

ECONOMIC UPLIFTMENT AND DECISION-MAKING: THE IMPACT OF SELFHELP GROUPS ON WOMEN IN ANDAMAN AND NICOBAR ISLANDS

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Abstract

This study explores the impact of Self Help Groups (SHGs) on women's socio-economic development in the Andaman and Nicobar Islands, a region with unique challenges. It investigates how participation in SHGs influences savings, consumption patterns, income transformation, indebtedness, and decision-making abilities among women across different income groups. Data was collected from 276 SHG members using a proportionate sampling method across three districts: Nicobars, North & Middle Andaman, and South Andaman. The findings reveal that both the Average and Marginal Propensity to Save and Consume increase with rising income levels, reflecting enhanced financial flexibility and evolving priorities. Rostow's stages of growth theory provide a framework for analysing this progression, with SHG members advancing from subsistence-level activities to more developed economic participation. However, challenges remain, particularly in achieving equitable decision-making and access to higher income opportunities. The study highlights the need for tailored financial strategies, such as recurring deposit schemes and sustainable investments in local livelihoods like eco-tourism and fisheries, to harness SHG women's increasing financial autonomy. These interventions have the potential to promote long-term economic empowerment while preserving cultural and environmental heritage, offering a blueprint for sustainable development in the region.

Keywords: Women's Empowerment, Savings Propensity, Consumption Patterns, Sustainable Investments

I. INTRODUCTION

The role of SHGs in promoting women's empowerment and economic development (Srinivasan, 2009) has gained significant attention in recent years. In the context of the Andaman and Nicobar Islands, a geographically isolated region with unique socio-economic challenges, (Choudhury & Kumar, 2017) SHGs hold the potential to bridge gender disparities and promote financial independence (Karmakar, 2008; Kumar & Singh, 2014). Women in these islands often face limited access to resources, education, and employment opportunities, further exacerbated by traditional societal norms that restrict their participation in decision-making processes. The establishment of SHGs has been envisioned as a tool to address these issues by enabling women to pool their resources, engage in income-generating activities, and enhance their socio-economic status (Aneja, 2019; Ghate, 2007; Tripathi & Aggarwal, 2014). Earlier studies have underscored the transformative potential of SHGs in various parts of India. Research highlights that SHG participation has led to increased savings, reduced dependence on informal credit sources, (Puhazhendi & Badatya, 2002; Satish, 2001) and enhanced household incomes. Additionally, SHGs are reported to contribute to women's confidence and decision-making abilities in areas such as family budgeting, education, and health (Kabeer, 2001; Parida & Sinha, 2010).

However, limited literature exists that specifically addresses the unique socio-cultural and economic landscape of the Andaman and Nicobar Islands (Leivang, 2022; Sahu & Das, 2007). While some studies hint at the positive outcomes of SHGs in this region, a comprehensive evaluation of their impact remains unexplored (Chakrabarti & Ravi, 2011; Chakrabarti, 2004; Das, 2012; Jain, 2012; Jha, 2010; Kabeer, 2001; Kannan & Pillai, 2007; Dasgupta, 2001; Bali Swain & Wallentin, 2009; Venkatesh & Natarajan, 2017; Gupta & Aggarwal, 2017). Having understood the problems and fill the existing gaps, the study aims to evaluate the impact of SHG participation on women's income, savings, expenditure, and indebtedness, and assess the role of SHGs in enhancing women's decision-making capabilities in economic, social, and household activities, while identifying the challenges hindering their empowerment. These objectives are designed to address critical gaps in existing research by focusing on the intersection of financial upliftment and decision-making empowerment specific to women in this unique region. Also, the research aims to address the following questions: How does participation in SHGs influence the socio-economic factors, decision-making abilities, and empowerment of women in the Andaman and Nicobar Islands? Despite the growing recognition of SHGs as catalysts for women's empowerment, there remains a significant research gap in understanding their region-specific impacts (Reddy & Manak, 2005; Yadav & Rani, 2016) in the Andaman and Nicobar Islands. Existing studies often generalize findings from mainland

India, overlooking the unique demographic, geographic, and cultural attributes of this archipelago. This research aims to fill this void by providing nuanced insights into how SHGs influence women's lives in this context, thereby contributing to the formulation of targeted policies and interventions that address their specific needs and challenges.

II. METHODS AND MATERIALS

The present study is based on the primary data. To assess the performance and decision-making ability of SHGs in Andaman and Nicobar Islands, the information relating to transformation of SHGs income, expenditure, saving, indebtedness and improvement in decision making abilities information were collected from 276 SHGs women respondents. The sampling framework was designed to select a proportionate sample from three key districts with the highest number of SHG members in the Andaman and Nicobar Islands. These districts include Nicobars, North & Middle Andaman, and South Andaman, with specific blocks identified based on the concentration of SHG members. In the Nicobars district, the Campbell Bay block was chosen, which has 377 SHG members. From this, a proportionate sample of 6.83 percent was calculated based on the total sample size of 276 members. This resulted in a final sample of approximately 19 members from this block. For the North & Middle Andaman district, the Diglipur block, having the highest number of SHG members at 3,173, was selected. Here, a proportionate sample of 57.5 percent was calculated, which translated to 159 members. This block represented the largest segment of the overall sample. In South Andaman district, the Ferrargunj block, with 1,968 members, was included. A proportionate sample of 35.67 percent was determined, resulting in 98 members being selected from this block. Altogether, the total population of SHG members across the three blocks was 5,518. Using the proportionate sampling method, the calculated sample size was 276, ensuring fair representation from each block based on the relative number of SHG members. This framework provided a balanced approach to studying the SHG members while maintaining statistical reliability.

The study utilised a straightforward percentage analysis based on frequency counts to examine the data. Additionally, it aimed to evaluate the average and marginal propensity to save and consume among the selected women respondents from Self-Help Groups (SHGs). The APS, MPS, APC and MPC were calculated using the following formulas.

$$\begin{aligned} \text{Average Propensity to Save (APS)} &= \frac{\text{Savings}}{\text{Income}} = \frac{S}{Y} \\ \text{Marginal Propensity to Save (MPS)} &= \frac{\text{Change in Savings}}{\text{Change in Income}} = \frac{\Delta S}{\Delta Y} \\ \text{Average Propensity to Consume (APC)} &= \frac{\text{Consumption}}{\text{Income}} = \frac{C}{Y} \\ \text{Marginal Propensity to Consume (MPC)} &= \frac{\text{Change in Consumption}}{\text{Change in Income}} = \frac{\Delta C}{\Delta Y} \end{aligned}$$

Sampling Framework

District	Blocks with highest SHG Members		Proportionate Sample Calculation	Proportionate sample (in %)	No. of SHGs Members
	Name of the Block	No. of Members			
Nicobars	Campbell Bay	377	$276 \times \frac{6.83}{100}$	18.85	19
North & Middle Andaman	Diglipur	3173	$276 \times \frac{57.5}{100}$	158.70	159
South Andaman	Ferrargunj	1968	$276 \times \frac{35.67}{100}$	98.44	98
Total		5518	Sample Size	275.99	276

Source: National Rural Livelihood Mission (Grampanchayat Level), GoI.

III. RESULTS AND DISCUSSION

Household Roster of Women in Self-Help Groups

Table 1 presented a detailed view of the socio-demographic and economic characteristics of women in SHGs across the districts of the Andaman and Nicobar Islands. The data included indicators such as age, family type, marital status, education level, family size, and income-generating activities, highlighting the profiles of SHG members from the Nicobar Islands, North & Middle Andaman, and South Andaman districts. Women in the age group of 31 to 40 years formed the largest segment of SHG members, accounting for 57.2 percent of the total, with the majority residing in North & Middle Andaman (31.9 percent). Those aged 41 to 50 years constituted 18.8 percent, while women aged 51 years and above made-up 11.6 percent. Interestingly, a small yet significant proportion (12.3 percent) of members were below 30 years, pointing to younger women gradually becoming a part of SHGs (Sundaram, 2012; Swain & Varghese, 2009). This inclusion could reflect a growing awareness of the benefits of SHGs among the younger population. The dominance of nuclear families, representing 71 percent of the total, reflects changing societal structures and preferences for smaller family units in the region. Joint families accounted for 29 percent, suggesting that women from these larger households were less likely to join SHGs. This could be due to shared responsibilities in joint families, which might limit women's need or ability to engage in external income-generating activities. The majority of SHG members were married, comprising 77.2 percent of the total. In contrast, unmarried women constituted only 8.7 percent, likely due to fewer economic responsibilities or opportunities at an earlier life stage. Widowed women (6.9 percent) and separated or detached women (7.2 percent) also formed smaller groups, possibly indicating their involvement in SHGs as a means of financial support and independence.

The educational profile of SHG members revealed a significant concentration of women with a school-level education (68.5 percent). This indicates that basic literacy and school education play a critical role in enabling women to participate in SHG activities. However, the relatively low representation of women with higher education, such as undergraduates (15.6 percent) and postgraduates (6.2 percent), highlights a gap in advanced educational attainment among SHG members. Illiteracy was observed in 5.8 percent of the sample, suggesting that even women with limited educational backgrounds were finding ways to contribute to SHGs, reflecting the inclusive nature of these groups. Family size also influenced SHG participation, with most members coming from households of 3 to 4 members (66.7 percent). This suggests that mid-sized families might offer a balance between economic needs and available time for SHG activities. Smaller families (9.4 percent) and larger families (23.9 percent) were less represented, indicating either fewer economic pressures in smaller households or limited time availability in larger households. The prominence of tailoring, involving 43.1 percent of members, stands out as the most popular income-generating activity. This indicates that tailoring provides an accessible and sustainable livelihood option for many women. Other notable activities included milk production (14.1 percent), reflecting the rural agricultural economy, and sheep or goat rearing (9.8 percent), which suggests livestock as a significant source of income.

The data also shows that activities such as cultivating fruits, flowers, or vegetables (8 percent) and operating tea shops (6.5 percent) or petty shops (6.2 percent) were less common. This may indicate limited market opportunities or resources for women to engage in these ventures. Interestingly, only 4.7 percent of members were involved in hotel or tiffin centres, possibly reflecting limited urbanisation and smaller demand for such services in the region. North & Middle Andaman emerged as the district with the highest representation in most categories, highlighting its significant role in SHG activities. South Andaman and Nicobar Islands followed, contributing to the diversity and economic engagement of women in SHGs across the region. Besides, the nuances also reveal intersections between education and income-generating activities. For instance, members engaged in more skill-based activities such as tailoring or running businesses might have received basic education. However, the low representation of women in advanced educational categories could limit their ability to explore diverse or innovative economic ventures (Thomas & Raj, 2014; Titus, 2004).

Table 1: Household Roster of Women in Self-Help Groups

Indicators	Cluster / Grouping	Districts of Andaman & Nicobar Islands			Total
		Nicobar Islands	North & Middle Andaman	South Andaman	
Age	Below 30	1.1	8.3	2.9	12.3
	31 to 40	2.2	31.9	23.2	57.2
	41 to 50	2.5	11.2	5.1	18.8
	51 and above	1.1	6.2	4.3	11.6
Types of family	Joint	2.2	15.9	10.9	29
	Nuclear	4.7	41.7	24.6	71
	Unmarried	1.1	5.1	2.5	8.7

Marital Status	Married	4.7	44.2	28.3	77.2
	Widower	0.7	4.7	1.4	6.9
	Separated/ Detached	0.4	3.6	3.3	7.2
Level of education	Illiterate	0.4	2.5	2.9	5.8
	School level	4.3	39.9	24.3	68.5
	Under Graduate	1.4	9.1	5.1	15.6
	Post Graduate	0.7	4	1.4	6.2
	Others	0	2.2	1.8	4
Family size	1 and 2	0.7	7.2	1.4	9.4
	3 and 4	4.7	38.8	23.2	66.7
	Above 5	1.4	11.6	10.9	23.9
Income Generation Activity	Sheep/ Goat	1.1	8	0.7	9.8
	Milk Producing Animals	1.1	6.2	6.9	14.1
	Fruits/ Flowers/ Vegetables	1.4	5.1	1.4	8
	Tailoring	1.1	24.6	17.4	43.1
	Petty Shop	0.7	1.8	3.6	6.2
	Tea Shop	0.7	4.3	1.4	6.5
	Hotel/ Tiffin Center	0	1.4	3.3	4.7
	Other activity	0.7	6.2	0.7	7.6

Source: Estimated from field survey data

Income Transformation of SHGs Women

Table 2 provided a wealth of information about the socio-economic transformation experienced by women in SHGs across the districts of the Andaman and Nicobar Islands. It highlighted the changes in income levels from agricultural activities, livestock and poultry, and non-farm earnings before and after joining SHGs. Beyond district-wise comparisons, several nuanced patterns emerged, shedding light on how SHG participation influenced economic mobility.

A clear shift was observed in agricultural income across all districts after women joined SHGs. Before joining, a significant proportion of members earned ₹50,000 or less annually from agriculture—3.6 percent in Nicobar Islands, 28.3 percent in North & Middle Andaman, and 18.1 percent in South Andaman. After joining, this proportion reduced notably in all districts, particularly in North & Middle Andaman (from 28.3 percent to 9.4 percent). The share of women earning between ₹1,00,001 and ₹1,50,000 also increased, especially in North & Middle Andaman, where it rose from 10.9 percent to 17.4 percent. Higher income brackets, such as ₹1,50,001 to ₹2,00,000, showed a marginal increase, with North & Middle Andaman again leading the trend. This progression suggested that SHG involvement enabled members to scale up their agricultural activities, possibly through better access to resources and markets. Women involved in livestock, poultry, forestry, and fishing activities also experienced notable income shifts. Before SHG participation, the majority earned ₹50,000 or less—1.4 percent in Nicobar Islands, 36.6 percent in North & Middle Andaman, and 19.6 percent in South Andaman. This proportion dropped after joining SHGs, especially in North & Middle Andaman, where it fell to 20.3 percent.

At higher income levels, women earning ₹1,00,001 to ₹1,50,000 saw a substantial increase in representation, particularly in North & Middle Andaman, where the percentage rose from 7.2 percent to 17.8 percent. Similarly, women earning ₹2,00,001 or more showed growth, albeit limited, in all districts. This suggested that SHG membership encouraged diversification and scaling of income-generating activities in this sector. Non-farm income, which included activities like tailoring, running shops, and other small enterprises, also showed significant changes. Before joining SHGs, the majority of women in all districts earned ₹50,000 or less—3.3 percent in Nicobar Islands, 37.3 percent in North & Middle Andaman, and 25.7 percent in South Andaman. Post-SHG participation, this proportion dropped across districts, with North & Middle Andaman experiencing the most significant decline (from 37.3 percent to 12.7 percent). Notably, the percentage of women earning between ₹1,00,001 and ₹1,50,000 increased across districts, particularly in North & Middle Andaman (from 9.1 percent to 17.0 percent). This indicated that SHGs helped women improve their business acumen, expand their enterprises, and access better earning opportunities.

Several nuances emerged beyond simple district-level patterns. First, the data revealed that income increases were most pronounced in the mid-level income brackets (₹1,00,001 to ₹1,50,000) across all three sectors—agriculture, livestock/poultry, and non-farm activities. This suggested that SHGs acted as a stepping stone for women to move from subsistence-level earnings to more sustainable income levels. Second, the income transformation appeared to vary by activity type. Non-farm earnings showed the largest proportional increase in higher income brackets, highlighting that SHGs might have provided better support for entrepreneurial activities compared to traditional

sectors like agriculture or livestock (Gaiha & Nandhi, 2007; Kumar & Singh, 2014). Third, North & Middle Andaman consistently showed the most significant improvement across income categories. This could be attributed to better infrastructure, market access, or more active SHG engagement in this district compared to Nicobar Islands or South Andaman. Lastly, the highest income brackets (₹2,00,001 or more) showed minimal change, indicating that while SHGs helped women achieve moderate income gains, breaking into significantly higher income levels required additional support or resources.

Table 2: Income Transformation of SHGs Women before and after joining SHGs

Indicators	Cluster/grouping	Districts of Andaman & Nicobar Islands					
		Nicobar Islands		North & Middle Andaman		South Andaman	
		Before	After	Before	After	Before	After
Agricultural Income	≤ ₹50,000	3.6	1.1	28.3	9.4	18.1	11.2
	₹50,001 to ₹1,00,000	3.3	2.9	11.6	15.6	9.8	9.8
	₹1,00,001 to ₹1,50,000	0.0	2.9	10.9	17.4	5.8	9.4
	₹1,50,001 to ₹2,00,000	0.0	0.0	4.0	11.6	1.8	4.7
	≥ equal to ₹2,00,001	0.0	0.0	2.9	3.6	0.0	0.4
Livestock/ Poultry/ Forestry/ Fishing	≤ ₹50,000	1.4	1.1	36.6	20.3	19.6	22.1
	₹50,001 to ₹1,00,000	5.4	4.0	6.2	3.6	7.2	3.3
	₹1,00,001 to ₹1,50,000	0.0	1.8	7.2	17.8	5.8	3.6
	₹1,50,001 to ₹2,00,000	0.0	0.0	3.6	8.7	1.1	4.0
	≥ equal to ₹2,00,001	0.0	0.0	4.0	7.2	1.8	2.5
Income from non-farm earnings	≤ ₹50,000	3.3	2.2	37.3	12.7	25.7	18.1
	₹50,001 to ₹1,00,000	3.6	4.7	3.3	5.1	4.3	6.5
	₹1,00,001 to ₹1,50,000	0.0	0.0	9.1	17.0	5.1	10.5
	₹1,50,001 to ₹2,00,000	0.0	0.0	6.9	18.8	0.4	0.4
	≥ equal to ₹2,00,001	0.0	0.0	1.1	4.0	0.0	0.0

Source: Estimated from field survey data

Expenditure Transformation of SHGs Women

Table 3 provided valuable insights into the expenditure transformation of women in SHGs across the districts of the Andaman and Nicobar Islands. It highlighted changes in various categories of spending, including food, non-food, education, health, and social expenditures, before and after joining SHGs. In this regard, several nuanced trends emerged, indicating how SHG participation influenced the financial behaviour of women.

A notable shift was observed in food spending patterns across all districts. Before joining SHGs, the majority of women in North & Middle Andaman (36.2 percent) and South Andaman (29 percent) reported spending ₹5,000 or less per month on food. After joining, this proportion significantly reduced to 16.3 percent and 25.4 percent, respectively, reflecting improved financial capacity and possibly better access to resources. Higher food expenditure brackets, such as ₹10,001 to ₹15,000, showed an increase, particularly in North & Middle Andaman (from 7.6 percent to 10.9 percent), indicating a rise in disposable income. Similarly, the proportion of women spending ₹15,001 or more on food rose sharply in North & Middle Andaman, from 8 percent to 19.2 percent, demonstrating enhanced financial stability. Non-food expenditure followed a similar trend, with a significant decline in the percentage of women spending ₹3,000 or less per month. In North & Middle Andaman, this group dropped from 34.1 percent to 15.9 percent, while in South Andaman, it reduced from 31.2 percent to 17.8 percent. These changes highlighted improved financial capacity for non-essential spending. Higher expenditure brackets, such as ₹6,001 and above, showed notable increases. In North & Middle Andaman, the percentage of women in this category doubled, rising from 14.5 percent to 28.6 percent. This indicated that SHG participation allowed women to allocate more resources to lifestyle improvements and household needs beyond essentials.

Education spending patterns revealed a significant transformation, particularly in North & Middle Andaman. Before joining SHGs, 46.7 percent of women in this district spent less than ₹5,000 annually on education. After joining, this dropped to 31.5 percent. However, the decrease in education expenditure could indicate a push for low-income group children to pursue jobs instead of continuing their education, as families may prioritise immediate income generation over long-term educational investment (Singh & Pandey, 2012). The highest education expenditure bracket (above ₹20,001) also saw a rise across districts, with North & Middle Andaman

leading at 6.9 percent. This trend highlighted a growing willingness and ability among SHG women to prioritise education, possibly for their children or themselves. Health expenditure data revealed an interesting pattern. In all districts, a significant number of women spent ₹500 or less annually on health before joining SHGs—46.7 percent in Nicobar Islands and North & Middle Andaman, and 30.4 percent in South Andaman. After joining, these percentages dropped dramatically, particularly in North & Middle Andaman (from 46.7 percent to 33.3 percent). This indicated that SHG participation enabled women to allocate more resources to healthcare, reflecting an improvement in financial security and health awareness. Higher health expenditure brackets (₹501 to ₹1,000 and ₹1,501 or more) showed increases across districts, with North & Middle Andaman reporting the highest rise. This suggested that women began investing more in preventive and curative healthcare, improving their overall quality of life. Social expenditure, including spending on events, festivities, and community activities, also experienced transformation. Women spending ₹30,000 or less annually reduced across districts, particularly in North & Middle Andaman (from 14.5 percent to 3.6 percent). Conversely, the proportion of women in higher expenditure brackets (₹60,001 to ₹90,000) increased significantly, especially in the same district, where it rose from 3.6 percent to 14.5 percent. This shift highlighted the enhanced financial capacity of SHG members to contribute to social activities. The significant reductions in low-expenditure brackets across all categories, particularly in food and health, suggested that SHG membership helped women achieve better living standards. Increased spending on food and health indicated improved nutrition and healthcare access. The rise in education expenditure highlighted a shift in priorities, with SHG women investing more in education (Singh, 2013). This was a sign of their growing awareness of the long-term benefits of education for family welfare and economic empowerment. North & Middle Andaman consistently exhibited the most significant shifts across all expenditure categories, indicating better utilisation of SHG resources in this district. This could reflect stronger SHG networks or better financial literacy programs in the region. The rise in social expenditure among SHG members suggested that increased financial stability allowed women to participate more actively in community events, enhancing their social standing and networks. Across all districts, the ability to move from lower to higher expenditure brackets illustrated the financial empowerment of SHG women. This empowerment likely stemmed from increased income, improved access to loans, and enhanced decision-making power within households.

Table 3: Expenditure Transformation of SHGs Women before and after joining SHGs

Indicators	Cluster/grouping	Districts of Andaman & Nicobar Islands					
		Nicobar Islands		North & Middle Andaman		South Andaman	
		Before	After	Before	After	Before	After
Monthly food expenditure	≤ ₹5,000	4.7	3.6	36.2	16.3	29.0	25.4
	₹5,001 to ₹10,000	1.1	1.4	5.8	11.2	4.0	5.4
	₹10,001 to ₹15,000	0.0	0.7	7.6	10.9	2.2	4.0
	≥ ₹15,001	1.1	1.1	8.0	19.2	0.4	0.7
Monthly non-food expenditure	≤ ₹3,000	4.7	3.6	34.1	15.9	31.2	17.8
	₹3,001 to ₹6,000	1.1	1.1	9.1	13.0	0.0	4.3
	₹6,001 and above	1.1	2.2	14.5	28.6	4.3	13.4
Annual Educational Expenditure	Below ₹5000	4.3	3.6	46.7	31.5	27.5	25.4
	₹5001 to ₹10,000	0.0	1.4	1.4	4.0	5.1	6.2
	₹10,001 to ₹15,000	0.0	0.0	0.4	2.2	2.5	1.4
	₹15,001 to ₹20,000	2.5	1.1	5.1	13.0	0.0	1.1
	Above ₹20,001	0.0	0.7	4.0	6.9	0.4	1.4
Annual health expenditure	≤ ₹500	46.7	3.3	46.7	33.3	30.4	21.4
	₹501 to ₹1,000	4.7	2.2	4.7	16.7	0.0	10.9
	₹1,001 to ₹1,500	2.9	0.7	2.9	2.2	0.4	0.00
	≥ ₹1,501	3.3	0.7	3.3	5.4	4.7	3.3
Annual social expenditure	≤ ₹30,000	2.2	1.1	14.5	3.6	6.5	5.4
	₹30,001 to ₹60,000	4.3	4.7	39.1	35.9	23.2	22.1
	₹60,001 to ₹90,000	0.4	0.4	3.6	14.5	0.0	4.0
	≥ ₹90,001	0.0	0.7	0.4	3.6	5.8	4.0

Source: Estimated from field survey data

Saving Transformation of SHGs Women

Table 4 delved into the transformation of their savings habits before and after joining SHGs. The data showcased remarkable shifts in savings patterns, reflecting the improved financial discipline and opportunities created by SHG participation. In Nicobar Islands, a significant decline was observed in the proportion of women depositing savings of ₹500 or less in banks, from 1.8 percent to 1.4 percent. Although modest, this indicated a trend toward more robust saving habits. Post office savings in the same range dropped sharply from 5.8 percent to 1.4 percent, while deposits above ₹2,000 increased from non-existent levels to 1.4 percent. Similarly, insurance premiums for amounts above ₹1,500, previously absent, emerged post-SHG, signalling a growing awareness of financial security. In North and Middle Andaman, the transformation was pronounced. The share of women saving ₹500 or less in banks fell from 38.0 percent to 12.0 percent, while those saving between ₹1,001 and ₹1,500 rose from 2.5 percent to 15.9 percent. Deposits above ₹2,000 also saw a notable rise, from 4.0 percent to 5.8 percent. For post office savings, the percentage of women saving ₹500 or less decreased from 34.1 percent to 16.3 percent, with a corresponding increase in savings above ₹2,001, from 4.3 percent to 8.0 percent. Insurance premiums showed similar patterns, with higher amounts (₹1,001 to ₹1,500 and above) gaining traction. South Andaman showed comparable trends. The proportion of women saving ₹500 or less in banks decreased from 31.5 percent to 12.7 percent, and those saving over ₹2,001 increased from 0.7 percent to 6.5 percent. Post office savings in the lowest range dropped from 19.6 percent to 8.0 percent, while those exceeding ₹2,001 grew from 1.4 percent to 5.1 percent. Insurance premium payments above ₹2,001 rose from 0.7 percent to 4.3 percent, showcasing better financial planning and risk management.

A deeper analysis revealed key nuances. The overall shift from low savings brackets to higher ones indicated not just increased income but also enhanced financial literacy and trust in formal financial systems. Additionally, the uptake of insurance premiums highlighted a growing awareness of the need for financial security, especially among women who traditionally faced economic vulnerability. Post office savings, which were once dominated by small amounts, saw a diversification into larger savings, suggesting that SHGs played a role in instilling both short-term and long-term financial goals.

This transformation signified a crucial breaking point in the vicious circle of poverty that had historically constrained these communities. By increasing their savings, SHG women laid the foundation for stronger capital formation, which, in turn, allowed them to channel resources into business ventures and economic activities. The marked reduction in small savings (₹500 or less) and the rise in higher savings brackets demonstrated not only increased income but also the confidence to invest in long-term financial goals. This shift enhanced the capacity of SHG women to mobilise funds for entrepreneurial activities, reducing dependency on high-interest informal loans (Sharma, 2012; Thomas & Venkatesan, 2002). The increased deposits in banks and post offices indicated a growing integration with formal financial systems, providing access to credit for expanding businesses. Furthermore, the diversification of savings and the growing adoption of insurance reflected improved risk management. These changes enabled women to invest confidently in their ventures, such as livestock rearing, tailoring, petty shops, and agriculture. Such investments catalysed local economic growth, further empowering SHG members and their families. By breaking the poverty trap, SHG women achieved a virtuous cycle of economic empowerment. Increased savings led to capital accumulation, which facilitated investments in productive assets and businesses, driving higher incomes. This progress not only improved their financial independence but also strengthened their social standing within the community, creating a sustainable path to long-term development for the region.

Table 4: Saving Transformation of SHGs Women before and after joining SHGs

Indicators	Cluster/grouping	Districts of Andaman & Nicobar Islands					
		Nicobar Islands		North & Middle Andaman		South Andaman	
		Before	After	Before	After	Before	After
Saving deposit in bank	Less than or equal to ₹500	1.8	1.4	38.0	12.0	31.5	12.7
	₹501 to ₹1,000	3.3	3.6	9.4	9.4	1.4	1.1
	Rs1,001 to ₹1,500	1.8	1.8	2.5	15.9	0.7	9.8
	₹1,501 to ₹2,000	0.0	0.0	3.6	14.5	1.1	5.4
	Above ₹2,001	0.0	0.0	4.0	5.8	0.7	6.5
Post office saving	Less than or equal to ₹500	5.8	1.4	34.1	16.3	19.6	8.0
	₹501 to ₹1,000	0.4	1.4	11.6	14.5	2.5	6.2
	Rs1,001 to ₹1,500	0.7	2.5	5.1	9.1	6.5	10.1
	₹1,501 to ₹2,000	0.0	0.0	2.5	9.8	5.4	6.2

	Above ₹2,001	0.0	1.4	4.3	8.0	1.4	5.1
Insurance premium	Less than or equal to ₹500	1.8	1.8	32.2	23.2	28.6	15.2
	₹501 to ₹1,000	3.6	3.3	9.8	10.9	3.3	5.8
	Rs1,001 to ₹1,500	1.4	1.8	5.4	10.1	0.7	6.5
	₹1,501 to ₹2,000	0.0	0.0	5.8	9.1	2.2	3.6
	Above ₹2,001	0.0	0.0	4.3	4.3	0.7	4.3

Source: Estimated from field survey data

Indebtedness Transformation of SHGs Women

Table 5 highlights the transformation in indebtedness patterns of women in SHGs across the districts of the Andaman and Nicobar Islands, focusing on bank loans, moneylenders, and SHG borrowing before and after SHG participation. The findings reveal significant changes in financial behaviour, reflecting the impact of SHGs on women's financial independence and credit accessibility. In the Nicobar Islands, a slight increase was observed in the proportion of women with smaller loans (₹50,000 or less), rising from 1.4 percent to 3.6 percent. However, loans in the mid-range categories (₹50,001 to ₹2,00,000) showed a decline, suggesting improved repayment capacities or a shift in borrowing preferences. Interestingly, there was a new trend of high-value loans (above ₹2,00,000) in this district, increasing from 0 percent to 1.1 percent after joining SHGs. North & Middle Andaman exhibited the most notable changes. The proportion of women borrowing up to ₹50,000 increased significantly from 9.8 percent to 21.7 percent, reflecting greater access to manageable loans. Mid-range loans (₹50,001 to ₹2,00,000) decreased from 42.4 percent to 28.7 percent, while loans exceeding ₹2,00,000 rose from 5.4 percent to 7.2 percent, indicating a broader borrowing spectrum. In South Andaman, smaller loans (₹50,000 or less) rose moderately from 6.9 percent to 9.4 percent. While mid-range loans (₹50,001 to ₹2,00,000) declined, there was a substantial increase in high-value loans (above ₹2,00,000), growing from 3.3 percent to 8.7 percent. This shift suggests increased financial confidence and access to higher credit limits among SHG women.

The reliance on moneylenders showed a consistent decline across all districts for smaller loans (₹50,000 or less). In North & Middle Andaman, the percentage dropped sharply from 26.8 percent to 8.0 percent, while in South Andaman, it fell from 16.3 percent to 6.5 percent. Despite this positive shift, high-value loans (₹2,00,001 or more) from moneylenders increased significantly in all districts. North & Middle Andaman saw the most notable rise, from 10.9 percent to 17.0 percent. Borrowing through SHGs showed a significant increase, particularly in North & Middle Andaman and South Andaman. In North & Middle Andaman, the percentage of women borrowing ₹50,001 to ₹1,00,000 rose dramatically from 3.3 percent to 17.0 percent. Higher loan categories (₹1,00,001 to ₹2,00,000) saw an even greater surge, from 1.8 percent to 22.5 percent. Similar trends were observed in South Andaman, although less pronounced. In the Nicobar Islands, SHG borrowing remained limited, with no loans reported in certain categories. A notable trend was the sharp decline in the proportion of women who did not take loans after joining SHGs. In North & Middle Andaman, this dropped drastically from 47.8 percent to zero, while in the Nicobar Islands, it reduced from 5.8 percent to zero. In South Andaman, however, the percentage remained steady at 35.5 percent, reflecting a unique trend where a significant proportion of women chose not to borrow.

The decline in reliance on moneylenders for small loans suggests that SHGs provided an alternative, more accessible credit source. However, the increase in high-value loans from both moneylenders and banks raises questions about the financial strategies adopted by SHG women. This could indicate entrepreneurial initiatives or an increasing cost of living, requiring larger credit facilities. The sharp increase in SHG loans in North & Middle Andaman suggests a well-established SHG network and effective financial literacy programmes. The steady percentage of women in South Andaman not taking loans may indicate either a preference for saving or limited credit needs, reflecting a distinct financial behaviour compared to the other districts.

Table 5: Indebtedness Transformation of SHGs Women before and after joining SHGs

Indicators	Cluster/grouping	Districts of Andaman & Nicobar Islands					
		Nicobar Islands		North & Middle Andaman		South Andaman	
		Before	After	Before	After	Before	After
Bank indebtedness	≤ ₹50,000	1.4	3.6	9.8	21.7	6.9	9.4
	₹50,001 to ₹1,00,000	2.2	0.4	16.7	10.9	8.3	8.3
	₹1,00,001 to ₹2,00,000	3.3	1.8	25.7	17.8	17.0	9.1
	≥ ₹2,00,001	0.0	1.1	5.4	7.2	3.3	8.7
	≤ ₹50,000	5.4	2.5	26.8	8.0	16.3	6.5

Money lenders indebtedness	₹50,001 to ₹1,00,000	1.1	1.8	10.9	14.9	7.6	6.5
	₹1,00,001 to ₹2,00,000	0.4	1.4	9.1	17.8	5.1	11.2
	≥ ₹2,00,001	0.0	1.1	10.9	17.0	6.5	11.2
SHGs indebtedness	≤ ₹50,000	0.0	0.0	2.2	4.0	0.0	2.9
	₹50,001 to ₹1,00,000	1.1	0.0	3.3	17.0	0.0	8.7
	₹1,00,001 to ₹2,00,000	0.0	0.0	1.8	22.5	0.0	14.9
	≥ ₹2,00,001	0.0	0.0	2.5	14.1	0.0	9.1
	Not taken money	5.8	0.0	47.8	0.0	35.5	35.5

Source: Estimated from field survey data

Transformation of Decision-making abilities of SHGs Women

Table 6, which examined the transformation of women's decision-making abilities after joining SHGs, highlighted profound changes across various dimensions of household and financial management. This data revealed not only the empowerment of women but also the challenges that persisted in achieving equitable decision-making in certain areas. The nuanced outcomes provided valuable insights into the evolving dynamics within households in the Andaman and Nicobar Islands. A significant improvement was observed in women's involvement in managing daily household expenses, with 58.7 percent of respondents either strongly or somewhat agreeing that they were actively involved in such decisions. This indicated that SHG participation enhanced their financial literacy and confidence, allowing them to take a more proactive role in routine financial management. However, a sizeable 36.6 percent of women disagreed or strongly disagreed, suggesting that traditional gender norms and power imbalances still hindered some women's participation. Women's decision-making abilities concerning children's education presented a contrasting scenario. A majority (71.7 percent) either disagreed or strongly disagreed with having a say in selecting educational institutions for their children. This pointed to a continued dominance of male family members or elders in critical decisions, highlighting an area where SHGs could focus on further advocacy and empowerment programs (Leivang, 2022; Nair, 2005).

The data on children's extracurricular activities painted a similar picture. Although 35.9 percent of women expressed agreement regarding their involvement, a notable 62.3 percent disagreed or strongly disagreed. This demonstrated that while some strides had been made, societal barriers still restricted women's agency in nurturing their children's holistic development. One of the most notable improvements was observed in decision-making related to starting or expanding family businesses. Over half of the respondents (56.9 percent) agreed that they played a role in these decisions, showcasing a remarkable shift in their entrepreneurial confidence and ability to influence family economics. This was likely attributed to the training and exposure women received through SHG activities, which equipped them to participate meaningfully in economic ventures. Regarding managing family savings or investments, 52.2 percent of respondents agreed that they contributed to these decisions. This indicated a growing financial autonomy among SHG women, which had the potential to transform their households' economic resilience. However, the remaining 44.9 percent either disagreed or remained neutral, suggesting a need for continued efforts to enhance women's financial decision-making capacities. In contrast, the lowest level of participation was seen in organizing festivals and cultural events, where 52.5 percent of women disagreed or strongly disagreed about having a role. This highlighted the deeply entrenched cultural norms that continued to limit women's participation in community-oriented decisions.

The data revealed a two-fold narrative: while SHGs succeeded in enabling women to take charge of financial and entrepreneurial decisions, progress in domains tied to family and cultural norms remained limited. The stark contrast in participation between areas like managing household expenses and decisions regarding children's education or cultural events underscored the selective nature of empowerment. An innovative takeaway from this research was the ripple effect SHGs could create by targeting decision-making disparities in areas like education and cultural participation. Table 6 underscored that decision-making was the cornerstone of empowerment, and SHGs had become catalysts for change.

Table 6: Transformation of decision making abilities of Women after joining SHGs

Indicators regarding decision making	Strongly agree	Somewhat agree	Neutral	Disagree	Strongly disagree
Daily household expenses	57 (20.7)	105 (38.0)	13 (4.7)	75 (27.2)	26 (9.4)
Selecting children's schools or educational institutions	22 (8.0)	50 (18.1)	6 (2.2)	56 (20.3)	142 (51.4)
Children's extracurricular activities	38 (13.8)	61 (22.1)	5 (1.8)	28 (10.1)	144 (52.2)

Starting or expanding family business	67 (24.3)	90 (32.6)	35 (12.7)	53 (19.2)	31 (11.2)
Managing family savings or investment	59 (21.4)	85 (30.8)	8 (2.9)	44 (15.9)	80 (29.0)
Participation in organizing festivals and cultural events	22 (8.0)	78 (28.3)	31 (11.2)	82 (29.7)	63 (22.8)

Source: Estimated from field survey data

Average and Marginal Propensity to Save and Consume among Women's SHGs

Table 7 analyses the Average Propensity to Save (APS), Marginal Propensity to Save (MPS), Average Propensity to Consume (APC), and Marginal Propensity to Consume (MPC) across income groups classified as low, middle, and high-income categories. The findings reveal distinct saving and consumption patterns across these groups, providing valuable insights into their financial behaviour. For the low-income group, savings propensities are minimal (APS: 0.0041, MPS: 0.0038), indicating that nearly all income is consumed, leaving little room for savings. Interestingly, while the APC is relatively high (0.115), the MPC is notably negative (-1.909). This suggests that additional income in this group may be directed towards debt repayment or essential, non-consumption-related priorities rather than increased spending. In the lower-middle-income group, there is a slight improvement in savings behaviour, with APS increasing to 0.0083 and MPS to 0.0078. The APC (0.197) and MPC (-0.048) suggest cautious consumption patterns, where additional income is not fully utilised for spending but may be redirected towards modest savings and essential investments. This reflects a gradual improvement in financial stability. The middle-income group shows a notable increase in both APS (0.0136) and MPS (0.0128), indicating enhanced capacity for savings. At the same time, APC rises to 0.289, and MPC becomes positive (0.166), suggesting a balanced approach where additional income is partly saved and partly spent. This group appears to be transitioning from financial constraints towards greater stability, allocating resources to both current needs and future security. In the upper-middle-income group, savings propensities strengthen further, with APS at 0.0179 and MPS at 0.0173. Meanwhile, consumption propensities rise significantly, with APC reaching 0.396 and MPC increasing to 0.628. This indicates growing financial flexibility, enabling consistent savings alongside an increase in discretionary spending. This group is likely meeting both essential and aspirational needs, reflecting improved quality of life. For the high-income group, savings propensities peak, with APS at 0.0284 and MPS at 0.0276, demonstrating a strong focus on wealth accumulation. However, the consumption propensities in this group show a dramatic shift: APC surges to 0.624, and MPC reaches an unusually high level of 6.82. This suggests that additional income is predominantly directed towards consumption, possibly for luxury goods, lifestyle improvements, or large-scale investments. This behaviour reflects a transition from financial stability to indulgence or strategic expenditure.

The data highlights a clear trend: as income levels increase, both APS and MPS improve, demonstrating a growing ability to save. Concurrently, the rising APC and MPC in higher income groups indicate an increased allocation of income towards consumption, suggesting a focus on enhancing living standards and meeting aspirational goals. The negative MPC observed in the low-income group highlights potential financial challenges, such as debt repayment or pressing obligations, which limit their spending capacity. For this group, targeted financial support and debt management strategies could help alleviate constraints and promote savings. In contrast, the high MPC in the high-income group suggests a need for financial literacy programmes to encourage prudent spending and long-term investments. The patterns observed in the SHG women's saving and consumption behaviours align closely with Rostow's stages of economic growth, particularly reflecting transitions from subsistence to advanced economic activities. The low-income group mirrors the "traditional society" stage, where limited resources restrict savings, and consumption remains tied to basic needs. As women move into the lower-middle and middle-income groups, they demonstrate characteristics of the "pre-conditions for take-off," marked by improved saving capacity and cautious consumption, signifying the foundations of economic progression. The upper-middle-income group aligns with the "take-off" stage, where enhanced savings and increased discretionary consumption indicate growing financial flexibility and economic momentum. Finally, the high-income group reflects elements of the "drive to maturity" and "age of high mass consumption," where surplus income enables wealth accumulation, luxury spending, and broader economic participation.

Table 7: Average and Marginal Propensity to Save and Consume among SHGs Women

Indicators/groupings of Income of the SHGs Women	Savings Propensity		Consumption Propensity	
	APS (in avg.)	MPS (in avg.)	APC (in avg.)	MPC (in avg.)
≤ ₹50,000	0.0041	0.0038	0.115	-1.909

₹50,001 to ₹1,00,000	0.0083	0.0078	0.197	-0.048
₹1,00,001 to ₹1,50,000	0.0136	0.0128	0.289	0.166
₹1,50,001 to ₹2,00,000	0.0179	0.0173	0.396	0.628
≥ equal to ₹2,00,001	0.0284	0.0276	0.624	6.82

Source: Authors estimation of SHGs women's income, consumption and savings data

IV. CONaCLUSION AND RECOMMENDATIONS

The analysis highlights disparities in financial participation, decision-making, and indebtedness across districts in the Andaman and Nicobar Islands. While there is moderate involvement in managing daily expenses and family businesses, decision-making in education, savings, and cultural activities remains limited. Financial literacy, equitable access to resources, and community engagement are pivotal in addressing these gaps. By implementing targeted programs to enhance financial awareness, empower decision-making in critical areas, and improve access to financial institutions, a more inclusive and participatory environment can be fostered, leading to holistic socio-economic development. From the findings, it is evident that both the Marginal Propensity to Save (MPS) and Marginal Propensity to Consume (MPC) consistently increase with higher income levels. This presents a significant opportunity for further development through strategic investments. To ensure continued growth and financial security, it is crucial to introduce investment strategies that align with the SHG women's current economic activities and local resources. These findings suggest that SHG women are collectively moving through various stages of growth, with tailored financial strategies capable of accelerating their journey toward sustained economic empowerment and prosperity. Based on the findings of the study, the following suggestions are proposed to address identified challenges and further enhance the effectiveness of SHG initiatives in empowering women and fostering sustainable socio-economic development.

- Limited advanced education among SHG members restricts opportunities for broader economic ventures, so offering specialised training programmes or scholarships can empower women to explore diverse income-generating activities.
- While SHGs have improved mid-level incomes, progress in higher income brackets remains limited, and providing mentorship, market linkages, and credit support for scaling entrepreneurial ventures can facilitate upward economic mobility.
- Tailoring and small enterprises exhibit significant income growth, and expanding access to tools, raw materials, and skill development workshops can further bolster these non-farm activities.
- Increased savings and reduced reliance on informal loans highlight SHGs' financial impact; therefore, regular financial literacy workshops can further improve women's understanding of formal financial systems and investment opportunities.
- The rise in health and education expenditure reflects improved priorities, so partnering with healthcare providers and educational institutions to offer discounted services or incentives can encourage further investment in these areas.
- The reliance on moneylenders for large loans poses risks of over-indebtedness; thus, introducing counselling services and facilitating access to affordable credit from formal institutions can mitigate these risks.
- North & Middle Andaman demonstrates strong SHG engagement, while South Andaman shows a steady proportion of non-borrowers, and targeted interventions such as tailored SHG programmes and outreach in underperforming districts can ensure balanced regional growth.
- The increase in insurance adoption reflects rising financial awareness, so expanding SHG partnerships with insurance providers and offering subsidised premiums can improve members' financial security. Also, SHG participation enhances women's entrepreneurial confidence but more leadership opportunities are needed.
- Investing in sectors that directly contribute to the local economy—such as sustainable fisheries, agriculture, and eco-tourism—would be highly beneficial. These areas are not only closely related to the existing livelihoods of SHG women but also hold the potential for long-term financial gains. By focusing on local, eco-friendly initiatives, the women can generate sustainable income while fostering the preservation of their natural environment and cultural heritage. Such investments would allow them to grow their savings, create jobs, and increase community resilience, ultimately fostering a deep sense of ownership and pride in their economic development. Incorporating these localised investment opportunities will not only enhance their financial stability but will also empower these women to contribute to the sustainable growth of their communities, reinforcing the interconnectedness between personal financial growth and collective development.

- To empower SHG women in the Andaman and Nicobar Islands and encourage long-term financial growth, a Recurring Deposit (RD) Scheme, along with women centric investment strategies, could be a game-changing approach. By collaborating with local banks and microfinance institutions, we can set up a customised RD scheme with affordable monthly contributions, starting at just ₹ 100-500. This will help the women develop good saving habits. The scheme should offer competitive interest rates, making it an appealing option for regular savings while ensuring their financial security in the future.

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