

FINANCIAL EMPOWERMENT FOR AGRICULTURAL CHANGE: THE ROLE OF SHGS WOMEN IN THE ANDAMAN AND NICOBAR ISLANDS

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ABSTRACT

The empowerment of rural women through financial inclusion had emerged as a critical strategy for sustainable development, particularly in agricultural economies. This study was conducted during year 2024 to explore the relationship between financial empowerment and agricultural participation among women members of Self Help Groups (SHGs) in the Andaman and Nicobar Islands a region marked by both geographical isolation and rich agricultural potential. Using a sample of 276 SHG women, the study investigated how financial services, including savings, microcredit, and training, had influenced women's roles in agricultural decision-making, input use, and credit utilization. The research also assessed the extent to which SHG membership translated into tangible agricultural benefits, including increased productivity, diversification of crops, and enhanced autonomy. Quantitative methods, including descriptive statistics and binary logistic regression, were used to analyse the predictors of agricultural loan access. Key findings revealed that factors such as land ownership, leadership roles within SHGs, access to training, financial literacy, and decision-making power significantly enhanced the likelihood of women accessing agricultural credit. However, the study also identified critical barriers, including limited digital literacy, lack of agricultural training, and socio-cultural constraints on autonomy. The findings suggested that while SHGs had expanded the financial reach of women, further integration with agricultural support systems and gender-sensitive policy interventions were needed to unlock their full potential. This research contributed to the discourse on women's empowerment, financial inclusion, and rural development by offering insights from a uniquely underserved and geographically distinct context.

(Key words: SHGs women, financial empowerment, agricultural participation, microfinance, Andaman and Nicobar Islands)

INTRODUCTION

Agriculture remains the backbone of rural livelihoods in India, and the role of women within this sector had grown significantly in recent decades. Despite their crucial contributions to agricultural production, women continued to face systemic challenges such as restricted access to land, limited credit availability, and exclusion from decision-making processes. In response to these constraints, Self Help Groups (SHGs) had become an important institutional mechanism aimed at empowering rural women economically and socially. By facilitating savings, credit access, collective bargaining, and capacity-building, SHGs served as a vital platform for women to assert their economic agency, particularly in agriculture dependent communities.

The Andaman and Nicobar Islands presented a unique geographical and socioeconomic case for examining the impact of SHGs on women's agricultural empowerment.

Isolated from the Indian mainland and characterized by diverse tribal populations, these islands faced challenges such as poor market access, limited extension services, and climate-related vulnerabilities. In this context, SHGs not only provided financial support but also fostered social networks that were essential for the diffusion of agricultural knowledge and collective action. However, there was a limited body of empirical research specifically analysing how financial empowerment through SHGs translated into agricultural outcomes in this remote region.

Several studies had demonstrated the positive impacts of SHG participation on women's financial and agricultural roles. For instance, Swain and Wallentin (2009) showed that microfinance through SHGs significantly increased women's self-confidence and control over household finances in rural India, especially when combined with education and training. Puhazhendhi and Badatya (2002) evaluated the SHG-bank linkage program and concluded that access to institutional credit improved agricultural and non-agricultural enterprise development among rural

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women. Tesoriero (2006) emphasized the role of SHGs in community empowerment, highlighting how regular participation fosters leadership and to trust necessary for cooperative agricultural ventures. Deininger and Liu (2013) found that SHG participation had positive effects on consumption, asset accumulation, and risk-sharing behaviour, although impacts varied by region and household status. Rajalaxmi and Indra (2024) found that SHG membership significantly improved women's access to credit for agricultural purposes and enhanced their participation in crop-related decision-making. Kabeer and Datta (2020) argued that financial inclusion is not sufficient on its own; social norms and household power dynamics must also be addressed for women to fully utilize financial resources. The contribution of financial empowerment to sustainable agriculture was also reflected in studies such as that of Taha and Abdel-Wahab (2020), which linked strategic resource use with improved crop productivity through informed financial and agronomic decisions. Sha Hussain and Sadasivam (2023) underscored the role of local-level organizations like SHGs in building adaptive capacity among small landholding women farmers facing climate-related shocks. Narayanan and Gulati (2023) stressed the importance of decentralized, SHG-led input procurement and marketing networks in isolated regions like islands to improve agriculture viability. Roy *et al.* (2023) found that SHG membership improved women's involvement in financial decision-making, especially in determining the use of loans for agricultural investment.

Despite these insights, many SHG-linked women in remote settings still struggled to translate financial inclusion into agricultural productivity. Barriers such as low literacy, patriarchal norms, poor infrastructure, and lack of training often undermined the full benefits of SHG participation. Research by Kabeer and Datta (2020) and Deininger and Liu (2013) emphasized that financial inclusion was necessary but it was not sufficient for empowerment unless complemented by broader social and institutional support systems. Therefore, it was imperative to investigate not just whether SHGs provided financial services, but how effectively these services enabled women to participate meaningfully in agriculture and to influence outcomes at the household and community levels.

This study addressed this gap by focusing on SHG women in the Andaman and Nicobar Islands and examining how financial empowerment influenced their agricultural engagement. Specifically, the study assessed the nature and extent of SHG women's participation in agricultural activities, their access to agricultural loans, and the socio-economic and institutional variables that predicted such access. It also sought to understand the barriers that limited the conversion of financial empowerment into productive agricultural change. By doing so, the research contributed to ongoing debates about the intersections of gender, finance, and agriculture, and provided region-specific policy recommendations to enhance the impact of SHGs in India's island economies.

MATERIALS AND METHODS

The study employed a quantitative research design based on primary data collected from 276 Self Help Group (SHG) women across the Andaman and Nicobar Islands during year 2024. A proportionate sampling technique (Table 1) was used to select respondents from three districts Nicobar, North and Middle Andaman, and South Andaman based on SHG concentration. Within each district, the block with the highest SHG membership was chosen: Campbell Bay (Nicobar), Diglipur (North and Middle Andaman), and Ferrargunj (South Andaman). The final sample was distributed proportionately: Campbell Bay (19 respondents), Diglipur (159), and Ferrargunj (98). Data were gathered through structured surveys and direct interviews, ensuring detailed insights into financial behaviour and agricultural involvement. Key variables like land ownership, training, leadership role, and decision-making were analysed.

A binary logistic regression was used to assess the impact of independent variables such as land ownership, training, education, leadership roles, and decision-making power on the likelihood of accessing agricultural loans. Data collection was conducted through structured surveys and direct interviews, ensuring comprehensive insights into the respondents' financial knowledge, access to agricultural credit, and participation in farming activities (Karmakar *et al.*, 2020; Kumar *et al.*, 2018). Similar approaches have been used in previous microfinance and rural empowerment studies to assess the impact of financial services on women's roles in agriculture and rural development (Tankha, 2002; Anonymous, 2012). This methodology enables an in-depth understanding of the financial empowerment gaps, agri-credit usage, and decision-making autonomy among SHG members in the region, thereby offering valuable insights for policy formulation and targeted agricultural interventions.

RESULTS AND DISCUSSION

Demographic profile of SHG women

Table 2 presents the demographic profile of the respondents. The study covered a total of 276 women members of Self Help Groups (SHGs) from the Andaman and Nicobar Islands. A majority of the respondents (37.0 per cent) were in the 30–40 age group, followed by 41–50 years (25.4 per cent) and below 30 years (24.6 per cent). Only 13.0 per cent were above 50 years, indicating that the majority of SHG participants were within their economically active years. Similar findings on the active participation of middle-aged women in SHGs were noted by Sinha (2006). With respect to education, 31.9 per cent had completed secondary education (6th–10th standard), while 27.5 per cent had only primary schooling. Notably, 19.6 per cent had no formal education. However, 21.0 per cent had attained higher secondary education or above, reflecting an emerging trend of improved educational access among rural

women a key factor in enabling participation in financial and community-based activities (Swain and Wallentin, 2009). Most respondents were married (76.4 per cent), while 12.7 per cent were widowed and 10.9 per cent were single or separated. Family size was moderate, with the majority (57.2 per cent) reporting 4–5 members per household. A further 27.5 per cent had more than five members, which may indicate extended or joint family structures common in rural Indian settings (Deshmukh-Ranadive, 2004).

In terms of livelihood, 40.9 per cent of the respondents were engaged in agriculture or livestock-related activities, while 28.6 per cent worked as non-agricultural labourers. Self-employment or small enterprises accounted for 21.0 per cent of the occupations, and a smaller proportion (9.4 per cent) reported no income-generating activity. This distribution supports the view that SHGs often serve as platforms for diversifying women's livelihoods, particularly in agriculture-dependent regions (Anonymous, 2018). Monthly household income remained modest. Nearly half (46.7 per cent) of the participants earned between ₹ 5,001 ₹ 10,000, followed by 25.7 per cent earning less than ₹ 5,000. Only 8.0 per cent had monthly incomes above ₹ 15,000, underscoring persistent financial vulnerability among SHG households in island economies (Karmakar, 2008). Regarding SHG involvement, 39.5 per cent had been members for 3–5 years, while 30.4 per cent had joined within the last three years. A similar proportion (30.1 per cent) had been members for over five years. The balance among membership durations reflects both recent outreach efforts and the continued engagement of long-standing members. The demographic profile showed that SHGs in the Andaman and Nicobar Islands attracted a mix of low- to middle-income rural women, mostly married and within working age, with moderate education and involvement in agriculture and allied activities. These characteristics are important in understanding how SHGs influence financial and agricultural decisions at the grassroots level.

SHG participation profile

Table 3 summarised the patterns of participation among women in SHGs in the Andaman and Nicobar Islands. A majority (67.4 per cent) of the women had participated in SHGs solely as members, while 19.6 per cent had held formal roles such as treasurer or secretary. A further 13.0 per cent had served as rotational leaders at least once. Although leadership positions were limited, the presence of rotational leadership indicated some scope for participatory decision-making, which had been shown to enhance self-confidence and social capital (Kabeer, 2005). The frequency of meetings varied, with the highest proportion (40.9 per cent) attending fortnightly, followed by weekly (33.3 per cent) and monthly (25.7 per cent) meetings. Regular meetings were essential for maintaining the cohesion and functionality of SHGs, as evidenced in earlier studies (Deininger and Liu, 2013). Regarding training, 34.1 per cent of respondents had received both financial and agricultural training through SHGs, while 28.6 per cent had received only financial training. Agricultural training alone was less common (13.0

per cent), and 24.3 per cent reported receiving no formal training. These figures highlighted a gap in agricultural skill-building despite agriculture being the primary livelihood for many women. This underscored the need for integrated capacity development, as also advocated by Tesoriero (2006). Savings participation appeared robust: 81.2 per cent of respondents always contributed to group savings, 14.1 per cent contributed occasionally, and only 4.7 per cent reported rare or no contributions. These figures reaffirmed the foundational role of savings in SHG dynamics, enabling access to internal lending mechanisms (Anonymous, 2020).

In terms of credit, 72.8 per cent of the women had taken a loan via SHG in the past three years. Among borrowers, 32.3 per cent used the loan for agriculture or livestock purposes, 19.6 per cent for non-agricultural businesses, and 21.0 per cent for health, education, or home improvements. Additionally, 14.9 per cent reported borrowing for consumption needs or debt repayment. These patterns indicated that while economic activities were a major driver of credit demand, social welfare and livelihood security also played critical roles (Puhazhendhi and Badatya, 2002). In sum, the SHG participation profile demonstrated strong engagement in savings and loan activities, moderate involvement in leadership, and limited access to agricultural training.

Financial empowerment Indicators

Table 4 provided insights into the financial empowerment of SHG women in the Andaman and Nicobar Islands. An overwhelming majority (89.1 per cent) of women owned a bank account, a finding aligned with the broader success of India's Pradhan Mantri Jan Dhan Yojana (PMJDY) in promoting basic financial inclusion (Demirgüç-Kunt *et al.*, 2022). However, only 66.7 per cent of respondents reported being able to operate the account independently, suggesting that formal inclusion did not necessarily translate into functional inclusion a gap noted in other rural contexts as well (Sanyal *et al.*, 2021). Loan usage decisions presented a mixed picture: while 38.8 per cent of women made such decisions independently, 46.7 per cent did so jointly with family members, and 14.5 per cent had limited or no say. This pointed to ongoing gendered constraints in financial autonomy, despite participation in SHGs echoing concerns raised in recent empowerment studies (Agarwal *et al.*, 2019). Awareness of financial products varied significantly. Savings accounts (76.4 per cent) and credit options (63.0 per cent) were better known than insurance (30.4 per cent) and mobile banking or UPI platforms (24.6 per cent). Given the growing digitalisation of financial services, low digital literacy emerged as a barrier to full economic engagement, particularly for rural women (Pattnaik *et al.*, 2023). Furthermore, limited understanding of agricultural insurance options was notable in a context where agriculture remained a primary occupation for many. Self-rated financial confidence levels further reflected this disparity in empowerment. Only 25.7 per cent of respondents considered their confidence high (scores of 7–10), while the majority rated themselves as having moderate (46.7 per cent) or low

(27.5 per cent) confidence. This self-perception likely stemmed from inadequate financial training or support in adapting to evolving service mechanisms, such as digital banking tools and credit platforms (Roy and Sharma, 2020). In conclusion, while access to basic services had improved substantially, deeper empowerment measured through independent decision-making, confidence, and product knowledge remained underdeveloped.

Agricultural engagement of SHG women

Table 5 presented insights into the nature and extent of agricultural participation among SHG women in the Andaman and Nicobar Islands. The data revealed a complex interplay of land access, cropping patterns, input utilisation, credit usage, and decision-making authority. Only 36.6 per cent of women reported owning land, while 26.1 per cent had joint ownership, and 37.3 per cent depended on informal or leased access. This highlighted limited tenure security, a known barrier to credit and technology adoption, particularly for women (Agarwal, 2018). A significant portion of respondents cultivated very small plots, with 28.3 per cent holding between 0.2–0.4 hectare and 23.9 per cent cultivating less than 0.2 hectare. Merely 6.2 per cent held more than 0.8 hectare. Approximately 27.5 per cent were landless, underscoring the challenges of achieving meaningful agricultural returns from plots under hectare⁻¹, especially without mechanisation or input-intensive practices (Doss *et al.*, 2020). Vegetables were the most widely cultivated crops (30.4 per cent), followed by pulses (15.6 per cent) and tubers (13.8 per cent), all typically suitable for low-input, small-scale farming systems hectare⁻¹. However, 30.8 per cent of women did not engage in any crop cultivation, signalling that SHG membership did not always translate to agricultural participation. In terms of input usage, 50 per cent purchased seeds in the previous year, 44.6 per cent bought fertilisers, and 33 per cent bought pesticides. These figures reflected varying intensities of cultivation per hectare, likely influenced by income levels, land size, and credit availability. A quarter (24.3 per cent) had not purchased any major inputs, possibly due to financial constraints or subsistence-level farming (Pattnaik and Jha, 2023).

Regarding the purpose of agricultural loans, only 24.3 per cent of women borrowed for crop production, followed by 18.5 per cent for livestock and 12.3 per cent for equipment and irrigation. The remaining 38 per cent reported no agricultural borrowing, indicating underutilisation of SHG-linked credit for agricultural scaling hectare⁻¹. Decision-making dynamics further shaped agricultural engagement: 34.8 per cent made borrowing decisions independently, while 42.8 per cent did so jointly, and 22.5 per cent reported decisions being made by others. Although a moderate degree of financial agency was visible, intra-household power relations still constrained full autonomy an issue commonly noted in rural finance literature (Roy *et al.*, 2023). While SHGs facilitated limited agricultural engagement, significant structural constraints including landholding below per hectare, input affordability, and partial

decision-making power curbed broader agricultural transformation among SHG women in the region.

Agricultural engagement and resource access

Table 6 examined that roughly one-third of the respondents (31.5 per cent) were directly engaged in farming or livestock activities, while an equal proportion participated only as labour or family helpers (37 per cent). However, another 31.5 per cent reported no agricultural involvement whatsoever. This segmentation suggested that despite SHG membership, not all women were positioned to leverage agricultural opportunities, possibly due to lack of land, training, or intra-household labour distribution (Dev *et al.*, 2022). When examining access to agricultural inputs, 37.3 per cent of women sourced them via local markets, 26.8 per cent through SHG channels, and 35.9 per cent had no direct access at all. The limited SHG-facilitated input access pointed to untapped potential for SHGs as agri-service delivery platforms. Enhanced group-based procurement and collective farming could improve economies of scale, particularly in remote or dispersed island geographies where market access is often fragmented (Narayanan and Gulati, 2023). Training support remained minimal, with only 34.1 per cent of women receiving any agricultural training. This skill gap likely contributed to the limited use of SHG credit for agricultural productivity. As highlighted in similar studies, technical capacity building remains essential to move women from marginal roles to agripreneurial agency (Singh *et al.*, 2021). The usage of SHG loans in agriculture was relatively low: only 18.5 per cent used loans for crop cultivation, 13.8 per cent for livestock or poultry, and 8.3 per cent for equipment. A substantial 59.4 per cent reported no agriculture-related credit usage. This underutilisation suggested that SHG-linked microfinance in this region had yet to effectively catalyse agricultural investment, especially per hectare, a key indicator of productivity growth (Ghosh and Reddy, 2022). The data emphasised a critical need to strengthen SHGs' capacity to serve as conduits for agricultural extension, input access, and targeted credit.

Barriers to financial empowerment and agricultural participation

Table 7 presented respondents' perceptions of various structural and socio-cultural barriers that limited their financial empowerment and agricultural involvement. The results underscored how both systemic and household-level constraints coexisted, especially in geographically isolated contexts like the Andaman and Nicobar Islands. A significant majority (68.5 per cent) agreed that the lack of formal financial training hindered their ability to manage finances and make informed borrowing decisions. This aligns with studies noting that financial literacy among rural women in India remains insufficient, particularly regarding formal credit use and digital platforms (Anonymous, 2023; Roy *et al.*, 2021). Limited access to agricultural credit was affirmed by 62.3 per cent of participants, suggesting that SHG-linked financial systems had not been fully leveraged for productive investment in agriculture. Prior research highlights that credit disbursal often favours consumption

or emergency needs over planned agri-investment, particularly when technical guidance is lacking (Bose and Sarkar, 2022). Geographical isolation, affirmed by 59.4 per cent of respondents, emerged as a major structural barrier. The island setting restricts access to financial institutions, agri-inputs, and markets, echoing previous findings that rural and remote populations face a compounded disadvantage in accessing financial and agricultural services (Narayanan and Gulati, 2023).

Interestingly, family restrictions on loan usage were acknowledged by 40.9 per cent of respondents, reflecting intra-household power imbalances. These findings supported the argument that financial inclusion efforts must also tackle social norms that restrict women's financial autonomy (Kabeer and Datta, 2020). Low digital literacy was identified by over half of the sample (53.6 per cent), which could limit engagement with mobile banking and digital financial tools essential for remote regions. This corroborates national data indicating a digital gender gap, especially in semi-literate populations (Anonymous a, 2023). Finally, the absence of strong market linkages for agricultural produce was perceived as a barrier by 56.5 per cent of participants. This likely discouraged productive agricultural investment and explained the low uptake of agri-credit observed in earlier tables. Without assured markets, farming remains risky, especially per hectare where marginal returns discourage continued engagement (Dev *et al.*, 2022).

Predictors of agricultural loan access among SHG women

A binary logistic regression (Table 8) was performed to examine the influence of socio-economic and empowerment-related factors on SHG women's access to agricultural loans in the Andaman and Nicobar Islands. The overall logistic regression model was statistically significant, indicating that the set of predictors reliably differentiated between women who accessed agricultural loans and those who did not. The model explained 30.7 per cent of the variance in loan access as per the Nagelkerke R^2 value and achieved a classification accuracy of 77.2 per cent, correctly classifying 80.0 per cent of non-borrowers and 74.3 per cent of borrowers. As shown in Table 8, the strongest predictors of agricultural loan access were land ownership, SHG position held, financial decision-making power, access to training, education level, and awareness of government agricultural schemes, all statistically significant at the 5 per cent level ($p < 0.05$).

Women who owned land were 2.49 times more likely to access agricultural loans ($B = 0.912$, $p = 0.006$), while those who held leadership roles in their SHG had 2.18 times higher odds ($B = 0.781$, $p = 0.010$). Access to training increased the likelihood of borrowing by 1.80 times ($B = 0.587$, $p = 0.025$), and women with autonomous financial decision-making had 1.90 times the odds of loan access ($B = 0.643$, $p = 0.025$). Additionally, each increase in education level improved the odds of loan access by 1.37 times ($B = 0.318$, $p = 0.036$), and those aware of agricultural schemes were twice as likely to borrow ($B = 0.706$, $p = 0.018$). Income category ($p = 0.059$) and SHG savings participation ($p =$

0.068) approached statistical significance, suggesting that economic capacity and engagement with saving mechanisms may also influence borrowing behaviours. These findings suggest that agricultural financial inclusion among SHG women is positively influenced by a combination of resource access (land), institutional roles (SHG leadership), empowerment indicators (decision-making power, education), and programme awareness. These variables collectively serve as enablers of agricultural investment in this remote and under-researched region.

The study provided critical insights into how financial empowerment through SHGs influences agricultural participation among women in the Andaman and Nicobar Islands. It revealed that while SHGs have successfully broadened women's access to basic financial services such as savings and credit, the translation of this access into meaningful agricultural outcomes remains uneven. Only a segment of SHG women were able to use financial resources for productive agricultural investment, largely influenced by factors such as land ownership, leadership roles, financial decision-making autonomy, and training access.

Logistic regression results showed that women with greater institutional and financial agency—those who owned land, held leadership positions, or had undergone training—were significantly more likely to access agricultural loans. However, persistent challenges such as limited agricultural training, low digital literacy, restricted market access, and intra-household constraints continue to hinder the full realization of SHGs' potential in promoting agricultural change. The findings underscore the need for integrated empowerment strategies that go beyond financial inclusion and address the structural and capacity-related barriers that limit women's participation in agriculture.

Policy implications

Based on the research, the policy implications for enhancing the role of SHGs and NGOs in promoting financial empowerment and agricultural change are as follows:

In the future, it would be better to empower SHGs to function as agri-service centres by coordinating group-based purchases of agricultural inputs and facilitating access to extension services. Integrating hands-on agricultural training into SHG activities with support from NGOs would enhance women's capacity to engage in farming more effectively, especially if training is tailored to local needs. Encouraging SHG-based ventures such as collective farming, livestock rearing, or food processing could strengthen women's income generation, with NGOs playing a critical role in providing business guidance and support. Offering training on agricultural financial management—including credit planning, budgeting, and agri-insurance—would help to improve financial decision-making and confidence among SHG members.

Developing peer mentorship systems, where experienced SHG leaders guide others in borrowing and managing agricultural credit, would promote shared learning

Table 1. Sampling framework

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

Source: National Rural Livelihood Mission and Rural Development Office (Andaman and Nicobar Islands)

Table 2. Demographic profile of SHG women

Variables	Categories	Frequency	Percentage
Age group (in years)	Below 30	68	24.60
	30–40	102	37.00
	41–50	70	25.40
	Above 50	36	13.00
Educational level	No formal education	54	19.60
	Primary (1st–5th standard)	76	27.50
	Secondary (6th–10th standard)	88	31.90
	Higher Secondary and above	58	21.00
Marital status	Married	211	76.40
	Widowed	35	12.70
	Single/Separated	30	10.90
Household size	2–3 members	42	15.20
	4–5 members	158	57.20
	More than 5 members	76	27.50
Primary occupation	Agriculture/Livestock	113	40.90
	Non-agri labour	79	28.60
	Self-employment/Small enterprise	58	21.00
	No income-generating activity	26	09.40
Monthly household income (¹)	Less than ₹ 5,000	71	25.70
	₹ 5,001– ₹10,000	129	46.70
	₹10,001– ₹15,000	54	19.60
	Above ₹15,000	22	08.00
Years of SHG membership	Less than 3 years	84	30.40
	3–5 years	109	39.50
	More than 5 years	83	30.10

Source: Computed from primary data; N=276

Table 3. SHG participation profile

Variables	Categories	Frequency	Percentage
SHG Position held	Member only	186	67.40
	Treasurer/Secretary	54	19.60
	Rotational leader (once or more)	36	13.00
Frequency of group meetings	Weekly	92	33.30
	Fortnightly	113	40.90
	Monthly	71	25.70
Training received via SHG	Financial only	79	28.60
	Agricultural only	36	13.00
	Both financial and agricultural	94	34.10
	No formal training	67	24.30
Participation in group savings	Always contributes	224	81.20
	Sometimes contributes	39	14.10
	Rarely/never contributes	13	4.70
Loan taken via SHG (last 3 yrs)	Yes	201	72.80
	No	75	27.20
Loan purpose (if applicable)	Agriculture/livestock	89	32.30
	Non-agricultural business	54	19.60
	Health/Education/Home improvement	58	21.00
	Consumption or debt repayment	41	14.90

Source: Computed from primary data; N=276

Table 4. Financial empowerment indicators

Variables	Categories	Frequency	Percentage
Own bank account	Yes	246	89.10
	No	30	10.90
Knows how to operate account independently	Yes	184	66.70
	No	92	33.30
Decision-Making on loan usage	Decided independently	107	38.80
	Jointly with spouse/family	129	46.70
	Decided by others	40	14.50
Awareness of financial products	Savings account	211	76.40
	Credit/loan options	174	63.00
	Insurance (life/agriculture)	84	30.40
	Mobile banking/UPI	68	24.60
Financial confidence score (Self-rated)	Low (1–3)	76	27.50
	Moderate (4–6)	129	46.70
	High (7–10)	71	25.70

Source: Computed from primary data; N=276

Table 5. Detailed agricultural engagement of SHG women

Variable	Categories	Frequency	Percentage
Land ownership status	Own land	101	36.60
	Jointly owned (family/shared)	72	26.10
	No ownership (leased/informal access)	103	37.30
Size of landholding	Less than 0.5 acre	66	23.90
	0.5 – 1 acre	78	28.30
	1 – 2 acres	39	14.10
	More than 2 acres	17	6.20
	Not applicable (no land)	76	27.50
Type of crops cultivated	Vegetables (brinjal, chillies, okra, etc.)	84	30.40
	Pulses (green gram, black gram, etc.)	43	15.60
	Tubers (yam, sweet potato)	38	13.80
	Fruits (banana, papaya)	26	9.40
	Not engaged in crop cultivation	85	30.80
Purchase of agricultural inputs (past year)	Bought fertilisers	123	44.60
	Bought pesticides	91	33.00
	Bought seeds	138	50.00
	Did not buy any major inputs	67	24.30
Purpose of agricultural loan (if taken)	Crop production (seeds, fertilisers, labour)	67	24.30
	Livestock purchase or feed	51	18.50
	Equipment/irrigation	34	12.30
	Land preparation/lease advance	19	6.90
	Not applicable (no agri loan taken)	105	38.00
Decision-Maker for agricultural borrowing	Respondent herself	96	34.80
	Joint with spouse/family	118	42.80
	Family/others decided	62	22.50

Source: Computed from primary data; N=276

Table 6. Agricultural engagement and resource access

Variable	Categories	Frequency	Percentage
Primary role in agriculture	Labour/family assistance	102	37.00
	Own farming/livestock activity	87	31.50
	No agricultural involvement	87	31.50
Access to agricultural inputs	Through SHG network	74	26.80
	Through local markets	103	37.30
	No direct access	99	35.90
Training received in agriculture	Yes	94	34.10
	No	182	65.90
Type of agri activity supported by loan	Crop cultivation	51	18.50
	Livestock/poultry	38	13.80
	Farm equipment/tools	23	8.30
	Not applicable	164	59.40

Source: Computed from primary data; N=276

Table 7. Barriers to financial empowerment and agricultural participation

Barrier type	Agree	Disagree	Neutral/Not sure
Lack of formal financial training	189 (68.5)	48 (17.4)	39 (14.1)
Limited access to agri. credit	172 (62.3)	56 (20.3)	48 (17.4)
Geographical isolation	164 (59.4)	71 (25.7)	41 (14.9)
Family restriction on loan use	113 (40.9)	106 (38.4)	57 (20.7)
Low digital literacy	148 (53.6)	89 (32.2)	39 (14.1)
Lack of market linkages for produce	156 (56.5)	74 (26.8)	46 (16.7)

Source: Computed from primary data; N=276

Note: Figure in the parathesis represents percentage of the respective number

Table 8. Logistic Regression – Predictors of agricultural loan access among SHG women

Variable	B	S.E.	Wald	df	Sig.	Exp(B)
SHG position held	0.781	0.302	6.687	1	0.010	2.184
Land ownership	0.912	0.331	7.581	1	0.006	2.491
Decision-Making	0.643	0.287	5.017	1	0.025	1.902
Access to training	0.587	0.261	5.052	1	0.025	1.798
Education level	0.318	0.152	4.376	1	0.036	1.374
Income category	0.266	0.141	3.561	1	0.059	1.305
SHG savings member	0.503	0.276	3.319	1	0.068	1.654
Scheme awareness	0.706	0.298	5.625	1	0.018	2.026
Constant	-1.781	0.441	16.281	1	0.000	0.168

Classification Table

Observed	Predicted: No loan	Predicted: Loan	Percentage correct
No loan access (0)	112	28	80.00
Loan access (1)	35	101	74.30
Overall percentage			77.20
Nagelkerke R ²		Cox & Snell R ²	
0.307		0.228	

Source: Authors estimation based on primary data; N=276

Note: SHG position held (1 = Yes), Land ownership (1 = Own land), Decision-Making power (1 = Self), Access to training (1 = Yes), Education level, Income category (1 = Low, 3 = High), SHG savings member (1 = Yes), Scheme awareness (1 = Yes), (Dependent Variable: Agri loan access [1 = Yes, 0 = No])

and practical empowerment. Introducing simple digital tools, such as mobile applications for farm planning and financial tracking, could improve transparency and efficiency in SHG operations. Linking SHGs with buyers, cooperatives, or agri-tech platforms would enhance market access and ensure better returns on farm produce. Lastly, SHG performance would be better supported by NGOs through regular monitoring and evaluation of loan usage and agricultural outcomes to inform more targeted and effective interventions.

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