Significant
Bank Loan Outstanding	63.43	5	<0.001	Significant
Non-Performing Assets	52.64	5	<0.001	Significant

Source: Authors' computation based on NABARD data

The findings indicate notable disparities across all regions concerning each metric SHG performance. This substantiates the assertion that SHG activities exhibit heterogeneity throughout the Indian subcontinent and are profoundly shaped by region-specific determinants including financial infrastructure, institutional capacity, and economic development.

4.4. *Dunn's Post-Hoc Test: Pairwise Regional Comparisons*

To ascertain the specific regions that exhibited statistically significant differences, Dunn's test was employed in a post hoc analysis. The notable significant comparisons are delineated below:

Table 4: Dunn's Test Highlights

<i>Variables</i>	<i>Regions Compared</i>	<i>Z-Value</i>	<i>Adjusted P-Value</i>
No. of SHGs	Central vs Southern	-3.89162	0.000*
	Eastern vs N. Eastern	4.935235	0.000*
	Eastern vs Northern	4.740166	0.000*
	N. Eastern vs Southern	-6.3885	0.000*
	N. Eastern vs Western	-3.42345	0.000*
	Northern vs Southern	-6.19343	0.000*
	Northern vs Western	-3.22838	0.000*
Amount of Savings	Southern vs Western	2.965042	0.000*
	Central vs Southern	-3.71606	0.000*
	Eastern vs N. Eastern	-4.81819	0.000*
	Eastern vs Northern	-3.84285	0.000*
	N. Eastern vs Southern	-6.22269	0.000*
	N. Eastern vs Western	-3.2674	0.000*
	Northern vs Southern	-5.24734	0.000*
Bank Loan Disbursed	Southern vs Western	2.955288	0.000*
	Central vs Southern	-4.19397	0.000*
	Eastern vs N. Eastern	-4.73041	0.000*
	Eastern vs Northern	-3.98915	0.000*
	N. Eastern vs Southern	-6.24219	0.000*
	N. Eastern vs Western	-3.2674	0.000*
	Northern vs Southern	-5.50093	0.000*
Bank Loan Outstanding	Southern vs Western	2.974795	0.000*
	Central vs N. Eastern	3.286905	0.000*
	Eastern vs N. Eastern	5.247344	0.000*
	Eastern vs Northern	4.506084	0.000*
	N. Eastern vs Southern	-6.52504	0.000*
	Northern vs Southern	-5.78378	0.000*
	Southern vs Western	3.833097	0.000*

<i>Variables</i>	<i>Regions Compared</i>	<i>Z-Value</i>	<i>Adjusted P-Value</i>
NPA	Central vs N. Eastern	3.179617	0.000*
	Central vs Northern	3.033316	0.000*
	Eastern vs N. Eastern	4.018412	0.000*
	Eastern vs Northern	3.872111	0.000*
	N. Eastern vs Southern	-5.74477	0.000*
	Northern vs Southern	-5.59847	0.000*
	Southern vs Western	4.379289	0.000*

Source: Authors' computation based on NABARD data

Table 4 encapsulates the outcomes of the Dunn post-hoc analysis, accentuating the statistically significant regional comparisons characterized by notable p-values. The findings derived from the Dunn post-hoc test elucidate considerable regional variations across multiple variables, including the quantity of Self-Help Groups (SHGs), the total savings accrued, the volume of bank loans disbursed, and the Non-Performing Assets (NPA). Marked regional discrepancies in the allocation of SHGs are apparent when contrasting regions such as Central with Southern, Eastern with North Eastern, and Northern with Southern. In terms of savings accumulation, regions such as Central versus Southern and North Eastern versus Southern display significant divergences, suggesting that savings behavior exhibits considerable variability across these areas. Prominent regional inequalities are observable in the allocation of bank loans, particularly when comparing Central with Southern, Eastern with North Eastern, and Northern with Southern. These disparities highlight the differing levels of loan accessibility prevalent across various regions. The substantial differences observed in the context of bank loans outstanding, particularly between regions such as Central and Northeastern, Eastern and North Eastern, and Northern and Southern, suggest divergent loan management practices. Finally, the analysis of NPA uncovers significant variations between regions such as Central and North Eastern, Eastern and Northern, and Southern and Western, underscoring regional discrepancies in financial risk and asset quality. Overall, these findings suggest that regional context plays a crucial role in shaping SHG-related outcomes, with regions such as Southern and Eastern demonstrating pronounced disparities compared to others.

The results of the Dunn post-hoc test delineate significant regional disparities that may be attributed to an array of socio-economic, cultural, and institutional factors influencing the efficacy and operational dynamics of SHGs. The economic disparities among regions could serve as a potential elucidation for these observed variations. For example, regions such as the Southern and Northern areas may benefit

from enhanced market accessibility, superior financial infrastructure, and a more advanced infrastructural development, which can contribute to a greater number of SHGs, elevated savings levels, and improved access to loans. Conversely, economically disadvantaged regions may encounter challenges such as substandard infrastructure, limited financial literacy, and constrained banking services. These factors could significantly affect the operational effectiveness of SHGs and lead to disparities in the distribution of both deposits and loans across different regions.

5. Conclusion and Policy Implications

This research investigated the regional disparities in the efficacy of Self-Help Groups (SHGs) across six distinct regions in India over a twelve-year timeframe (2010–2022), utilizing secondary data derived from NABARD. Employing methodologies such as the Compound Annual Growth Rate (CAGR), descriptive statistics, and non-parametric statistical analyses—including the Kruskal-Wallis H test and Dunn’s post-hoc analysis—significant inter-regional discrepancies were revealed in essential SHG metrics, including the quantity of SHGs, savings, loan disbursement, outstanding loans, and non-performing assets (NPAs).

The results indicate that the Southern region exemplifies the most stable and mature SHG ecosystem, characterized by elevated levels of financial engagement and minimal variability in performance indicators. This stability can be ascribed to enduring institutional support, enhanced financial literacy, and a substantial history of NGO participation. Conversely, the Eastern region, while exhibiting the highest growth rates in financial metrics, also documented elevated NPAs and variability, indicative of challenges related to credit discipline and repayment frameworks. The Central and Northern regions demonstrated a more conservative growth trajectory, which may reflect inherent structural limitations within banking infrastructure and outreach methodologies. The Northeastern region, despite achieving moderate progress, faced difficulties associated with volatility and inconsistent credit outcomes, which may be attributed to geographic and socio-political impediments.

Policy Implications

Considering the empirical evidence, a uniform approach to the promotion of SHGs is improbable to yield effective outcomes. Rather, the subsequent region-specific policy interventions are advocated:

Enhancing the institutional framework in areas demonstrating suboptimal performance (e.g., Northern, Central, and Northeastern India) by improving

accessibility to financial services and capacity-building programs through the promotion of digital inclusion. Executing specialized credit supervision and risk mitigation tactics in rapidly developing yet high-risk locales such as Eastern India to reduce NPAs and improve repayment patterns. Leveraging the knowledge and best practices of Non-Governmental Organizations (NGOs) from Southern India for adaptation and replication in less efficient areas, with requisite local modifications. Promoting financial literacy and the establishment of social capital in regions marked by insufficient credit behaviours or restricted outreach initiatives. Incorporating region-specific performance indicators for SHGs into state-level developmental strategies, thus ensuring greater alignment with the SDGs, particularly those related to gender equality, financial inclusion, and poverty alleviation.

Future research endeavours should prioritize the direct mapping of SHG impacts to the SDGs, investigate alternative microfinance frameworks such as interest-free lending, and utilize longitudinal data to evaluate the sustainability of interventions led by SHGs.

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