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ARTICLE

Challenges Faced by Self-Help Groups in Employment Generation in Bihar

Niharika Singh[1] · **Sudipa Majumdar**[1]

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Abstract

Self-help groups (SHGs) play an important role in providing microfinance services to the poor, along with building the functional capacity of the marginalised strata, and enhancing their employment and income-generating activities. The present study provides evidence of the impact of SHG-based financial interventions on labour market outcomes in Bihar. Bihar was the forerunner in the formation of SHGs in India, with more than 10 lakh SHGs that were run primarily by women. Therefore, Bihar provided an ideal setting for evaluation of the effectiveness of SHGs in transforming their savings into productive investments. The study used purposive sampling to collect primary data from three districts of Bihar, namely Aurangabad, Bhagalpur, and Katihar. Findings of the study indicated that the SHG members were inadequately informed of the services available to them and had little knowledge of their roles and privileges as SHG members. The sample SHGs in Bihar availed 100 per cent of their loans from commercial banks, who charged exorbitantly high rates of interest on the loans. Consequently, the SHG members availed loans in small amounts resulting in inadequate amounts to be translated into business promoting and income-generating activities. Using a difference-in-difference approach, the study finds that non-state-funded SHGs have been able to generate livelihood opportunities by providing overall financial services to rural women but when compared to the control group, where the SHGs were formed with state government initiatives, their average monthly incomes increased manifold at 99 per cent significance level. The present study has strong policy implications and recommendations. SHG members need to be adequately skilled to undertake micro-level entrepreneurial activities and eventually undertake long-term investments to generate employment.

Keywords Bihar · Employment · Microfinance · Self-Help Groups (SHGs) · Women empowerment

✉ Niharika Singh
niharika.eco@gmail.com

Sudipa Majumdar
sudipa.majumdar@sse.ac.in

[1] Symbiosis School of Economics, Symbiosis International (Deemed) University, Pune, India

1 Introduction

A Self-help group (SHG) is an association of people who have similar social and financial background, and are eager to improve their socioeconomic status. Each SHG is an informal group of 10 to 25 local rural women who become involved in undertaking small savings, which acts as an income-generating and employment-generating mechanism. SHGs have proved to be vital to improve livelihoods as well as social status and have been based on the mandate of empowerment, financial literacy, and employment generation. SHGs were formed to empower women, which would lead to their inclusion in society, creating greater social impact, and better decision-making. Over the years, there has been tremendous growth in the number of SHGs not only in India but in many Asian countries also.

The origins of SHGs can be traced to the Gramin Bank of Bangladesh, which was conceptualised by Mohammad Yunus, to provide loans mainly to poor women in order to promote self-employment. The SHG-based provision of credit was successfully adopted as a poverty reduction strategy in Afghanistan and Sri Lanka. India has adopted the Gramin Bank model, in the form of micro-credit delivery to Credit Management Groups (CMGs) which was later renamed as SHGs. The women of Maharashtra from Amaravati District had established an SHG long back in 1947, where women contributed 25 paise each to the group savings. Similarly, in Southern part of India, 'SADHAN', 'DHAN' foundation and 'ASA' worked to promote SHGs. The earliest SHG in India was started in 1972 with the Self-Employed Women's Association (SEWA) in Ahmedabad working with the poor and self-employed women in the informal sector, in terms of getting work, income, and food security. The path led by SEWA was then adopted by National Bank for Agriculture and Rural Development (NABARD) to sponsor women to become self-employed and gain access to work, income, and food security (Khaitan 2020). Finally, NABARD started promoting SHGs on a large scale when in 1993, the Reserve Bank of India (RBI) allowed SHGs to open saving accounts in banks and to avail the facility of bank services, which was a major boost to the SHG movement. The RBI issued guidelines, and they were actively promoted by NABARD all over the country. India has 119 lakh SHGs with 1419.44 lakh households covered by it (NABARD 2021-22). The Budget 2023 announced the formation of large producer enterprises to empower the SHGs under the Deendayal Antyodaya Yojana National Rural Livelihood Mission (DAY-NRLM), by supporting them in procuring raw materials, along with helping with design, quality, branding, and marketing of their products.

The basic philosophy of formation of SHGs was their microfinance scheme, which would give access to easy loans for the members, who are primarily women. This mechanism was expected to generate employment, enhance female labour force participation, and improve their livelihoods. Indian SHGs, in collaboration with non-governmental organisations (NGOs), used this as means to improve the social status of rural women by giving them financial powers. However, this was not the focus of earlier studies on SHG programmes around the world that have looked mainly into the health aspects of rural women in terms of

their improvements in food security and nutrition through their access to credits (Deininger & Liu 2013; Datta 2015); the role of women in decision-making and increased participation in household choices (Khanna et al. 2015); improvements in their overall civic life (Desai & Joshi 2014), etc. This paper, on the other hand, examines the role played by financial access through SHGs in the context of productive use of credit and the resultant income generation amongst the SHG members.

The present study based on a village-level primary survey was carried out in the state of Bihar. Bihar has the highest number of SHG members in India, with some of the oldest SHGs operating for more than 15 years. Therefore, one would have expected a sea change in rural employment in the state along with improved livelihoods and social status of the rural women. However, the basic SHG outcomes of income and employment generation seem to have been not so successful in Bihar, which remains the most backward state in India with the lowest Human Development Index (2019–2020). The motivating factor behind the microfinance scheme for the poor, therefore, has not been effective in Bihar, and this study delves into this anomaly, which has not been investigated in earlier studies. Moreover, the primary survey was carried out during March–April 2022, and aspects of investment decisions during the COVID-19 pandemic period have also been incorporated into this study, which make the results relevant and pertinent.

The present study, therefore, makes a significant contribution to extant literature on SHGs as well as on microfinance, by providing evidence of the impact of SHG-based financial interventions on labour market outcomes in Bihar. The format of the paper is as follows: Section 2 gives a background of SHGs in India and in the selected state of Bihar. Section 3 outlines the research methodology. Section 4 details our findings from the primary research, and Section 5 concludes the paper.

2 Background of SHGs

2.1 SHGs in India

The SHG members typically meet once a week to collect the savings money from the individuals, connecting them to banks, and loaning them money at low-interest rates. The group members usually save money for six months and once found creditworthy by a bank are allowed to receive a loan equal to four times the total savings of the group. Thus, the mechanism requires that each SHG member saves a minimum amount per week in a personal savings account held by the group so that the corpus, thus generated over a period of time, helps the SHG to become eligible to borrow loans.

SHGs in India typically follow hierarchical models. In the first model, banks play a pivotal role in forming the groups, opening their bank accounts, providing them with small bank loans, promoting their livelihood activities, and helping them repay the loans. In the second model, a facilitation agency was introduced, which would typically be an NGO or a government agency. The SHGs were then nurtured, educated and trained by these agencies, while they procured their credits directly from

the bank or through the agencies who act as intermediaries. About 70 per cent of SHGs are financed under this model.

SHGs have, therefore, played an important role in providing microfinance services to the poor (NCBI 2021) in India along with building the functional capacity of the marginalised strata and enhancing their employment and income-generating activities (VOICE 2008). The SHGs in India have had a significant influence on a variety of metrics relating to women's empowerment, their skill development, including administrative knowledge, financial literacy, and mobility (Bose et al. 2013; Deshpande & Khanna 2021).

2.2 SHGs in Bihar

According to the Government of India estimates of 2019, 33.7 per cent of the Bihar population is considered "poor" and of them, 22.1 per cent were categorised as "severely poor" (Economic Survey of India 2021-22). Bihar exhibits the lowest Human Development Index (Table 1) as 90 per cent its population lives in rural areas. One-third of the population of Bihar was below the poverty line with female literacy rate at 53.6 per cent and female labour force participation rate at 27.3 per cent (Table 2). Bihar ranked amongst the lowest in India in terms of every Sustainable Development Goal (SDG), only with the exception of SDG Indicators 5 (Gender Equality) and SDG Indicators 6 (Clean Water and Sanitation).

Despite being one of the most backward states, Bihar has led the way in formation and working of SHGs in India. According to the NABARD (2021 report, the state had more than 10 lakh SHGs that were run primarily by women

Table 1 The linkage of Bihar with SDGs

	Bihar score	Bihar rank	India score
Human development score (2019–20)	0.581	28th	0.645
Population below poverty line (%)	33.74	28th	16.40
SDG India Index (Overall)	52	28th	66
SDG Indicators 1 (No poverty)	32	28th	60
SDG Indicators 2 (Zero Hunger)	31	27th	47
SDG Indicators 3 (Good Health and Well-Being)	66	21st	74
SDG Indicators 4 (Quality Education)	29	28th	57
SDG Indicators 5 (Gender Equality)	48	16th	48
SDG Indicators 6 (Clean Water and Sanitation)	91	5th	83
SDG Indicators 7 (Affordable and Clean Energy)	78	24th	92
SDG Indicators 8 (Decent Work and Economic Growth)	50	25th	61
SDG Indicators 9 (Industry, Innovation, Infrastructure)	24	28th	55
SDG Indicators 10 (Reduced Inequalities)	48	25th	67
SDG Indicators 11 (Sustainable Cities and Communities)	67	20th	79

Source: Economic Survey of India (2020–21), SDG report (2020–21), Human Development Index (2019–20)

Table 2 Administrative profile of Bihar and India

	Bihar	India
Density of Population (per sq.km)—2022	1106	464
Sex Ratio (females per 1000 males)—2021	916	1020
Rural (%)—2021	88.71	64.61
Urban (%)—2021	11.29	35.39
Female Literacy Rate (%)—2021	53.57	70.30
Female Labour Force Participation Rate (%)—2021	27.3	37.5
GDP Per Capita (USD current prices)—2021	630	2,277.4

Source: Periodic Labour Force Survey (2020–21), Census (2011), State Economic Surveys (2020–21), National Family Health Survey 5 (2019–20), Microfinance of India Report (NABARD 2020–21)

Table 3 SHGs in Bihar

Total number of SHGs	10,03,148
Total number of SHG members	1,16,13,453
Amount disbursed to SHGs (lakhs INR) 2020–21	4,15,237.11

Source: Microfinance of India Report (NABARD 2020–21)

(Table 3). The age requirement for becoming members of SHGs was 18 years. They operated through a three-tier structure whereby the SHGs are overseen by the "Village Organisation" who further report to the tertiary "Cluster Level Federations". Therefore, it was imperative to carry out a case study of Bihar where SHGs should have presented the high degree of employment opportunities.

2.3 SHGs in Three Select Districts in Bihar

The present study involved primary survey carried out in the three selected districts of Bihar, namely, Aurangabad, Bhagalpur, and Katihar. Aurangabad is the aspirational district as per the SDG report (2020–21), and had the lowest population density amongst the districts surveyed. It ranks 21st in the overall ranking of the Aspirational Districts, and is one of the most improved districts with respect to Education (Rank 3rd). Bhagalpur had the lowest rural population, which was at 80 per cent, as against more than 90 per cent in the other two districts. It also had a high literacy rate of almost 80 per cent. The district of Bhagalpur is well known for its silk, especially Tussar and Bhagalpuri, which justifies its high per capita income. In complete contrast, Katihar was the most backward district amongst the three, which had only petty businesses but had the highest number of SHGs. The literacy rate in Katihar was only 52 per cent with more than 91 per cent of its population living in rural areas (Table 4).

Table 4 District-wise demographic profile

Districts of Bihar	Aurangabad	Bhagalpur	Katihar
Area (sq. kms)	3303	2569	3056
Total population	2,540,073	3,037,766	3,071,029
Males	1,318,684	1,615,663	1,600,430
Females	1,221,389	1,422,103	1,470,599
Rural (%)	90.7	80.2	91.1
Urban (%)	9.3	19.8	8.9
Total no. of SHGs	23,174	27,258	32,279
Total no. of HH (lakhs)	391,898	564,711	619,076
HHs per SHG	17	21	19
Population density	769	1182	1005
Total no. of villages	1742	1515	1547
Literacy rate	70.32	79.26	52.24
Per capita income (INR)	11,012	17,324	11,278

Source: Census (2011), NFHS 5; NRLM (2021)

3 Research Methodology

3.1 Sampling Methodology

The primary survey was carried out in the districts of Aurangabad, Bhagalpur and Katihar, wherein the blocks were selected based on the highest number of SHGs present in the particular district. A total of 10 SHGs were selected from villages across the 3 districts. These formed the experiment group where each of the 10 SHGs was not formed through state government initiatives. Details of the selection criteria for the districts and blocks covering the state are provided in Table 5.

Primary survey was conducted during the month of March and April 2022. Data were collected through questionnaires, interviews, and Focus Group Discussions (FGDs) with the members of SHGs. Interviews of the leaders of SHGs were conducted through semi-structured questionnaires. Separate interviews at unit level were conducted with members of the SHGs using structured close-ended questionnaires. Our final sample included 3 SHGs each in Bhagalpur and Katihar, and 4 SHGs in Aurangabad. The information regarding the SHGs operation, livelihood opportunities, and assessment of rural employment along with first-hand observation notes was made during these field visits. The results were tabulated for descriptive statistics. IBM SPSS, Excel and machine learning through R software have been used to analyse the collected data.

In addition, the study was carried out to evaluate the true impact of joining the SHG, in terms of changes in the income levels, employment levels and livelihoods of the members. To this end, the primary research was extended to include Control Groups, which comprised SHG members that were funded or formed through state initiatives. One such SHG was included from each of the three districts (Table 5), to carry out the comparisons using t-test for the significance of

Table 5 Sampling design for SHGs in Bihar

Districts	Bhagalpur	Aurangabad	Katihar
Blocks	Khareek Naugachia Bhagalpur	Jamhaur Madanpur	Hasanganj Manihari
Villages	Tulsipur Pakra Mirjanhat	Bharthauli Palakiya Ranikuan Madanpur	Bhagawadi Kumaripur Rasulpur
Experiment SHG Groups—Non-State Govt. Initiatives	Bina House Shiv Mahadev Jeevika Swayam Sahayta Samuh Savita House	Kanchan Swayam Sahayta Samuh Priya Swayam Sahayta Samuh Chanchala Swayam Sahayta Samuh Priyanka Swayam Sahayta Samuh	Sumaiya Swayam Sahayta Samuh Gareeb Nawaz Swayam Sahayta Samuh Dolly Swayam Sahayta Samuh
Total members—Experiment Groups	12	16	12
Control SHG Group—State govt. initiatives	Aajeevika Swayam sahayta samuh	Sonata Jeevika Swayam Sahayta Samuh	Gulshan Jeevika Swayam Sahayta Samuh
Total members—Control Groups	4	4	4

difference between paired sample means and finally using the difference-in-difference (DiD) methodology.

3.2 Difference-in-Difference

The DiD approach has been applied to groups that were exposed to a treatment or experiment in a certain period of time against others that are not. Therefore, DiD is used in impact evaluation studies, based on a combination of before–after and treatment–control group comparisons by assuming that there is a key outcome variable, which captures the change over time between the groups.

In our case, the experiment or treatment group comprised the SHGs which were neither funded nor formed through State government initiatives and the control group composed of SHGs formed through State initiatives. The experiment is assumed as joining the SHG and becoming a member. Any significant difference in the outcomes of the members after joining the SHG may be due to the working of the SHG, but also because there are key characteristics that differ between the experiment and the control groups. So, the DiD approach controls for these factors by undertaking a before–after study. In this study, the key outcome variable has been taken as the average monthly income of an SHG member. When we combine the after–before approach and the treatment–control group comparison, the after–before difference in the control group is deducted from the same difference in the treatment group (Wooldridge 2012).

We first calculate the difference in the mean of the outcome variable between the two periods for each of the groups, and then, in the second round, the difference is calculated between the differences calculated for the two groups in the first stage. This second difference measures how the change in outcome differs between the two groups, which is interpreted as the causal effect. Hence, in this research, the effect of the initiatives of non-state government-formed SHGs is identified by comparing the average monthly income levels after becoming SHG members, between the treatment groups versus the control group.

With two groups and two periods, the DiD estimate can be written as:

$$\text{DiD} = \left(\bar{y}_{S=\text{Treatment},\ t=\text{After}} - \bar{y}_{S=\text{Treatment},\ t=\text{Before}}\right) - \left(\bar{y}_{S=\text{Control},\ t=\text{After}} - \bar{y}_{S=\text{Control},\ t=\text{After}}\right) \tag{1}$$

where y is the outcome variable, the bar represents the average value and S represents the group, t is time.

With before and after data for treatment and control, the data are thus divided into the four groups and the above double difference is calculated. In an OLS framework, the DiD estimate is obtained as the beta coefficient in the following regressions

$$\begin{aligned}
&E(\text{Yist}|s = \text{Control};\ t = \text{Before}) = A_{\text{Control}} + B_{\text{Before}}\\
&E(\text{Yist}|s = \text{Control};\ t = \text{After}) = A_{\text{Control}} + B_{\text{After}}\\
&E(\text{Yist}|s = \text{Treatment};\ t = \text{Before}) = A_{\text{Treatment}} + B_{\text{Before}}\\
&E(\text{Yist}|s = \text{Treatment};\ t = \text{After}) = A_{\text{Treatment}} + B_{\text{After}} + \beta
\end{aligned} \tag{2}$$

where $E(\text{Yist}|s, t)$ is the expected value of Yist in population subgroup (s, t), which is estimated by the sample average ($\overline{Y}$ s, t). 'A's are treatment/control group fixed effects, 'B's capture the before/after fixed effects. Figure 1 illustrates how DiD estimate is constructed. If there are inherent dissimilarities between the treatment and the control groups, that would be captured in the difference in the 'before' stage between the groups. After undergoing the experiment, the difference between the groups is captured, which includes the changes over time due to the effect of the experiment, along with the inherent dissimilarities across the groups. The final impact of the experiment on the treatment group versus the control group is measured by the DiD estimate (β).

4 Findings

4.1 Field Observations of Villages Covered

Based on the field observations, Aurangabad was the only district (out of the three surveyed) that had proper road connectivity, fully functional market area, ongoing programmes on capacity building, and skill development for the SHG members. Majority of SHG women in Aurangabad had completed their education till the 10th grade and seemed to be inadequately informed about the services available to them. The SHGs totally relied on their revolving fund for their financial requirements. In contrast, the SHGs in Bhagalpur were less active with most of the having 10 members.

Katihar was observed as one of the most orthodox districts to be surveyed. The SHGs surveyed in Katihar belonged to lowest average income category, where many members did not have ration cards or proper houses to reside. They were mostly unaware of the government-led schemes. The fabric market in the village dealt in cotton materials and sarees that were active in serving the local districts as well as the neighbouring nations of Nepal and Bangladesh.

4.2 Descriptive Statistics

Seventy-two per cent of our total sample comprised villagers that were covered by the Below Poverty Line (BPL) Scheme (Table 6). The remaining 28 per cent, who were not covered by the BPL Scheme, also earned incomes that were below the poverty threshold, but they were deprived of the state benefits due to their lack of basic awareness of the benefit schemes. Most of the members (60 per cent) lived in *kutcha* or semi-*pucca* houses. This can be further linked to the loans availed and the purpose of the loans taken by the members.

Forty-eight per cent of the SHG members surveyed were self-employed working in small businesses and petty business shops. These shops were mainly in the form of ration shops and home-based small businesses like salon services, *papad* and pickle making, hay cutting, tailoring, and embroidery etcetera. In Bihar, 24 per

Table 6 Demographics of SHGs in Bihar (percentage)

Income	
Below poverty line	72
Above poverty Line	28
Housing	
Kutcha	28
Semi-*Pucca*	32
Pucca	40
Occupation	
Agriculture	20
Homemakers	24
Self-Employed	48
Unemployed	4
Others	4

Source: Primary survey

cent of them were home-makers, while another 20 per cent of the respondents were involved in agriculture.

A cross-tabulation of the education versus the reserved categories of the sample of SHGs (Table 7) reveals that the members belonging to Scheduled Castes (SC) in Bihar had never gone to school. The few graduates in Bihar belonged to the Other Backward Class (OBC). Half of the sample from the General category also had no education, while the other half had completed some level of schooling. Majority of the respondents in all the districts had only completed their education till 10th grade or less and were, therefore, inadequately informed of the financial services available to them as SHG members. Further, most of the SHG members in Katihar district were illiterate, with little knowledge of their roles and privileges as members of SHG.

4.3 Benefits of Joining SHGs

The primary reason for joining SHGs, as perceived by the respondents, was their easy access to loans, both from SHGs and from the banks, as was the case with

Table 7 Reserved categories of the members of SHGs versus education (in percentage)

	General	Other backward class	Scheduled caste
Never gone to school	50.0	27.8	100
Up to 5th class	16.7	27.8	
6–10th class	33.3	33.3	
Up to class 12th		5.6	
Graduate		5.6	
Total	100	100	100

Source: Primary survey

Table 8 Perceived benefits of joining SHGs (in percentage)

Perceived benefits of joining SHGs	SHG members
Ease of accessing loans	45
Self-confidence and decision-making	23
Financial literacy	20
Skill development	12

Source: Primary survey

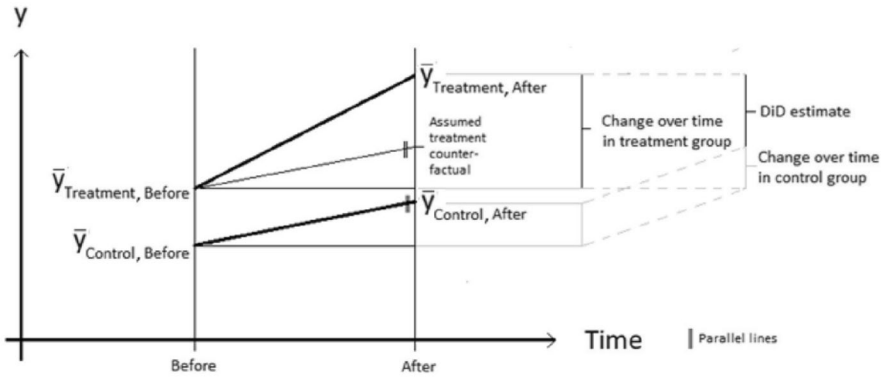

Fig. 1 Illustration of the two-group two-period DiD estimate. *Source*: Fredriksson and Oliveira (2019)

45 per cent of the respondents (Table 8). The main objective of the SHGs was to have bank linkage of all the members, and therefore, the SHG members individually linked their own bank accounts with their membership. The process also made the women financially literate and aware to implement decisions about their savings and investments, as was observed during the interviews and the FGDs and was expressed by 20 per cent of the respondents. It was also revealed by 23 per cent of the respondents that the financial awareness brought with it a sense of self-confidence and empowerment, even in household decisions and participation. Another 12 per cent of the members gained from the SHG with respect to their skill development, as members were found to use their credits to enhance their skill development. This was mainly found in the district of Aurangabad.

Majority of the SHG members surveyed also revealed that they did not have any prior savings before joining the SHGs and 44 per cent of members saw no savings even after joining the SHGs, except the mandatory contribution made to the monthly savings fund. On the other hand, a sizeable 28 per cent of the members reported saving above ₹1500 per month, and these respondents mostly belonged to the district of Aurangabad. This is an important revelation because a prime motivation and financial awareness related to regular contribution in the form of forced savings were attributed to their joining the SHGs. Our finding is in line with the evidence from the India NITI Aayog SDG report (2020–21) that categorises Aurangabad as an aspirational district, which has seen immense improvements in infrastructural facilities that was supported by of the state government.

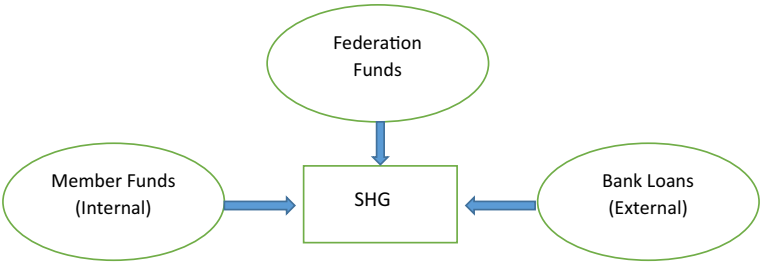

Fig. 2 Sources of funds for SHGs. *Source*: Author compilation

Table 9 Monthly savings by members after joining SHGs

Monthly savings	SHG members
Reported nil savings	44
Up to ₹500 per month	12
₹501-₹1000 per month	8
₹1001-₹1500 per month	8
Above ₹1501 per month	28
Total	100

Source: Primary survey

4.4 Sources and Uses of Credits

SHGs typically source their funds from three channels: (i) SHG internal funds from the member savings; (ii) loans from SHG-NGO federations; and (iii) external bank loans (Fig. 2). In Bihar, the SHGs availed 100 per cent of external loans from commercial banks. This was a major challenge, as the rates of interest provided by the banks were very high and unaffordable. Therefore, the SHG members were largely dependent on internal loan funds of the SHG member savings or the federation funds. Majority of SHG women had only completed their education till 10th grade and were inadequately informed of any other financial services except availing loans as SHG members.

Most of the SHG members in Bihar had availed loans only up to ₹20,000 (Table 9). The rates of interest at which the loans were procured were very high in Bihar, as they availed loans through commercial banks. The highest interest rates were as high as 21–25 per cent, which was being paid by 44 per cent of the SHG members in the state. The average loan per member interviewed in Bihar was ₹28,640, while the average loan per SHG was ₹79,556. It was observed that years of association with a particular SHG has no effect on the amount of loans availed by a member. Therefore, as can be seen from the data, despite being associated with their respective SHGs for more than 5 or 10 years, the highest percentage of loans availed in Bihar were only up to ₹20,000.

We also investigated whether the amount of loan availed was driven by the number of dependents in the household. The number of dependents in the household of

the 3 selected districts ranged from zero to eight, the modal group being 1–2 dependents in the family. Most of the loans availed by the families, with 1–2 dependents, ranged up to ₹20,000. The loan amounts of ₹20,001 to ₹40,000 were mostly taken by the members who had 3–4 dependents in their households. Thus, there was a clear positive correlation whereby higher the number of dependents larger were the loan amounts.

When we probed the respondents about the uses of their loans availed, their responses were strongly influenced by the impact of the COVID-19 pandemic. Healthcare and medical bills attained the highest priority, which was a temporary phenomenon. It was noteworthy that the second highest usage of SHG loans was for the education of their children. This indicated the increased awareness towards educating the next generation, and this has been perceived as a long-term investment. The COVID-19 pandemic also had indirect influences since loss of jobs prompted the respondents to start their own petty business shops (16 per cent).

4.5 Changes in Average Monthly Incomes

Finally, data on the average monthly income levels of the SHG members were collected, both before and after becoming members of their particular groups. The DiD analysis was applied as an inferential statistic to determine whether there is a significant difference between the average monthly income level of the members who joined the SHG under non-state initiatives. The control group comprised SHG members who were funded or supported by state government initiatives. The DiD analysis is carried out both for the before–after as well as the experiment–control groups (Table 10).

Table 11 shows that there was no significant difference between the control and the experiment group before they joined the SHGs as they were earning an average of ₹2778 and ₹2452, respectively, per month. For the experiment group, which was not formed under the state initiative, their average monthly incomes increased from ₹2452 to ₹4524, after becoming members of the SHGs, and the increase was significant at 95 per cent confidence level. Our study, therefore, finds that even the non-state-funded SHGs have been able to generate livelihood opportunities by providing overall financial services to rural women and enabling an ecosystem for raising their standard of living (Table 11).

However, when we consider the control group, where the SHGs were formed with state initiatives, we find that their average monthly incomes increased manifold from ₹2778 before joining the SHG to reach ₹10,444 after becoming SHG members. The increase was significant at 99 per cent level of confidence. This could be traced to the correlation between the loans received and the association of the members with their respective SHGs. For the experiment groups of the non-state-led SHGs, the number of loans received was positively correlated to the years of association with an SHG, whereas there was no such correlation in the control groups where members who required credit received the loan irrespective of their joining year. The increase in the income of the state-funded SHGs was majorly due to the support, which they received from the state government, since these SHGs were a

Table 10 Sources and uses of loans by SHG members

	SHG members
Interest rates	
1–10%	8%
11–20%	48%
21–25%	44%
Average amount of loan	
No loan	16%
₹1–₹20,000	48%
₹20,001–₹40,000	20%
₹40,001–₹60,000	8%
Above ₹60,000	8%
Average loan per member	₹28,640
Average loan per SHG	₹79,556
Uses of loans	
Medical and healthcare	56%
Children's education	48%
Marriage/Social functions	40%
Agriculture	32%
Construction of house	24%
Personal/Household consumption	24%
Starting petty business	16%
Other miscellaneous uses	16%

Source: Primary survey

Table 11 The difference-in-difference estimation results for average monthly income

Outcome variable	Sample means	Sample means	*t*-statistic	$P>\|t\|$
Before joining SHG	Control group	2778		
	Experiment group	2452		
	Difference	−326	0.16	0.870
After joining SHG	Control group	10,444		
	Experiment group	4524		
	Difference	−5920	2.98	0.004***
Experiment group	Before joining SHG	2452		
	After joining SHG	4524		
	Difference	−2072	2.06	0.0171**
Control group	Before joining SHG	2778		
	After joining SHG	10,444		
	Difference	−7666	2.31	0.000***
Difference-in-difference		−5594	1.99	0.051*

DiD analysis was carried out using STATA software

***indicates significance at 99% level

**indicates significance at 95% level

*indicates significance at 90% level

part of Bihar Rural Livelihoods Promotion Society State Rural Livelihoods Mission, Bihar, known as 'JEEViKAs'.

The resulting DiD analysis, taking into account the before–after as well as the experiment–control group differences, reveals a significant difference between the groups at a 90 per cent level of confidence. This result is of great importance to our study since it shows that the SHGs that were formed with state initiative fared significantly better than those that were operating without any state-led initiatives. The result has important policy implications and recommendations for all stakeholders.

5 Conclusions and Recommendations

SHG is an informal group of 10 to 25 local rural members, primarily women, who undertake small savings to form a corpus that acts as an income-generating and employment-generating mechanism. SHGs avail loans against their corpus to enhance their investments in improving their livelihoods as well as socio-economic status, in terms of their empowerment, financial literacy and employment generation. Earlier studies on SHG evaluations have focused either on health aspects, women nutrition, leadership development, decision-making, etcetera. This paper makes a significant contribution to the existing literature by investigation the impact of non-state-funded SHG-based financial interventions in one of the most backward states of India, Bihar, as Jeevikas (state funded SHGs) has been successful in Bihar A village-level primary survey was carried out in Bihar to evaluate whether the non-state-led SHG program has enabled rural women to generate productive investment for future stream of income, employment and improved livelihoods.

Seventy-two per cent of the sample respondents were below the poverty line. They were inadequately informed of the financial services available to them as SHG members and had no awareness of their roles and privileges as members of SHGs. Although most members had joined the SHGs for an easy access to loans, 44 per cent of members did not witness any savings after joining the SHGs, except the mandatory contribution made to the monthly savings fund. However, it is clear from the purpose of using the SHG loans that most were taken for consumption purposes. It also highlights the fact that this mandatory monthly savings helped the SHG members to avail small loans from their internal corpus and, thereby, avoid external debts.

Our key finding was that the surveyed SHG members availed 100 per cent of their loans from commercial banks, which emerged as a high barrier against the improvement of livelihoods in Bihar through the SHG formation. The SHG members could only afford loans in small tranches of ₹20,000, which was clearly not adequate to drive any entrepreneurial activities. The basic philosophy of the creation of SHGs for income and employment generation purposes was not being successful in Bihar, which remained the most backward state in India with the lowest Human Development Index, despite having the highest number of SHG members and with some of the oldest SHGs operating for more than 15 years. The SHG members were availing small loans for education/health/household purposes without having to pay exorbitant rates to money lenders. Although the SHG mechanism has not been able to pull

their members completely out of poverty, they have provided them the sources of internal and external channels of loans.

In the absence of easy or high interest loans from banks, other financial avenues have to be made available to the SHG members. There is an urgent need for the commercial banks in collaboration with the State Government of Bihar to innovate and design new affordable financial products for these rural groups, especially for encouraging their entrepreneurial and livelihood enhancing ventures.

SHG members should be able to avail adequate financial support like grants, term loans, cash credit, crop insurance, working capital, revolving funds to name a new. NABARD Financial Services Limited (NABFINS) was set up by NABARD to provide grants for institutional capacity building and to improve the organisational and financial management of SHGs. Although NABFINS started its operations in 2009, its coverage remains extremely low in Bihar. In Columbia, FUNDAEC provides loans to applicants after they successfully complete their training programme and provides an example that could emulated in India. Earlier, the Integrated Rural Development Programme (IRDP) was launched in 1978–79 to provide income-generating assets to the rural poor, along with Training of Rural Youth for Self-Employment (TRYSEM) to provide technical skills in agriculture and allied activities. On the successful completion of training, the youth could receive subsidy and institutional credit under the IRDP. However, the implementation of the training was uneven across states and lacked proper skills of finance, strategy, ethics, leadership required for self-employment ventures. After two decades of its launch, TRYSEM was merged into the Swaranjayanti Gram Swarozgar Yojana (SGSY) in 1999, which now aims at providing self-employment through SHGs. In complete contrast, adopting the FUNDAEC approach would involve knowledge generation while working with the entrepreneurial women, to cater to their particular needs and eventually helping them to become financially and socially empowered.

Private sector support, corporate social responsibility (CSR) activities, international funding, multilateral bank support, etcetera., could also go a long way in supporting employment generation amongst the rural women.

Along with the financial support, any entrepreneurial activity through petty businesses would also require basic financial literacy, business planning, operations strategy to carry out any feasibility analysis of their venture. The stakeholders (NGOs, private institutions and the Government) also need to provide adequate technical, organisational and infrastructural support to the SHGs both in production and in marketing of their products. To this end, the Livelihood and Enterprise Development Programme (LEDP) was launched by NABARD in December 2015 to provide training for skill building, handholding, and escort support to SHG members. However, the impact of LEDP in Bihar remains limited to a few. Small successful documentaries should be created to showcase successful cases in local languages through development communication. Rigorous and consistent awareness campaigns have to be conducted in the villages so that the SHG members become aware of their rights and privileges that are available to them through the various central- and state-level schemes. Private sector support, CSR activities, international funding, multilateral bank support should be given to SHGs so that they can have a better competitive advantage. Simultaneously, the rural women need to undergo specialised training

on climate change, clean energy, disaster management, etcetera. This would lead to consciousness of members regarding of funds, in line with financial and environmental sustainability.

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Declarations

Conflict of interest The authors have no conflicts of interest to declare.

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