



How Do the Socio-economic Characteristics of Individual Members Influence the Business Effectiveness and Performance of Self-help Groups with Concerning Sustainable Development Goals: An SEM Approach

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ABSTRACT

This study investigates how the socio-economic characteristics of individual members influence the business effectiveness and performance of Self-Help Groups (SHGs) in the context of sustainable development goals, with a focus on the cities of Bhopal, Indore, Gwalior, and Jabalpur in Madhya Pradesh. The research is underpinned by the sustainable development goals framework, emphasizing the role of social capital and economic empowerment in the success of SHGs. Data were gathered from 384 SHG members using a standardized questionnaire. Structural Equation Modeling (SEM) was employed through SmartPLS to analyze the impact of various socio-economic factors, including income level, social capital, educational attainment, household size, and age of the respondents on SHG performance. The analysis reveals that household size and age do not significantly impact SHG performance. However, income level, social capital, and educational attainment are significant contributors to the effectiveness and performance of SHGs. The findings underscore the importance of these variables in achieving the sustainable development goals through SHG initiatives. The study provides actionable insights for policymakers and SHG organizers, suggesting that targeted interventions should focus on enhancing income levels, social capital, and education among SHG members to improve group performance and support sustainable development. This research adds to the literature by offering a region-specific analysis of the socio-economic factors influencing SHG performance, with empirical evidence from key cities in Madhya Pradesh, contributing to the broader discourse on sustainable development.

Keywords: SHGs, Socioeconomic, Business Performance, SDGs

JEL Classifications: D71, Q01, C38, L31, R20, O35

1. INTRODUCTION

Self-help groups (SHGs) have emerged as a pivotal element in poverty alleviation strategies in India, functioning as grassroots organizations designed to catalyze collective action among marginalized communities (NABARD, 2020). These groups have been lauded for their ability to enhance economic opportunities and social outcomes through improved access to financial services, fostering community solidarity, and supporting members in

entrepreneurial ventures (NABARD, 2020). Integrating SHGs into national poverty alleviation programs, such as the National Rural Employment Guarantee Act (NREGA), further underscores their critical role in policy frameworks aimed at reducing poverty and promoting sustainable development (Sinha, 2018).

Despite their notable successes, the effectiveness of SHGs is not uniformly positive across different contexts. While numerous studies highlight benefits such as increased savings

and higher income levels among members (Morduch and Haley, 2002), the complexities surrounding SHG performance necessitate a deeper exploration of how individual socio-economic characteristics influence business effectiveness and performance. Batliwala (2014) emphasizes that the success of SHGs in alleviating poverty is often contingent upon the quality of group management and the members' ability to effectively engage with external institutions. This observation suggests that while SHGs hold significant potential as tools for poverty reduction, their impact is variable and influenced by various factors beyond mere participation.

A growing body of research underscores the importance of SHGs in fostering financial inclusion by providing credit and other financial services to previously underserved populations (Duggan, 2015a). SHGs have been instrumental in mobilizing savings and facilitating microloans, which support small-scale entrepreneurship and income generation (Reddy, 2016a). However, critiques such as those by Singh and Sriram (2017) argue that an exclusive focus on financial services may overlook the broader socio-economic barriers that SHG members face. For instance, challenges such as inadequate market linkages, limited entrepreneurial skills, and poor infrastructure can significantly impede the effectiveness of SHGs in achieving their intended outcomes.

Moreover, while SHGs have been commended for promoting gender equity and empowering women (Kabeer, 2012), evidence suggests that the actual empowerment experienced by women may be constrained by persistent patriarchal norms and societal barriers (Banu and Sundaram, 2019). Although SHGs offer a platform for women to participate in economic activities and decision-making processes, these efforts often encounter limitations due to entrenched social structures that restrict women's full economic and social empowerment. This limitation can undermine the overall effectiveness of SHGs in reducing poverty and achieving gender equality.

The sustainability and scalability of SHGs present additional challenges. Kothari and Sinha (2020) highlight that while SHGs can produce positive outcomes on a smaller scale, scaling these benefits to a larger population involves significant hurdles. Variability in group performance and dependency on external funding and support systems raise concerns about the long-term viability of SHGs as a stand-alone strategy for poverty alleviation (Ghosh, 2018). The effectiveness of SHGs may diminish when external support is withdrawn or when groups struggle to sustain their operations independently.

Furthermore, the evaluation of SHG impact is often limited to quantitative metrics, such as income levels and savings, with less emphasis on qualitative aspects like social cohesion and community development (Khera, 2021). Although SHGs contribute to immediate economic benefits, their role in fostering broader social change and enhancing community well-being requires more nuanced analysis. A comprehensive assessment of SHGs' effectiveness must consider both economic and social dimensions to provide a balanced understanding of their impact.

The primary objective of this study is to investigate the influence of individual socioeconomic characteristics on the business effectiveness and performance of self-help groups (SHGs) using a Structural Equation Modeling (SEM) approach. By examining various socio-economic factors—such as educational background, income levels, employment status, and demographic variables—this research aims to elucidate how these characteristics impact the operational success and economic outcomes of SHGs. Specifically, the study seeks to identify and quantify the relationships between individual member attributes and key performance indicators of SHGs, such as financial stability, business growth, and sustainability. Through a comprehensive SEM framework, the research will assess how these socio-economic characteristics contribute to or hinder the overall effectiveness of SHGs, thereby providing insights into how tailored interventions can enhance group performance and achieve better poverty alleviation outcomes. This objective is driven by the need to understand the dynamics at the individual level that underpin the success of collective economic activities and to inform strategies that can improve the effectiveness and impact of SHGs in diverse socio-economic contexts.

2. LITERATURE REVIEW

The role of Self-Help Groups (SHGs) in promoting economic development and poverty alleviation has been extensively documented, yet less emphasis has been placed on how the socio-economic characteristics of individual members influence SHG business effectiveness and performance. This literature review synthesizes recent research on these socio-economic factors and their impact on SHG outcomes, utilizing Structural Equation Modeling (SEM) to offer a comprehensive understanding of these dynamics, with a particular focus on sustainable development goals.

2.1. Socio-economic Characteristics and SHG Performance

SHGs are designed to empower marginalized communities by enhancing access to financial resources, fostering collective action, and building social capital (NABARD, 2020). Effective SHGs demonstrate their success through financial stability, operational efficiency, and member empowerment. Key socio-economic characteristics of members—such as education, income level, and employment status—play a crucial role in shaping these outcomes.

2.2. Education and Financial Management

Education is a fundamental socio-economic factor affecting SHG performance. Members with higher educational attainment are often better equipped with the skills needed for effective group management and financial decision-making. Research by Morduch and Haley (2002) and Duggan (2015b) shows that educated members are more likely to understand and utilize financial services effectively, leading to improved economic outcomes for the group. Reddy (2021) reinforces this by noting that financial literacy among members significantly impacts SHG financial stability and resilience. Education enhances the ability to manage savings and credit, thereby boosting overall group performance.

2.3. Income Levels and Financial Stability

Income levels are directly related to the financial stability of SHGs. Members with higher incomes can contribute more consistently to the group's financial pool, engage actively in savings and credit activities, and invest in more profitable ventures (Reddy, 2016b). Conversely, members with lower incomes may struggle to meet their financial obligations, which can undermine group stability and effectiveness (Singh and Sriram, 2017). The variation in income levels among members thus poses a challenge to maintaining a balanced and effective financial structure within SHGs.

2.4. Employment Status and Group Dynamics

Employment status further influences SHG dynamics. Employed members typically have more stable financial situations and are more likely to engage actively in group activities, contributing to improved operational efficiency (Sharma and Jain, 2023). In contrast, unemployed or underemployed members may face difficulties with regular contributions and commitment, impacting the group's performance and stability (Singh and Sriram, 2023). Employment status affects both the financial and operational aspects of SHGs, making it a critical factor in assessing group effectiveness.

2.5. Socio-economic Diversity and Group Cohesion

Socio-economic diversity within SHGs presents both opportunities and challenges. Kabeer (2012) highlights that diverse socio-economic backgrounds can enrich the group by bringing varied perspectives and skills, which can enhance problem-solving and decision-making capabilities. However, such diversity can also lead to conflicts and disparities in participation, potentially undermining group cohesion and effectiveness (Khera, 2022). Managing this diversity effectively is crucial for ensuring balanced and equitable group functioning.

Despite their potential, SHGs face several challenges that impact their effectiveness and performance. Common issues include limited access to external funding, inadequate infrastructure, and difficulties in scaling operations (Ghosh, 2023). Addressing these challenges requires targeted interventions and support from external institutions. Batliwala (2023) emphasizes the need for capacity-building programs to enhance members' skills and knowledge, improving their contribution to the group's success.

Recent trends in SHG research highlight the integration of technology to improve performance. Sharma and Jain (2023) explored how digital platforms and mobile banking services can enhance financial management and expand resource access for SHG members. These technological innovations have the potential to streamline operations, increase financial inclusion, and broaden the reach of SHGs, contributing to their effectiveness.

Future research should continue to explore the interplay between socio-economic characteristics and SHG performance, with a focus on longitudinal studies to assess the long-term impact of SHG interventions. Additionally, examining external factors such as policy support, market access, and institutional linkages will provide a more comprehensive understanding of the factors

influencing SHG effectiveness and their alignment with sustainable development goals.

2.6. The Role of Structural Equation Modeling (SEM)

Structural Equation Modeling (SEM) has emerged as a powerful tool for analyzing the complex relationships between socio-economic characteristics and SHG performance. SEM allows for the modeling of both direct and indirect effects of various factors on group outcomes, offering a comprehensive view of how individual attributes influence collective performance (Hair et al., 2010). In the context of SHGs, SEM can reveal how education, income, and employment status collectively impact business effectiveness, including financial stability, productivity, and growth (Kothari and Sinha, 2020). This methodological approach enables researchers to identify which socio-economic factors are most influential and how they interact to affect SHG performance. To evaluate the impact of each socio-economic factor on the overall performance of Self-Help Groups (SHGs), we can formulate specific hypotheses for each factor:

2.6.1. Income Level

- Hypothesis: "Higher monthly or annual income of SHG members positively influences the financial stability and resource mobilization of the group, leading to improved overall performance of SHGs."

2.6.2. Educational Attainment

- Hypothesis: "Higher educational attainment of SHG members is positively associated with better decision-making, effective management, and higher performance outcomes in SHGs."

2.6.3. Household Size

- Hypothesis: "Smaller household sizes of SHG members are positively correlated with greater individual contributions and focus on SHG activities, enhancing the group's overall performance."

2.6.4. Savings Habits

- Hypothesis: "Frequent and substantial savings by SHG members are positively correlated with greater financial resilience and better performance outcomes for SHGs."

2.6.5. Social Capital

- Hypothesis: "Higher levels of participation in community activities and stronger social networks among SHG members enhance cooperation, trust, and overall group performance."

2.6.6. Age

- Hypothesis: "The age group of SHG members influences the group's performance, with middle-aged members contributing more experience and stability, thus enhancing the overall effectiveness of SHGs."

3. METHODOLOGY

3.1. Study Area

The research was conducted in the rural areas of four major cities in Madhya Pradesh: Bhopal, Jabalpur, Indore, and Gwalior.

These cities were chosen due to their substantial rural populations and the active participation of Self-Help Groups (SHGs) in these regions. The focus was on understanding how the socio-economic characteristics of individual SHG members influence the effectiveness of their business operations, with a particular emphasis on sustainable development.

3.2. Data Collection

To gather the necessary data, a standardized questionnaire was developed. This questionnaire was designed to capture the socio-economic characteristics of SHG members and assess their impact on the business effectiveness of the groups. The questions were formulated based on established measures to ensure consistency and reliability. The questionnaire was distributed to 384 SHG members across the selected rural areas. To accommodate respondents who might have difficulty comprehending or answering the questionnaire, especially due to literacy challenges, supplementary interviews were conducted. These interviews followed a semi-structured format, allowing flexibility in how questions were posed while ensuring that all relevant information was captured.

3.3. Sampling and Response Rate

A total of 384 SHG members were targeted for the survey, using a stratified random sampling method to ensure diverse representation from various socio-economic backgrounds. Out of the 384 distributed questionnaires, 357 were returned. After data cleaning, 350 responses were deemed valid and were used for further analysis. This response rate was considered sufficient to perform the Structural Equation Modeling (SEM) analysis, which requires a robust sample size for accurate results.

3.4. Data Analysis

The data collected from the respondents was first tested for normality to ensure it met the assumptions required for SEM analysis. This step was crucial to ensure the accuracy and reliability of the results. Additionally, the validity of the questionnaire as a research instrument was assessed using factor analysis, which confirmed that the questions effectively measured the intended constructs.

3.5. Analytical Technique

Structural Equation Modeling (SEM) was the primary analytical technique used in this study. SEM is a powerful multivariate statistical analysis technique that is well-suited for examining complex relationships between observed and latent variables. In this study, SEM was employed to model the influence of socio-economic characteristics on the business effectiveness of SHGs, providing insights into both direct and indirect effects within the data.

3.6. Ethical Considerations

All participants were fully informed about the purpose of the study and assured that their participation was voluntary. Confidentiality of the participants' data was strictly maintained, and all responses were anonymized to protect individual privacy. This methodological approach ensured a comprehensive and rigorous examination of how socio-economic characteristics influence the business performance of SHGs in rural Madhya Pradesh,

with important implications for sustainable development in these regions.

4. ANALYSIS AND DISCUSSION

4.1. Data Distribution and Normality

The initial assessment of the dataset revealed that all variables were within acceptable ranges for skewness and kurtosis, which are critical indicators of data normality. The skewness values ranged between -1 and 1, indicating that the data distribution is relatively symmetrical around the mean. This symmetry suggests that there is no significant deviation in the distribution of data points, which is a favorable characteristic for most statistical analyses. Furthermore, the kurtosis values were found to be between 1.5 and 3.5, which indicates that the dataset does not exhibit extreme tail heaviness or lightness. In other words, the data distribution has neither too many outliers nor an unusually flat or peaked distribution. These kurtosis values support the assumption of normality, which is important for the reliability of various statistical techniques used in the study.

4.2. Factor Analysis and Confirmatory Factor Analysis (CFA)

To further analyze the data, exploratory factor analysis (EFA) was conducted, which is a tool often used to identify underlying relationships between measured variables. In this study, the EFA revealed that all factor loadings were above 0.30. A factor loading above this threshold typically indicates that the variables have a meaningful relationship with the underlying factor, providing preliminary evidence for the construct validity of the factors identified. Following the EFA, a Confirmatory Factor Analysis (CFA) was applied to validate the factor structure identified during the EFA. The CFA results indicated that all factor loadings were above 0.50, which is considered a strong indicator of construct validity. Higher factor loadings signify that the observed variables are good indicators of their respective latent constructs. This is crucial for confirming the theoretical model proposed in the study. The factor loadings observed in the CFA further reinforce the robustness of the factor structure, implying that the model is well-fitted to the data. Detailed CFA results, including the specific item loadings, can be found in Table 2. These results underscore the reliability and validity of the measurement model used in this research.

4.3. Key Indicators of SHG Performance

4.3.1. Saving habit

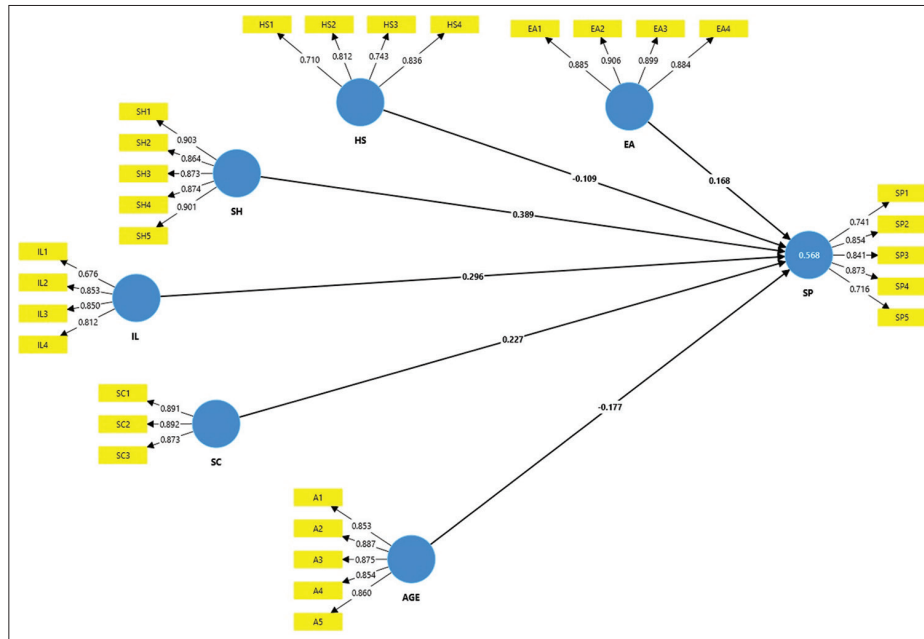
This factor is the most significant, accounting for 38% of the variation in SHG performance. This suggests that members' ability

Table 1: Reliability and AVE value

	Composite reliability	Average variance extracted (AVE)
AGE	0.937	0.750
EA	0.941	0.798
HS	0.858	0.603
IL	0.877	0.641
SC	0.916	0.784
SH	0.946	0.779
SP	0.903	0.652

Source: Smart PLS

Figure 1: PLS Model of study



Source: Smart PLS

and discipline to save regularly is a critical determinant of how well SHGs perform as shown in Figure 1.

4.3.2. Income level

Income level explains 29.6% of the variation in SHG performance. This implies that members with higher or more stable incomes contribute to better SHG outcomes as shown in Figure 1.

4.3.3. Social capital

Social capital accounts for 22.7% of the variation. This indicates that the relationships, trust, and networks within the SHGs are vital for their success as shown in Figure 1.

4.3.4. Educational attainment

Educational attainment explains 16.8% of the variation, highlighting that higher education levels among members positively influence SHG performance as shown in Figure 1.

4.3.5. Negligible influence of household size and age

The variables household size and age do not significantly contribute to the variation in SHG performance. This suggests that these demographic factors are less critical in determining how well SHGs perform compared to the other socioeconomic factors as shown in Figure 1.

4.4. Overall socioeconomic influence

Combined, the socioeconomic aspects (including saving habits, income level, social capital, and educational attainment) are responsible for 56.8% of the variation in SHG performance. This indicates that more than half of the performance outcomes can be explained by these factors, underlining their collective importance.

4.5. Reliability and validity

The composite reliability of all variables is close to 0.9, which indicates a high level of internal consistency in the measurement

Table 2: Factors loading

Item code	AGE	EA	HS	IL	SC	SH	SP
A1	0.853						
A2	0.887						
A3	0.875						
A4	0.854						
A5	0.860						
EA1		0.885					
EA2		0.906					
EA3		0.899					
EA4		0.884					
HS1			0.710				
HS2			0.812				
HS3			0.743				
HS4			0.836				
IL1				0.676			
IL2				0.853			
IL3				0.850			
IL4				0.812			
SC1					0.891		
SC2					0.892		
SC3					0.873		
SH1						0.903	
SH2						0.864	
SH3						0.873	
SH4						0.874	
SH5						0.901	
SP1							0.741
SP2							0.854
SP3							0.841
SP4							0.873
SP5							0.716

Source: Smart PLS

model. The Average Variance Extracted (AVE) values range from 0.652 to 0.779, suggesting that the model captures a substantial amount of variance from the indicators, further validating the robustness of the measurement model. The analysis underscores that while certain demographic factors like household size and age may not significantly impact SHG performance, socioeconomic factors such as saving habits, income level, social capital,

Table 3: Model fit

	Saturated model	Estimated model
SRMR	0.072	0.072
d_ULS	2.387	2.387
d_G	0.747	0.747
Chi-square	1536.703	1536.703
NFI	0.813	0.813

Source: Smart PLS

and educational attainment play a crucial role. These factors collectively explain a significant portion of the variation in SHG performance, highlighting areas where interventions can be targeted to improve outcomes for SHGs. The high reliability and validity measures confirm the robustness of the findings as shown in Table 1. All factor loadings is shown in table 2 and all are strong high factor load with more than “. 50. Considering the universe of available goodness-of-fit measures, an SRMR =0.072 suggests that the model performs adequately with empirical data, given that an SRMR value less than 0.08 indicates acceptability as mentioned in table 3. Meanwhile, the d_ULS value of 2.387 represents a fair amount of disagreement between the model-implied correlation matrix and empirical correlation matrix; in terms of sensitivity analysis against literature benchmarks, it is plausible but not egregiously poor. The low d_G value 0.747 is similarly indicative of a good fit in terms of geodesic distance. The chi-square value, as can be expected in large samples is good and its interpretation should always consider the sample size after df.

5. CONCLUSION

This research focused on the performance of Self-Help Groups (SHGs) across four major cities in Madhya Pradesh-Bhopal, Indore, Gwalior, and Jabalpur. The study sought to identify the key socioeconomic factors that influence the success of SHGs in these urban settings. The findings provide significant insights into the dynamics that drive SHG performance and have broader implications for enhancing the effectiveness of these groups in Madhya Pradesh. The analysis revealed that certain socioeconomic factors play a crucial role in determining SHG performance, while others do not have a significant impact. Specifically, the study found that saving habits, income level, social capital, and educational attainment of the respondents are the most significant contributors to SHG performance in these cities. Each of these factors highlights a different dimension of the socioeconomic context that influences the ability of SHGs to function effectively and achieve their goals.

Saving habits emerged as the most influential factor, indicating that the discipline of regular savings among SHG members is vital for the sustainability and success of these groups. The importance of saving habits suggests that financial literacy and the ability to manage personal finances are critical for SHG members. This finding underscores the need for targeted financial education programs within SHGs to improve their performance.

Income level was also a significant factor, accounting for a substantial portion of the variation in SHG performance. This indicates that members with higher or more stable incomes

are better positioned to contribute to the success of SHGs. The role of income underscores the economic dimension of SHG performance, where financial stability among members enhances their ability to save, invest, and participate actively in group activities.

Social capital, which includes the networks, trust, and relationships within SHGs, also significantly contributes to their performance. The importance of social capital highlights the value of strong, cohesive group dynamics and the role of mutual support in achieving SHG goals. This finding suggests that efforts to strengthen the social fabric of SHGs, such as through team-building activities and conflict resolution training, could further enhance their performance.

Educational attainment was another key factor influencing SHG performance. Higher education levels among members contribute to better decision-making, problem-solving, and overall group management. This finding points to the potential benefits of incorporating educational initiatives within SHG frameworks, such as literacy programs or vocational training, to empower members with the skills and knowledge needed to succeed.

In contrast, the study found that household size and age of the respondents did not significantly impact SHG performance. This suggests that in urban settings like Bhopal, Indore, Gwalior, and Jabalpur, demographic factors are less influential compared to other socioeconomic factors.

6. SCOPE FOR FUTURE RESEARCH

While this study provides valuable insights into the factors influencing SHG performance in key urban centers of Madhya Pradesh, it also opens up several avenues for future research:

6.1. Rural Versus Urban Dynamics

Future research could explore the differences in SHG performance factors between rural and urban areas. Understanding these differences could help in designing context-specific strategies to improve SHG outcomes across diverse settings.

6.2. Longitudinal Studies

Conducting longitudinal studies could provide insights into how the factors influencing SHG performance evolve over time. Such studies would help in understanding the long-term impacts of socioeconomic changes on SHG effectiveness.

6.3. Impact of Government Policies

Investigating the effectiveness of government policies aimed at supporting SHGs could provide a deeper understanding of how these initiatives influence SHG performance. Future research could evaluate which policies are most effective in addressing the key factors identified in this study.

6.4. Technological Integration

With the increasing digitalization of financial services, future research could examine the impact of technology adoption on SHG performance. Understanding how digital tools influence

saving habits, income management, and group dynamics could offer new strategies for enhancing SHG success.

6.5. In-depth Analysis of Social Capital

Further exploration of the components of social capital, such as trust, reciprocity, and network strength, could provide a more nuanced understanding of how social relationships impact SHG performance.

By pursuing these research directions, future studies can contribute to a more comprehensive understanding of the dynamics influencing SHG performance and offer practical recommendations for enhancing the success of SHGs in Madhya Pradesh and beyond.

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