



An Impact Evaluation Study of Self-Help Groups in Meghalaya

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Report Submitted to Meghalaya State Rural Livelihood Society (MSRLS),
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Foreword

We started our journey as a registered Society under the Meghalaya Society Registration Act XII of 1983, and we were designated as the Nodal Agency for implementing National Rural Livelihoods Mission in Meghalaya. MSRLS roll out the NRLM Programme in November 2014 in 3 Districts viz: West Khasi Hills, West Garo Hills and South West Khasi Hills Districts covering 4 Blocks. With the sincere effort of the team, we are now operating in all the 11 Districts and 46 Blocks of Meghalaya and the number of SHGs mobilised is 35000.

The aim of the Society is to provide poor women a platform for collective action, through promotion of affinity group on the principle of self-help and mutual cooperation, facilitate and build linkages for these groups, with mainstream financial institutions and Government departments to address the multi-faceted dimensions of rural poverty.

In order to understand the impact of the programme at the grassroots level, the study was conducted to assess the efficiency of the SHG formed under NRLM. The study aims to quantify data, to provide the organisation with inputs to make changes or course correction, if required, for better output. Moreover, the Study was also helpful in identifying the spectrum of self-employment opportunities and other initiatives secured by the NRLM (National Rural Livelihood Mission) beneficiaries as compared to non-NRLM beneficiary household.

It is envisaged that the finding in the study, will help stakeholders and functionaries of MSRLS to evaluate their intervention towards poverty alleviation through the SHG network. The journey during 'MSRLS SHG Impact Evaluation Study' has been an interesting one with continued support and useful insights from the CDFI team in coordination with KREA research Team. We intend to carry out further study in the future, to better understand the impact of our intervention on the ground.



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Executive Summary

This report presents the findings of the impact evaluation of the National Rural Livelihoods Mission (NRLM) implemented by the Government of Meghalaya through Meghalaya State Rural Livelihood Society (MSRLS) in Meghalaya. NRLM, a rural livelihood mission, is a flagship program of the Government of India aimed at harnessing the capabilities of the rural poor in enhancing their livelihoods and reducing poverty. MSRLS, the nodal agency for implementing NRLM within the state has been working towards financial inclusion and livelihoods of the rural poor through formation of women's Self-Help Group since 2014.

Objectives

The main objective of this study is to examine the effect of the program on the livelihoods and economic welfare of the rural households. Another objective is also to analyze the performance of the SHGs and VOs in different regions. For this purpose, we analysed: (a) the impact of the program on the household's socio-economic conditions on parameters such as savings, loan, income, self-employment businesses, assets portfolio among others; (b) performances of SHGs and VOs on the panchasutra, loan utilization and bank linkage; and (c) the evolution and progress of SHGs and VOs since inception of the program.

Methodology and Data

The study adopted quantitative method to analyze the impact of the program. Cross-sectional data was collected from the SHGs, VOs, SHG households and non-SHG households of Meghalaya for the time period from September 2018 to September 2020. The survey data collection took place during the period of December, 2020 - April, 2021.

The study followed a multi-stage stratified sampling strategy for selecting a representative sample. For the study, 550 SHG households (program households) and 1,103 non-SHG households (non-program households) were selected and surveyed across various parameters such as household income, expenditure, savings and loan details, asset portfolio and livelihood diversification. The survey sample for household's survey was divided into one treatment and two control groups. Treatment group comprises 550 SHG households. Control group I comprises 552 non-SHG households from intervention villages and control group II comprises 551 non-SHG households from non-intervention villages. We also conducted survey of 110 SHGs and 55 VOs for comparative analysis of performance of SHGs and VOs among the three regions of Meghalaya. We used Propensity Score Matching (PSM), a quasi-experimental, retrospective method for assessing the impact of the program.

Findings

Progress of SHGs and VOs

SHGs and VOs have been formed in all the districts and blocks of the state. SHGs have been formed in 5265 villages (approximately 75% of the total villages) in Meghalaya covering 3.336 lakhs households.

Over 33,000 SHGs have been formed out of which 68.6% SHGs have received start-up fund and 62% have received Revolving Fund. Out of the 1744 VOs formed, 93.27% have received start-up fund and 90.3% have received Community Investment Fund. Focus on formation of CLFs has just started in 2020-21 for strengthening the institution. Since the inception of the program, the total amount of savings mobilized in the SHGs from its members is INR 2306 lakhs until 2020-21 starting from INR 1 lakh in 2014-2015.

Household Level Impacts (Treatment and Control II)

Savings

The survey reveals that there are no statistically significant differences in the amount of formal and total savings of the households. However, the share of formal savings in total savings of program households is 14.46% more than the non-program households. We also see that percentage of program households saving in the formal sources (for example, SHGs, banks etc.) and practicing savings as a habit are 20% and 5% more than the non-program households respectively. There is a strong preference of program households towards savings in the formal sources.

Expenditure

There is no difference in the per capita and total expenditure of program and non-program households. However, we do see the preference of program households to spend 3.52% more on food expenditure and 1% more on their health expenditure as compared to the non-program households.

Loan

The major impact of the program can be seen in the loan taking behaviour of the program households. The percentage of program households taking a loan and a formal loan is 36% and 40% more than the non-program households respectively. The average number of loans taken by program households (0.62) is 0.44 more than the non-program households (0.18), including the households who have not taken any loan. Also, the share of formal loans of program households

is 34% more than the non-program households. 64% of the loans of program households are borrowed internally from SHGs. However, the average size of formal loan of program households is 86% (INR 88763) less than the non-program households. Requirement of collateral and co-signer for getting a loan is lesser for program households. Utilization of loan for medical and livestock purpose is seen to be 20% and 19% more respectively for the program households compared to non-program households.

Enterprise, Livestock and Agriculture

No significant difference is observed between the program and non-program household in most of the indicators in case of enterprises. No differences can be seen in the non-farm non-factory and non-farm factory enterprises of both the group of households. However, capital borrowings in the past two years have been three times more by the program households than the non-program households. Program households have on an average three times the number of pigs than the non-program households. Percentage of households with no livestock is 13% higher in the non-program households. Program households grow 16% and 35% more number of crops and rabi crops respectively than the non-program households, in spite of program households having less farming land.

Intra-household Bargaining Power of Women

Coming to women's empowerment, no significant difference is seen in the women's bargaining power but husband's bargaining power is 2% less in the non-program households than the program households. The two possible reasons could be; first, Meghalaya is a matrilineal society where a significant number of women earn and feed the family members and second, the money given in the game was hypothetical. We also don't find any significant differences between the number of livelihoods for male and female in a household.

Income

Program households have 0.27 (8.15% more) additional sources of income than the non-program households which are predominantly reflected by preference of program households towards practicing agriculture and livestock as a source of income. Impact of the program is seen on livestock income mainly; program households earn 145% (INR 2850) more than the non-program households.

Regional Analysis of Self-Help Groups and Village Organizations

Self-Help Groups

Regional comparative analysis is done in the three regions of Meghalaya, i.e., Garo, Khasi and Jaintia Hills. We find that panchasutra is practiced by SHGs in all the three regions of Meghalaya efficiently. Book of accounts is prepared weekly in Khasi and Jaintia hills but the performance of Garo hills is comparatively quite low. SHGs are not involved significantly as a group in income generating activity. Implementation index results shows that implementation in all the three regions has been done efficiently.

Initially, when the SHGs were formed in these regions their savings per member was very less but over the years they have increased savings substantially. SHGs as a group are focusing on increasing savings internally in the group so as to ensure that overall internal lending in the group increases. Average number of bank loans received per SHG is 0.3, 0.5 and 1 in Jaintia, Garo and Khasi Hills respectively. SHGs who have applied at least once for a bank loan in Jaintia, Garo and Khasi Hills are 30%, 57% and 65% respectively. Out of those who have applied 75% in Jaintia Hills, 81% in Garo Hills and 97% in Khasi Hills have received bank loan and in the state 90.6% have received loan. Average amount of bank loan received per SHG is less than 50 thousand rupees in Garo hills. We see that on an average a member of SHG has taken 29.7 thousand and 30.6 thousand rupees loan in Jaintia and Khasi hills respectively whereas in Garo hills the amount is just 11.5 thousand rupees.

Village Organizations

Book of accounts and basic adherence norms of VOs is quite efficiently in Meghalaya. Like SHGs, VOs are also not involved much in income generating activity. The average number of loans given by a VO to SHG is 1.44 loans in Khasi and Jaintia hills but the number is just 0.7 loans in Garo hills which is quite less. The average number of loans given by a VO to SHG in the state is 1.18 loans.

Conclusions and Recommendations

These results show that the primary objective of the program in inducing savings habits and loan taking behavior has been achieved to a great extent. SHGs gave their beneficiaries the opportunity to obtain loans which they would have otherwise been unable to access in the absence of the SHG program. One of the interesting findings of the study is the greater number of program households

practicing agriculture with a greater crop diversity than the non-program households in spite of having lesser agricultural land. Also, there is no difference in the agricultural income of program and non-program households. High utilization of loan for livestock purpose has shown positive results in the livestock income of the program households. Livestock income of the program households is significantly higher than the non-program households. Also, a greater number of program households practice livestock as a source of income compared to non-program households.

However, there is a need to increase SHG bank linkage in the state. The SHG bank linkage will result in an increase in the loan sizes of the members leading to positive changes in the income and productive assets holdings of the program households. Due to the remoteness of Garo hills, the region needs specific focus on increasing the financial activity of the households.

We however see limited impact of the program on the entrepreneurial activity, which is one of the objectives of the program in order to provide access to gainful employment to rural poor households. Entrepreneurial activity can be encouraged through dedicated training modules for entrepreneurship through the RSETI and community cadre for livelihood support. Enhancing entrepreneurial activity is a next level challenge and hence will require targeted initiatives to achieve results. Also, push on enterprise should acknowledge and take into account and align with local population preferences as this will result in greater visibility and outcomes for the program. For example, in Meghalaya people have shown greater inclination to livestock as compared to enterprise activities.

The SHG program in the current form may not be able to achieve some of the broader goals of the NRLM program and this also has to be acknowledged. This also indicates a resources allocation issue for SHGs as they work on diverse set of goals under NRLM.

1. Introduction

The Deen Dayal Antyodaya Yojana – National Rural Livelihood Mission (DAY-NRLM) is a poverty alleviation project initiated by the Ministry of Rural Development, Government of India, in June 2011. Its Mission is to harness the potential of the rural poor and equip them with capabilities, thus enabling them to actively participate in the economy of the country. To fulfil its broader mission, different initiatives to move towards a demand-driven strategy enabling the states to formulate their own livelihood-based poverty reduction action plan, is at the core of its Mission. NRLM has set out with an agenda to reach out to 7 crore rural poor households across 6 lakh villages in the country through self-managed Self-Help Groups¹ (SHGs) and federated institutions and support them for livelihood collectives in a period of 8-10 years.² NRLM aims to fulfil its objective of Universal Social Mobilization by engaging at least one-woman member from each rural poor household into SHGs and federating them at various levels. Therefore, much emphasis is laid on continuous capacity building, facilitation of micro-level plans, and enabling implementation of livelihood plans by granting access to financial resources from institutions within and from the Banks.

In 2014, the Government of Meghalaya also implemented NRLM in its state through Meghalaya State Rural Livelihoods Society (MSRLS), the nodal agency for implementing NRLM within the state. This Mission was implemented with the core belief that the rural poor have the strong desire to come out of poverty and also have the innate capabilities to do so. Since its implementation MSRLS has been working towards inclusion of the poorest and promoting them towards self-dependence and community self-reliance, through planning, continuous capacity building, enhancing and expanding existing livelihoods, and nurturing self-employment for micro-enterprises. In the past 6-7 years, the Programme has reached over to 46 Blocks across 11 Districts in Meghalaya. As of March, 2021 more than 3,33,660 poor households have been mobilized into over 33000 SHGs and 1198 Village Organizations (VOs) have been formed.³ These SHGs and VOs are assisted with access to affordable financial services through the Community Support Fund and thus serve as suitable institutional platforms for promoting livelihoods of the rural poor.

To fulfil its primary mission of enabling rural poor households to have access to gainful self-employment and inducing financial activity in them, MSRLS has been transparently investing through different approaches and guiding principles in fulfilling its mission and core values. A pertinent question that needed to be answered is on the impact of NRLM intervention by MSRLS at the grass root level. And therefore, an assessment on the successful implementation of the Mission was needed.

¹ Self Help groups are SHGs are small informal group of individuals (women), who are homogenous with respect to social and economic background and come together voluntarily for promoting savings habit among members and for a common cause to raise and manage resources for the benefit of group members

² From the Aajeevika website of government of India, <https://aajeevika.gov.in/en/content/welcome-deendayal-antyodaya-yojana-nrlm>

³ Based on the MIS data provided by MSRLS

1.1 Community Funds under DAY NRLM⁴

Deendayal Antyodaya Yojana- National Rural Livelihoods Mission (DAY-NRLM) provides Community Funds such as Revolving Fund and Community Investment Fund as resources in perpetuity to the institutions of the poor, to strengthen their institutional and financial management capacity and build their track record to attract mainstream bank finance.

1. Start Up or Establishment Funds:

All SHGs formed and adopted by MSRLS having Bank Account are eligible for Start-Up Fund @ of Rs 2500/- per SHG. SHG through the Block Mission Management Unit shall propose the Start Up fund through online mode in NRLM MIS portal. Start Up fund will be released directly to the SHG's Saving Bank Account

2. Revolving Fund to SHGs:

All SHGs formed and adopted by MSRLS are eligible for Revolving Fund of Rs 10000 – Rs. 15000/- per SHG. An SHG after attaining the age of three months will have to be graded by the Block Mission Management unit on the five principles (Panchasutra), that is, Regular Meeting, Savings, Internal Lending, Repayment and timely maintenance of proper Books of Accounts. SHGs graded A & B will be eligible for Revolving Fund

3. VO Start-Up Fund:

All Village Organization formed by MSRLS are eligible for Start-Up Fund @ of Rs 75000/- per VO to be released in instalment basis. A VO after opening a Bank Account can propose for Start Up fund through the Block Mission Management Unit through online in the NRLM MIS Portal. District after receiving the proposal will verify the Savings Account of the VO in the MIS Portal and release the Fund directly to the Savings Bank Account of the VO.

4. Community Investment Funds:

SHGs who have attained the age of six months and are adopting the Five Principles, following good management and financial norms and proper use of Saving and Revolving Fund, need to be supported further with provision of CIF after preparing Micro-Credit Plan (MCP), for enlarging their opportunities for livelihoods and various social needs. CIF will be provided as loan to "SHGs routed through the Village Organization" @ Rs 1, 10,000/- to be released in instalment basis.

5. Vulnerability Reduction Fund:

VRF is a fund (corpus fund) given to Village Organization to address vulnerabilities faced by the household(s) or community such as food insecurity, health risk, sudden sickness/hospitalization, natural calamity, etc., which are not addressed through CIF and RF. The purpose of VRF is to address the special needs of the vulnerable households including non-members of the SHG in the VO geographical area. It can be used for an individual need or for collective action. **Fund may be given to SC/ST/Particularly Vulnerable Tribal Groups (PVTGs)/areas with specific vulnerabilities on a priority basis.** VRF is release to VOs which have attained 6 Months old and above adopting five principles, received start-up fund, Community Investment Fund, having functional Sub-Committees, VOs should have prepared the Vulnerability Reduction Plan, should submit the VRF Proposal along with VO EC resolution to BMMU for the release of VRF from the Mission. VRF will be released to VO account directly by the Mission @ Rs. 1, 50,000/-.

⁴Based on Aajeevika website <https://aajeevika.gov.in/en/content/components/financial-inclusion>, and information received from MSRLS

1.2 Objectives of the Study

The overall objective of the study is to measure the impact of NRLM program on the SHG households of Meghalaya through the formation of the SHGs. The specific objectives are as follow:

1. To examine access to credit and savings from formal institutions and changes in the level of financial activity
2. To investigate the impact of Self-Help Groups on income, expenditure and asset portfolio of the beneficiaries.
3. To measure the impact of the program on different self-employment and dependence initiatives secured by the NRLM beneficiaries
4. To assess the changes in the bargaining power of women within the household due to SHGs
5. To assess the utilization of Community Support Fund by VOs and SHGs in the different regions of Meghalaya
6. To compare the performances of SHGs and VOs in the different regions of Meghalaya

1.3 Limitations of the Study

The study has few limitations. Firstly, the study uses cross-sectional data due to the unavailability of baseline data, thereby limiting the changes in the household level information over the period. Secondly, qualitative tools are not used in the study apart from a semi-structured interview with the MSRLS officials. Qualitative data helps in triangulating quantitative findings. Thirdly, the length of the questionnaire has been kept optimum to ensure engagement and quality response from the households. Due to this, expenditure and assets sections have been shortened and convergence of governance program and remittances (migration) income data sections have not been included.



2. Sampling Method and Methodology

The data of the study was collected from the Self-Help Groups, Village Organizations and Households done in all the 11 districts of Meghalaya. Survey data collection took place during the period of December, 2020 - April, 2021. The household survey was done across three groups. First, treatment group households who are the members of SHGs. Second, control group I households who are the non-members from the intervention villages. Third, control group II households who are the non-members from the non-intervention villages.

The study followed a multi-stage stratified sampling strategy at the VOs, SHGs and household's level for selecting the treatment group. Due to the nature of rollout of the program, the institutions were not evenly distributed in the state so selection of the samples through stratified sampling at each level of VOs, SHGs and households was more feasible. Inclusion and exclusion criteria of selecting the sample was based on the maturity of the institutions i.e., above 2 years for the SHGs, VOs and households.

2.1 Selection of VOs, SHGS and Treatment Group

Stage 1: We first selected 55 VOs from the list of 264 VOs which were above 2 years of age. Proportion of VOs in each district with respect to total 264 VOs is calculated and then the VOs are selected randomly in each district from the proportion.

Stage 2: Out of the selected VOs, selection of 110 SHGs was done which were above 2 years of age. Proportion of SHGs in each selected VO to the total SHGs in all the VO selected is calculated and then the SHGs are selected randomly in each VO from the proportion.

Stage 3: Similarly, 550 SHG households are selected from the 110 SHGs.

2.2 Selection of Control Group

552 Control group I households were selected from the program area villages of the 55 VOs. Control group I is selected as proportion of number of non-members in the particular VO village to the total number of non-members in all the selected VO villages. Based on the proportion, the non-members are selected from those villages randomly out of the total non-members.

Table 2.1: Region Wise - Sample Distribution of VOs, SHGs, Treatment and Control Group I

Hills	Districts Selected	Blocks Selected	Villages	VOs	SHGs	Treatment Households	Control I Households
Khasi Hills	4	7	37	27	59	288	283
Garo Hills	5	6	29	22	38	192	240
Jaintia Hills	2	2	6	6	13	70	29
Total	11	15	72	55	110	550	552

2.3 Selection of Control Group II

Control group II household selection was done from the non-intervention villages. Since, no blocks remained where the intervention has not entered, hence the 18 blocks with intervention of less than a year were selected. 72 villages with no intervention were selected in these 18 blocks and then 551 households were selected out of the selected villages. The selection is done by first calculating proportion of non-intervention villages in a block to the total number of non-intervention villages in all the blocks and then selecting villages randomly from the proportion. Thereafter, the household selection was done randomly from the selected non-intervention villages.

Table 2.2: Districts Wise – Sample Distribution of Control Group II Households

Districts Selected	Blocks Selected	Villages	Control II Households
East Jaintia Hills	1	2	15
East Khasi Hills	7	15	115
North Garo Hills	2	8	64
South Garo Hills	1	6	44
South West Garo Hills	1	6	48
West Garo Hills	5	32	242
West Jaintia Hills	1	3	23
Total	18	72	551

2.4 Survey Design

The survey data in our study is a cross-sectional data collected for a period of two years September, 2018 – September, 2020. Three comprehensive modules were developed for data collection: household, SHG and VO module.

2.4.1 Household Survey

The household survey was administered at the household level from the most knowledgeable person of the household and game section from the husband and wife of household. The survey had 10 different sections: household basic profile, household composition, SHG details (only for treatment group), savings and loan habit, household income, expenditure, self-employment business, assets, access to basic resources (proximity) and intra household bargaining power game.

2.4.2 SHG and VO Survey

The survey of SHG and VO was canvassed to understand the utilization of community support funds by the SHGs and VOs. The SHG survey recorded data on Panchasutra adherence, book of accounts, loan distribution through various sources like community investment fund, revolving funds, internal savings. It had a separate section on SHG-Bank Linkages. The survey also canvassed data on individual loans given to the members including questions on amount of loan, purpose of loans, interest rate, payment done till date etc. Similarly, the VO questionnaire had questions on loan given to SHGs, utilization of community funds given to VO like vulnerability reduction fund, community fund. The questionnaires also had questions on VO-bank linkages. The main purpose of SHG and VO questionnaire was to undertake a comparative analysis of the three regions of Meghalaya: Khasi Hills, Garo Hills and Jaintia Hills.

Table 2.3: Household Survey Module

Section	Section Description
Household Basic Profile	The section contains information on household's area of residence, HHs head, caste, religion, number of household members and mobile number
Household Composition	Member level details in this section is collected on education, age, gender, migrated or not, occupation, having bank account or not, NRLM member or not, having Aadhar card or not
Self-help Groups (only for TG)	The section includes questions for women of the HH who are SHG members on role in SHG, motivation to join SHG, additional support needed, problems in SHG, frequency of SHG meeting, savings and amount saved in SHG.
Savings and Debt	The data on HHs savings in formal and informal sources including home savings is collected. Also, HHs number of debts from different sources and individual loan details on amount, interest rate, reason for borrowing, source of loan, loan repaid, subsidy and moratorium period
Household Income	Income details of the households were collected; Income from wages (agricultural, non-agricultural and MGNREGS), salary, agriculture, livestock, business, transfers and pensions
Expenditure	Expenditure of the household on food and non-food items like clothing, education, medical treatment, festivals, travel etc. were collected
Self-employment Business	Household's enterprise data on primary activity, year of establishment, location, ownership, borrowings, workers, sales and expenses were asked
Assets	This section includes data on Natural assets, livestock and commercial assets. Both number and value of assets were captured in case of livestock.
Access to basic resources	This section includes questions on proximity of town, markets, health center, post office and primary school
Intra-household Bargaining Power	The section included a game played between husband and wife to know the intra-household bargaining power of husband and wife

2.5 Methodology

The aim of our evaluation is to estimate the impacts of NRLM on the economic and social welfare of households and the community. In the absence of systematic differences between the treatment and control groups a simple difference in mean test (t-test) would have given the impact of the program. However, due to the non-random nature of roll out of program (program-placement bias) and demand driven acceptance of program from the households (self-selection bias), it is not possible that program households and non-program households will be similar to each other in the absence of the program and there were no pre-program differences between them when they joined the program. The presence of program-placement and self-selection bias will make the impact estimates inconsistent and inaccurate. We used the Average Treatment effect on Treated (ATT) as the key impact estimate given the non-random allocation of program to villages and blocks. ATT is the expected value of outcome of those received the intervention, conditional on parameters and household's characteristics that influence program participation.

$$ATT = E [Y1, P = 1] - E [Y0, P = 1]$$

Here, the first term, $E [Y1, P = 1]$ is the expected outcome of the program when the household received the program benefits. Whereas the second term, $E [Y0, P = 1]$ is the expected outcome when the household doesn't receive the program benefits, which is not possible to capture. However, we can observe $E [Y0, P = 0]$ i.e., expected outcome of the non-program households, given that they did not receive the intervention. In the absence of any potential bias (program placement bias and self-selection bias), we can say that those who participated in the program and those who did not have the same outcome. In other words, $E [Y0, P = 1] = E [Y0, P = 0]$. But we do see from our above discussion, the presence of biases. If the biases are not taken care of then it will distort the impact estimates.

To make an unbiased comparison, we must have a control group (non-members) who were similar to treatment group (SHG members) before the introduction of the program. Program was not introduced randomly across sample so preferred method of having control arm randomly gets ruled out. The absence of baseline data eliminates the possibility of using panel data techniques like difference-in-difference and triple difference approach. The absence of cut-off rule/hard targeting criteria eliminates the regression discontinuity design (RDD). Also, we explored several instruments that can be used to replace participation variable but those remain unaffected by unobserved factors. The instruments were weak, so instrumental variable approach also gets ruled out. Hence, we decided to use propensity score matching method for constructing the control group based on the observable characteristics of respondent, households and proximity to resources.

We have evaluated the impact of the program on the treatment group by having two control groups; one, non-member household from the intervention areas and second, non-member household from the non-intervention areas. The objective of having two control groups is to evaluate the program effects on member households with respect to non-member households in intervention areas as well as non-intervention areas.

2.6 Propensity Score Matching (PSM)

PSM is a non-experimental, retrospective method of impact evaluation. The program evaluation has no impact on the program implementation process. We used kernel matching method for matching the treatment and control group. Kernel matching method are nonparametric matching estimators that compare the outcome of each treated person to a weighted average of the outcomes of all the untreated persons, with the highest weight being placed on those with scores closest to the treated individual (Heinrich, Maffioli and Vazquez, 2010). Frölich (2004) asserts that the kernel

matching produces the most precise estimates among different matching algorithms. The households are matched using propensity scores estimated by the selection model (Rosenbaum and Rubin, 1983). We define the selection model using the variables having two characteristics; first, variables which affect both the probability of participation and the outcome and second variables which are not affected by the program (treatment). The full list of variables is listed in Annexure 1.

Annexure 2 and 3 presents the probit model of the probability that the respondent household belongs to NRLM SHGs, as a function of comprehensive set of respondent head of household, household, pre-program and access to resources characteristics. Annexure 2 presents the probit model of treatment and control group II (intervention villages non-members) and annexure 3 presents the probit model of treatment and control group I (non-intervention villages non-members). Same set of variables were used for the both the group comparison. The variables selected are drawn based on the extant literature as well as NRLM implementation structure.⁵ These variables include head of household characteristics (age, square of age, head is married or not, education of head, female head), household characteristics (Christian household, SC/ST household, dependency ratio), proximity characteristics (distance to post office) and pre-program status (small livestock, bovine livestock, agricultural assets, low-value and high-value assets in 2014).

Selection model variables for treatment and control II group shows positive influence of distance to post office, female headed households, age of head of household, SC/ST household, married head of household, number of low value assets and small livestock (2014) on NRLM participation. Similar results are found for treatment and control I group except SC/ST household which shows negative influence on NRLM participation.

PSM is based on two fundamental assumptions: Conditional Independence Assumption (CIA) and Common support (overlap) conditions. Annexure 4 presents the balance property in the matched sample to test for CIA for both the analysis groups. The results shows that the balancing property is satisfied and differences in the matched sample has been reduced. Annexure 5 shows that there is a satisfactory and significant overlap (common support) of propensity scores between the treated and control units (control I and II). Kernel matching model is used for estimating the impacts of the program.

⁵1. Raghunathan, K, Kannan, S and Quisumbing AR, 2019. Can women's self-help groups improve access to information, decision-making, and agricultural practices? The Indian Case. *Agricultural Economics* 50 (5): 567-580

2. Datta, U, 2015. Socio-economic effects of a self-help group intervention: evidence from Bihar, India. The World Bank. <https://thedocs.worldbank.org/en/doc/7151514598724086150050022016/original/SocioEconomicImpactsofJEEViKAALargeScaleSelfHelpGroupProjectinBiharIndia.pdf>

3. Progress of SHGs, VOs in Meghalaya

This section presents the findings on the evolution of SHGs in Meghalaya over the years. The analysis presented are from Management Information System (MIS) data of MSRLS. Some of the interpretations are also based on the interactions with MSRLS officials and staff members. Region-wise progress of the program in Meghalaya is also presented in the subsequent sections.

3.1 District and Block Level Coverage

As per NRLM strategy, implementation of the program is in a phase manner, and as such, MSRLS rolled-out the NRLM Program in November, 2014 in 3 Districts viz: West Khasi Hills, West Garo Hills and South West Khasi Hills Districts covering 4 Blocks under (Resource Block Strategy). The following year 2015-16, focus on NRLM implementation was given to the Sansad Adarsh Gram Yojana blocks. MSRLS is now operating in all the 11 Districts and 46 Blocks. The implementation of NRLM in respect of Districts and Block entry is shown in Table 3.1.

Table 3.1 – District and Block Coverage of Program

Year Wise	District Coverage	Block Coverage	Remarks
2014-15	West Khasi Hills South West Khasi Hills West Garo Hills	Mairang Mawkyrwat Rongram, Dalu	Resource Blocks (Phase –I)
2015-16	East Khasi Hills West Jaintia Hills Ri Bhoi North Garo Hills	Mawkynew Laskein Umsning Resubelpara	Sansad Adarsh Gram Yojana Blocks (Intensive Phase –I)
2016-17	Focus on the existing 7 Districts and 8 Blocks only		
2017-18	East Jaintia Hills South West Garo Hills East Garo Hills South Garo Hills	Thadlaskien, Laitkroh, Pynursla, Khliehriat, Mawshynrut, Jirang, Betasing, Zikzak, Samanda, Songsak, Baghmar, Chokpot, Rongara.	(Intensive Phase - II)
2018-19		Ranikor, Mawthadraishan, Nongstoin, Umling, Bhoiryumbong, Dambo Rongjeng.	(Intensive Phase - III)
2019-20		Saipung, Amlarem, Mawphlang, Mawryngkneng, Mawsynram, Sohiong, Shella Bholaganj, Myllem, Selsella, Mawlai, Mawpat, Dadenggre, Demdema, Tikrikilla, Gambegre, Kharkutta, Bajengdoba, Gasuapara, Damalgre	(Intensive Phase IV)

3.2 State Level Progress

Table 3.2 below shows the snapshot of year-wise state level progress of MSRLS. SHGs and VOs have been formed in all the districts and blocks of the state. According to MSRLS officials, in 2016-17 major focus was given on strengthening the institution in the blocks entered in 2014-15 and 2015-16. Hence, the program did not enter any new districts and blocks in 2016-17. Every year there has been an increase in all parameter over the previous year. Over 33,000 SHGs have been formed out of which 68.6% SHGs have received start-up fund and 62% have received RF. Out of the 1744 VOs formed, 93.27% have received start-up fund and 90.3% have received CIF.

There is an increasing trend in the number of SHGs and VOs formed in the state. From 2019-20, the formation of SHGs and VOs have increased substantially. This shows that initially major emphasis was given to capacity building of the institutions. Over the last two years the focus has shifted to scaling up the program in the State. The number of VOs receiving VRF and SHGs receiving bank loan is quite less, to tackle this the Government may consider taking necessary steps to facilitate increase in size of loan of members and vulnerable households. Focus on formation of CLFs has just started in 2020-21 for strengthening the institution. Since the inception of the program, the total amount of savings mobilized in the SHGs from its members is INR 2306 lakhs until 2020-21 starting from INR 1 lakh in 2014-2015.

SHGs have been formed in 5265 villages (approximately 75% of the total villages) in Meghalaya covering 3.336 lakhs households.



Table 3.2 – State Level Progress

SN	Parameters	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	Total
1	No. of Districts Covered	3	4	4	4	0	0	0	11
2	No. of Blocks Covered	4	4	4	13	6	6	0	46
3	No. of SHGs formed	134	588	588	3874	4890	4890	11100	33366
4	No. of VO Formed	5	12	12	100	304	304	712	1744
5	No. of SHGs received Start Up Fund	0	409	409	747	3940	3940	10790	22897
6	Amount of Start Up provided (in Lakhs)	0.00	10.22	10.22	18.95	96	96	269.8	571.5
7	No. of SHGs received RF	0	193	193	776	3653	3653	9600	20594
8	Amount of RF provided (in lakhs)	0.00	28.53	28.53	115.45	546.89	546.89	1440.0	3084.41
9	No. VO received Start Up Fund	0	0	0	49	174	174	789	1627
10	Amount of Start Up provided to VO (in lakhs)	0.00	0.00	0.00	25	111.75	111.75	358.3	845.82
11	No. VO received CIF	0	0	19	83	135	605	734	1576
12	Amount of CIF provided to VO (in Lakhs)	0.00	0.00	73.52	589.25	1783.15	3579.21	3263.93	9289.06
13	No. VO received VRF	0	0	3	5	7	21	383	419
14	Amount of VRF provided (in Lakhs)	0.00	0.00	1.32	5	9.57	30.9	431.4	478.19
15	No. of SHGs received Bank Loan	0	25	34	260	1515	2331	2910	7075
16	Amount of Bank Loan received (in Lakhs)	0.00	11.60	13.50	169.10	1024.0	1940.85	3650.19	6809.24
17	Amount of saving mobilised (in lakhs)	1	13	62	159	463	615	993 (as on 11th March)	2306
18	No. CLF Formed	0	0	0	0	0	0	9	9

Source: MSRLS Database

3.3 Region-wise Progress

This section presents the analysis on the coverage of the program in the three regions of the state i.e., Khasi, Garo and Jaintia Hills. Figure 3.1 below shows the number of villages where the program was launched in these regions from 2014-15 to 2020-21. We see an increasing trend in the number of villages entering the program in all the three regions. The highest increase can be seen in 2019-20, during which scaling up was the focus after entering in all the districts of Meghalaya. However, a fall can be seen in number of villages entered in 2020-21. This decrease can be attributed to two main reasons, firstly, the lockdown imposed in the state due to COVID-19 pandemic and secondly, almost 60% of the villages were already covered till 2019-20, therefore maintaining the same pace becomes difficult.

Figure 3.1: Number of Villages under NRLM program

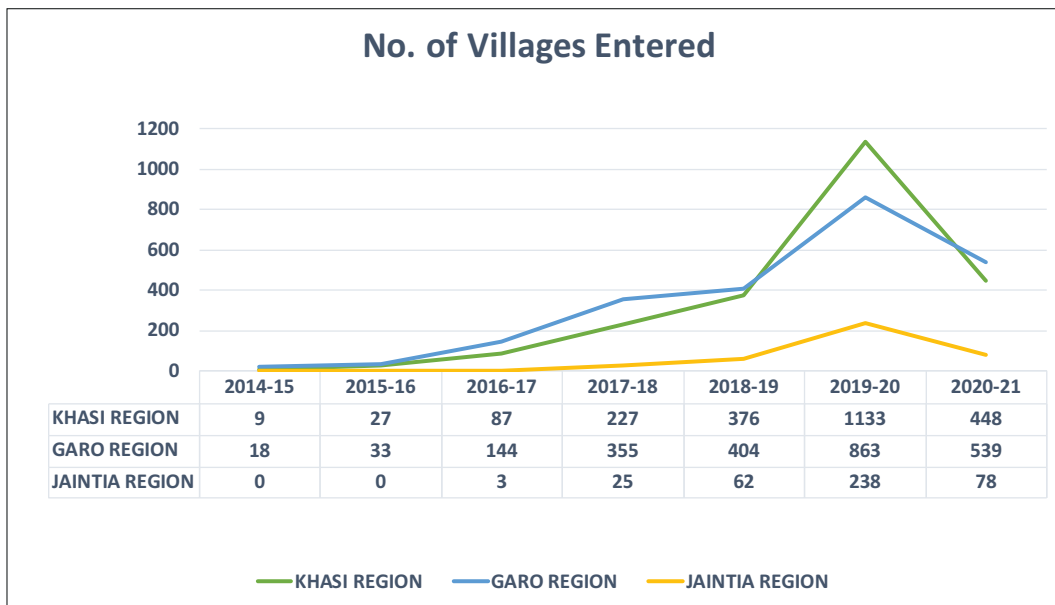


Figure 3.2 shows the number of households covered under NRLM in the three regions. Here as well we see an increasing trend in all the three regions with major increase in 2019-20. In 2020-21, the household coverage increased in Jaintia Hills, remained almost the same in Khasi Hills and slightly decreased in Garo Hills. However, considering the aforementioned reasons affecting the decline in coverage during 2020-21, the overall increase is still substantial.

Figure 3.2: Number of Households Covered

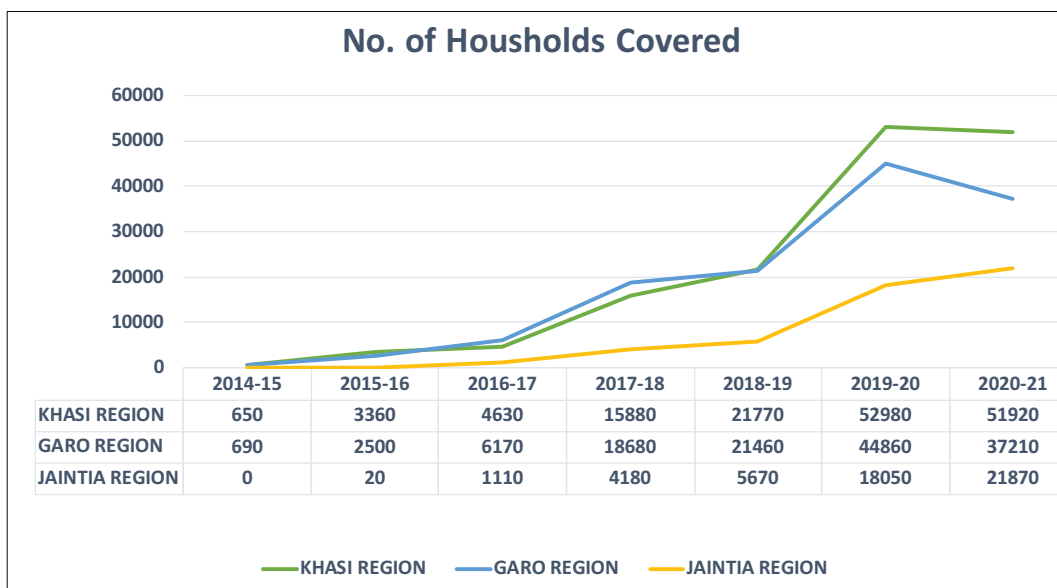


Figure 3.3 shows the number of SHGs formed from 2014-15 to 2020-21 in the regions. Here too we see a substantial increase in the number of SHGs formed from 2017-18 with the highest increase in 2019-20. We see that after focusing on capacity building till 2016-17 the process of scaling up was given major priority since 2017-18.

Figure 3.3: Number of SHGs formed

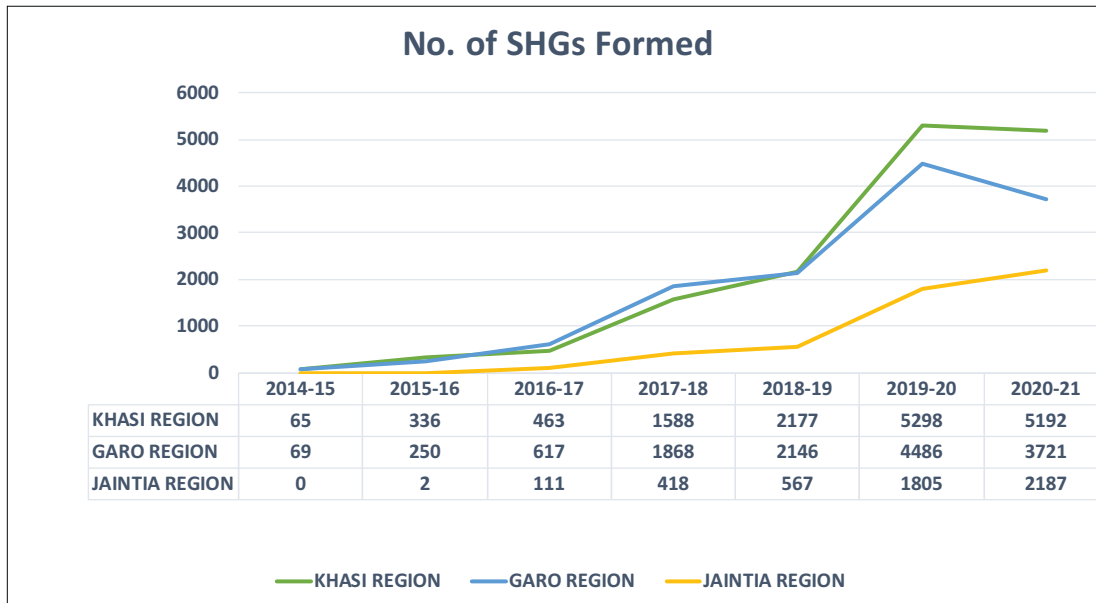


Figure 3.4 shows the number of VOs formed over the years. In the initial two years, the number of VOs formed were quite less due to smaller number of SHGs formed. However, post 2017-18, there was a significant rise in the number of SHGs formed which resulted in increase in no. of VOs formed. The SHGs formed were federated into the VOs in large numbers since 2018-19 and despite the COVID-19 pandemic, the pace of formation of VOs increased in 2020-21, with a slight dip in Garo hills. The VOs formed in Khasi hills, Garo Hills and Jaintia Hills increased approximately 7, 4 and 3 times respectively from 2018-19 to 2020-21.

Figure 3.4: Number of VOs formed

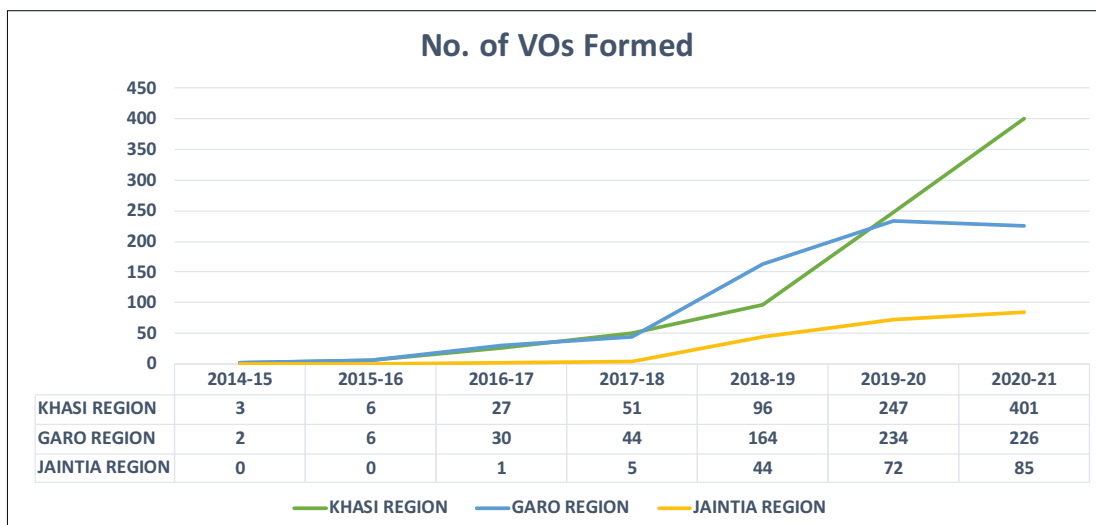
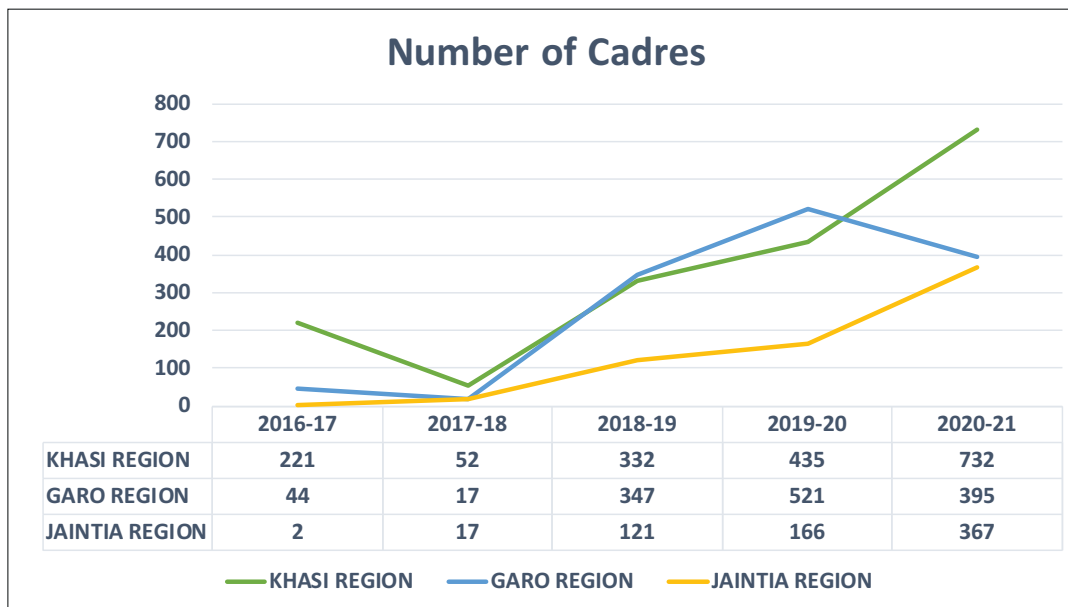


Figure 3.5 shows the number of cadres formed in the three regions. Formation of cadres started one and half years after the program was rolled out in 2014-15. Number of cadres formed increased significantly from 2018-19 by approximately 3.5, 2.5 and 4.5 times in Khasi, Garo and Jaintia hills respectively. Overall, number of cadres in the State are 3769 and on an average one cadre handles 9 SHGs.

Figure 3.5: Number of Cadres Formed



4. Findings (Treatment and Control II)

This section discusses about the impact of NRLM on program households compared with non-program households of the non-intervention area (control group-II). The impact of the program is measured on economic welfare and intra-households bargaining power of women in the household. The results are regression estimates of propensity score matching (kernel method).

4.1 Household Composition

The average household size of program and non-program households is 5.86 and 4.98 members respectively. The percentage of Christian households are 86.18% and 79.49% in program and non-program households respectively. Other religions constitute 13.82% and 21.51% in program and non-program households respectively. Percentage of male and female are almost equal for both the groups, 50.26% male for program households and 51.11% male for non-program households. Meghalaya comprises of a large population of ST households (90.36%)⁶ which is evident in our study as well, 99% in program households and 90% in non-program household.

4.2 Savings Habit

We start the discussion of impacts of the program on savings. Table 4.1 shows that on an average there is no significant differences between the program and non-program households in formal and total savings but the informal savings of program households is less by 26% (INR 940). However, the result of informal savings is weakly significant. In the case of per capita⁷ informal savings, the program household save 31% (INR 256) less than the non-program households and no significant differences is seen in the total per capita savings and per capita formal savings.

Table 4.1: Impact of Program on Amount of Savings (INR)

Outcome Variable	Treated	Control	Differences	Percentage Change	S.E. ⁸
Amount of Formal Savings (INR)	5918	6592	-674	-10%	753.41
Amount of Informal Savings (INR)	2682	3622	-940*	-26%*	546.55
Per capita Formal Savings (INR)	1286	1378	-92	-7%	170.88
Per capita Informal Savings (INR)	582	838	-256*	-31%*	130.21
Total Savings (INR)	8600	10214	-1614	-16%	1025.61
Per capita Savings (INR)	1869	2216	-347	-16%	237.52

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

The share of formal savings in total savings is 14.46% higher of program households and the result is highly significant.⁹ We also see that 20% more program households save in formal sources and 5% more program households practice

⁶ Caste Tribe Status of Households (Rural), <https://secc.gov.in/statewiseCasteProfileReport?reportType=Caste%20Profile>

⁷Per capita has been calculated at all the instances by dividing total by total household members

⁸S.E. is standard error. Standard error statistics are a class of inferential statistics that function somewhat like descriptive statistics in that they permit the researcher to construct confidence intervals about the obtained sample statistic. The confidence interval so constructed provides an estimate of the interval in which the population parameter will fall. The two most commonly used standard error statistics are the standard error of the mean and the standard error of the estimate.

McHugh, M. L. (2008). Standard error: meaning and interpretation. *Biochemia Medica*, 18(1), 7-13.

⁹Share of formal savings = (Sum of savings from all the formal sources (for example, banks, SHGs etc.) / Total savings) * 100.

savings as a habit. These results shows that there are no impacts of program on amount of savings (including formal savings). However, we do see there is a strong preference of program households towards savings in the formal sources along with high share.

Table 4.2: Impact of Program on Savings as a Habit

Outcome Variable	Treated	Control	Differences	S.E.
Whether saved in informal source	0.78	0.76	0.02	0.031
Whether saved in formal source	1	0.8	0.2***	0.024
Whether saved or not	1	0.95	0.05***	0.013
Share in formal savings (%)	69.82	55.36	14.46***	2.53
Share in informal savings (%)	30.17	40.45	-10.28***	2.49

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

The results in table 4.3 clearly shows the positive impact in share of formal savings is directly attributed to savings done in SHGs. When SHG is not included in formal source, program households save lesser in formal sources (26% i.e., INR 1720) with lesser per capita formal savings (23% i.e., INR 311) as well. Also, the share of formal savings of program households is lesser by 8.47% than the non-program households. But, still 12% more program households prefer to save in the formal source than the non-program households. This shows SHGs have infused thrift habit among program beneficiaries and it is mostly in the formal sources, although it is not reflected in amount and share after excluding SHG from formal source.

Table 4.3: Impact of Program on Formal Savings (excluding SHG savings)

Outcome Variable	Treated	Control	Differences	Percentage change	S.E.
Formal Savings (INR)	4872	6592	-1720**	-26%**	739.83
Per Capita Formal Savings (INR)	1067	1378	-311*	-23%*	167.40
Share in Formal Savings (%)	46.89	55.36	-8.47***	NA	2.551
Whether saved in Formal Source	0.92	0.8	0.12***	NA	0.027

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

4.3 Expenditure

The expenditure result does not show much impact of the program on the households. Table 4.4 shows that there is no statistically significant difference in the total as well as per capita expenditure on food, non-food, health, education and overall expenditure of the program and non-program households.

Table 4.4: Impact of Program on Monthly and Per Capita Expenditure (INR)

Outcome Variable	Treated	Control	Differences	Percentage change	S.E.
Monthly Food Expenditure	4762	4717	45	1%	261.44
Monthly Non-Food Expenditure	3996	4398	-402	-9%	441.99
Monthly Health Expenditure	663	684	-21	-3%	73.67
Monthly Education Expenditure	1811	1760	51	3%	387.05
Monthly Expenditure	8758	9116	-358	-4%	594.17
Per Capita Food Expenditure	926	1122	-196	-17%	138.29
Per Capita Non-Food Expenditure	763	986	-223	-23%	151.19
Per Capita Health Expenditure	130	158	-28	-18%	26.21
Per Capita Education Expenditure	329	391	-62	-16%	122.79
Per Capita Total Expenditure	1689	2108	-419	-20%	278.56

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

However, in table 4.5 we do see the preference of program households to spend 3.52% more on food expenditure and 1% more on health expenditure of their budget than the non-program households. The share of non-food expenditure is less in program households and no significant difference is seen in the share of education. To summarize, there is not much program impact on the expenditure levels of the program households. The impact can only be seen in utilisation of budget of program households more towards food and health expenses and less towards non-food expenses

Table 4.5: Impact of Program on Share of Expenditure¹⁰

Outcome Variable	Treated	Control	Differences	S.E.
Share of Food Expenditure	59.6	56.08	3.52***	1.305
Share of Non - Food Expenditure	40.39	43.91	-3.52***	1.305
Share of Health Expenditure	7.36	6.36	1*	0.576
Share of Education Expenditure	14.78	14.67	0.11	1.267

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

4.4 Loan Behaviour

The major impact of the program can be seen in the loan taking behaviour of the program households. SHGs have been able to motivate program households in taking loan in order to utilise the loans for their required needs. Table 4.6 shows that the percentage of program households taking loans is 36% more than the non-program households. The percentage of program households taking a formal loan is 40% more than the non-program households. Also, the average number of loans and formal loans taken by the program households is 0.44 and 0.46 more than the non-program households respectively. These results show that the likelihood of SHG households taking a loan (especially formal loan) is higher than the non-program households. We find no significant differences in the number of informal loans taking behaviour of the program and non-program households. Out of the total loan taken, the share of formal

¹⁰Share of different types of expenditure is the percentage distribution of expenditure on food, non-food etc. out of the total expenditure

loans is 32.51% higher in the program households. These results show that if a household takes loan, the program households are inclined towards formal loans sources whereas non-program households are also inclined towards formal loan sources but they have to settle sometimes with informal loans. Also, SHG gave its beneficiaries the opportunity to get loans which they would have been unable to access in the absence of program.

Table 4.6: Impact of Program on Households Borrowing Behaviour

Outcome Variable	Treated	Control	Differences	S.E.
Proportion of HH who took a loan	0.51	0.15	0.36***	0.028
Proportion of HH who took formal loans	0.5	0.1	0.4***	0.026
Proportion of HH who took informal loans	0.03	0.05	-0.02	0.013
Number of loans	0.62	0.18	0.44***	0.040
Number of formal loans	0.58	0.12	0.46***	0.034
Number of informal loans	0.04	0.05	-0.01	0.018
Share of formal loans taken by a household (%)	95.71	63.2	32.51***	7.409
Share of informal loans taken by a household (%)	4.28	36.79	-32.51***	7.409

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

Figure 4.1 below shows the distribution of loans across sources for the program and non-program households. The figure clearly shows high instances of SHG internal loan (loans taken from the savings of the group) i.e., 64% for the program households. If we include other SHG sources as well i.e., SHG bank loan and VO loan the percentage increases to 83%. This shows that the high instances of loans of the program households are clearly because of the loans through SHGs. The loans taken by the non-program household are dominated by nationalized banks (22%) and relatives/friends loan (28%). Overall if we see from our sample, the number of loans taken by the program and non-program households is 346 and 63 respectively.

Figure 4.1: Sources of loan

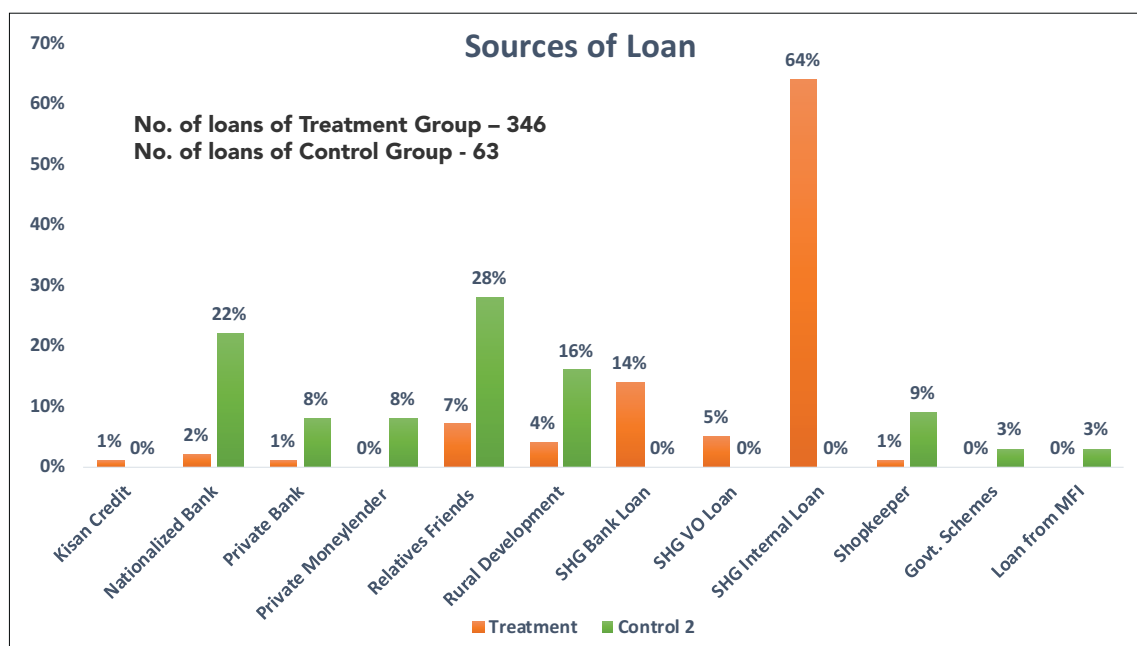


Table 4.7 below shows that the average size of loan taken by the program households in case of formal as well as informal source is 86% (INR 29,800) and 77% (INR 88,763) less than the non-program households respectively. This shows that loan size of the program households is quite small. There are two possible reasons: first, high percentage of SHG internal loans (64%) for program households whose sizes are smaller to begin with. Second, the number of loans taken by the non-program households are quite less as compared to the program households which can also be a reason. We don't find any significant difference in the moratorium period and age of the loan of the program and non-program households.

Table 4.7: Impact of Program on Size and Duration of Loan

Outcome Variable	Treated	Control	Differences	Percentage Change	S.E.
Average size of informal loans of a household (INR)	4755	34555	-29800**	-86%**	12366.98
Average size of formal loans of a household (INR)	25868	114631	-88763***	-77%***	32425.50
Average moratorium period of outstanding loans	0.52	0.61	-0.09	-15%	0.0807
Average number of years surpassed for the outstanding loan	1.22	2.2	-0.98	-45%	0.3815

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

Table 4.8 shows a negative impact of the program on interest rate, non-program households have to pay 4.39% less interest on their loans taken. The possible reason for this is the high instances of loans taken by the non-program households from national bank (interest rate ranges from 7-11%) and relative/friends (0% interest rate), whereas, program households loans comprise majorly of SHG Internal loan which is 12% per annum. We do see a positive impact of the program on collateral and co-signer requirement. Out of the total loans taken, the requirement of collateral and co-signer was 20.11% and 33.41% less for program household than the non-program households respectively. The main reason is the high percentage of SHG internal loans taken by SHG households which do not require collateral and co-signer. Only 3% of the loans taken by program households were lesser than the amount they actually demanded compared to 22% loans in case of non-program households (19% more than program households). Non-program households receive on an average INR 2465 less amount in a loan than demanded whereas program households receive only INR 136 less, which is 94% (INR 2329) less than the non-program households. One of the reasons for this could be low average loan size in case of program households.

Table 4.8: Impact of Program on Interest Rate, Collateral and Co-signer Requirement

Outcome Variable	Treated	Control	Differences	S.E.
Average interest rate of loans in a household	11.63	7.24	4.39%***	0.844
Percentage of loans in which collateral was needed for a household	21.08	41.19	-20.11%***	7.392
Percentage of loans for which co-signer was needed for a household	32.37	65.78	-33.41%***	7.959
Percentage of loans received less than demanded	3	22	-19%***	0.0653
Amount (INR) received less than demanded	136	2465	-2329**	972.604

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

There are no significant differences in terms of utilization of loans for productive and non-productive purpose for the program and non-program households. However, from table 4.9 we find that only one-fifth of the program households (5%) have taken loan for consumption purpose as compared to non-program households (26%). 23% and 21% of the program household have taken loan for medical and livestock purpose as compared to 3% and 2% of the non-program households. This result suggests that program households are 10.5 and 8 times more likely to access loans for livestock and medical purpose respectively compared to non-program households. We find no significant differences in the loan taken by the household for education, agriculture, enterprise and other purpose. This result shows that SHG households show greater dependence on livestock and medical loans and lesser dependence on consumption loans compared to non-program households.

Table 4.9: Impact of Program on Purpose of Loan Utilization

Outcome Variable	Treated	Control	Differences	S.E.
At least 1 consumption loan in a household	0.05	0.26	-0.21***	0.696
At least 1 medical loan in a household	0.23	0.03	0.20***	0.0405
At least 1 livestock loan in a household	0.21	0.02	0.19***	0.0338
At least 1 education loan was taken in a household	0.15	0.09	0.06	0.0521
At least 1 agriculture loan was taken in a household	0.19	0.26	-0.07	0.0725
At least 1 enterprise loan was taken in a household	0.15	0.2	-0.05	0.0613
At least 1 home loan was taken in a household	0.13	0.2	-0.07	0.0657
At least 1 marriage/ funeral/ birth/ etc. loan was taken in a household	0.01	0.06	-0.05	0.0379
At least 1 loan was taken to clear prior mortgage or to free land	0.003	0	0.003	0.0039
At least 1 productive loan was taken in a household	0.66	0.58	0.08	0.0815
At least 1 non- productive loan was taken in a household	0.42	0.52	-0.1	0.0824
Share of productive loans of a household	0.61	0.52	0.09	0.0782
Share of non-productive loans of a household	0.38	0.47	-0.09	0.0782

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

4.5 Enterprise

We don't find any statistically significant difference between the program and non-program household in most of the indicators in case of enterprise. Table 4.10 shows that no differences is found in number of enterprises, hired workers, household workers, location of enterprise, registered enterprise as well as sales and expenses of the enterprise. However, we do find that program households have shown a greater need for capital borrowing (almost 3 times the amount) than the non-program households for their enterprise activity in the past two years.

Table 4.10: Impact of Program on Enterprise

Outcome Variable	Treated	Control	Differences	PercentageChange	S.E.
Whether enterprise is present	0.25	0.23	0.02	NA	NA
Number of Enterprise	0.25	0.24	0.01	4%	4%
Enterprise Registered	0.05	0.12	-0.07*	NA	NA
Enterprise Location (Outside Residence)	0.48	0.51	-0.03	NA	NA
Number of Hired Workers	0.69	13.9	-13.21	-95%	-95%
Number of Household Workers	0.73	0.74	-0.01	-1%	-1%
Capital Borrowed (INR)	13542	4706	8836***	188%***	188%***
Sales of the Enterprise (INR)	156375	192168	-35793	-19%	-19%
Operating Expenses (INR)	38340	48115	-9775	-20%	-20%
Total Expenses (INR)	78692	91001	-12309	-14%	-14%

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

4.6 Assets

We estimated the impact of the program on productive, consumption and livestock assets. From table 4.11 we see that the number of pigs in the program households is approximately 3 times the number of pigs in the non-program households. We also see that on an average program households have 1.36 poultry lesser than the non-program households. Percentage of households with no livestock in the non-program households is 13% higher than the program ones. There is no significant difference between the two groups in case of bovine livestock. The high number of pigs and more program households having livestock can be substantiated from the fact that high utilization of loan for livestock purpose by the program households.

Table 4.11: Impact of Program on Livestock Assets

Outcome Variable	Treated	Control	Differences	PercentageChange	S.E.
No. of Cows	0.46	0.48	-0.02	-4%	0.122
No. of Pig	0.97	0.34	0.63***	185%***	0.109
No. of Poultry	1.77	3.13	-1.36***	-43%***	0.524
No. of Buffalo	0.007	0.18	-0.17	-96%	0.024
No. of Goat	0.105	0.12	-0.02	-13%	0.082
HH with No livestock	0.414	0.546	-0.13***	NA	0.037

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

Table 4.12 shows that program households have 12% more low-value consumer asset¹¹ than the non-program households. We find no significant differences in the productive and high value consumer assets holdings. The program has no effect on productive and high value consumer assets. This can be attributed to the fact that size of loan taken by the program households is too low to have an effect.

¹¹Low Value Durable Assets are Radio, Cycle, LPG, Fan, Major Utensils etc. and High Value Durable Assets are Refrigerator, Motorcycle, Television, Vehicles etc.

Table 4.12: Impact of Program on Consumer and Productive Assets

Outcome Variable	Treated	Control	Differences	PercentageChange	S.E.
HH has any productive assets	0.545	0.553	-0.01	-1%	0.0368
Number of Agricultural Assets	2.35	2.05	0.3	15%	0.2207
Number of High Value Consumer Asset	1.09	1.05	0.04	4%	0.1092
Number of Low Value Consumer Asset	8.67	7.71	0.96***	12%***	0.3217

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

4.7 Agriculture

The impact of program on agriculture shows encouraging results for the program households. The program household's area of farming is on an average 0.85 acre (40%) less than non-program households, yet we see impacts in terms of greater number of crops grown by the program households. From table 4.13, Program households grow 0.15 (16%) overall crops and 0.08 (35%) rabi crops more than the non-program household. There are no significant differences in the agriculture income per acre and proportion of sale income from total agricultural income despite of program households having less farming land.

Table 4.13: Impact of Program on Agriculture

Outcome Variable	Treated	Control	Differences	PercentageChange	S.E.
Number of total crops grown in a household	1.1	0.95	0.15*	16%*	0.082
Number of kharif crops grown in a household	0.7	0.61	0.09	15%	0.062
Number of rabi crops grown in a household	0.31	0.23	0.08**	35%**	0.039
Number of Zaid crops grown in a household	0.08	0.1	-0.02	-20%	0.025
Total agriculture income per acre (INR)	24710	27186	-2476	-9%	2512.92
Proportion of sale income from total agriculture income	0.68	0.73	-0.05	-5%	0.0339

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

4.8 Women Livelihood and Bargaining Power

Women bargaining power was calculated using a game played between husband and wife of the households, and based on the allocation of the resources the indices were created. The calculation of bargaining index is based upon a paper that shows how the milk market participation leads to changes in bargaining power between men and women (Lenjiso, B. M., et al., 2016). By playing this game with couples in program households and non-participant households

we aim to enhance our understanding of how SHG participation might influence the intra-household bargaining position of the women. The experimental money given in this game was Rs. 200, hypothetically. In our game there are two roles, firstly, proposing how to share the amount between themselves and their spouse, and secondly, indicating how much one expects to receive from the spouse. The game was played in two rounds to enable the spouses to play both roles (proposal and expectation). The spouses were located in distant place from each other to avoid communication between them. Toss was done to decide who will be the proposer first. In the second round the roles were reversed. The women's bargaining index (WBI) is an index that is a proxy of the bargaining power of women in a household. It ranges between 0 and 1, the index closer to 1 suggests the higher bargaining power of women and lower bargaining power if it is closer to 0. The same applies for Husband's Bargaining Index (HBI). Women's relative intra-household bargaining position (women's bargaining position in relation to her partner, WRBI) was calculated by dividing women's bargaining index in the game by the men's bargaining index in the game.

$$WBI = ((WiExp - WiPro) + WiExp) / WiExmo + HuExmo \dots\dots\dots (1)$$

$$HBI = ((HuExMo - HuPro) + HuEx) / WiExmo + HuExmo \dots\dots\dots (2)$$

$$WRBI = WBI / HBI \dots\dots\dots (3)$$

Where, WiExMo – Wife's experimental money; WiPro – Wife's proposal; WiExp – Wife's expectation, HBI – Husband's bargaining index in the game; HuExMo – Husband's experimental money; HuPro – Husband's proposal; HuEx – Husband's expectation.

The results in table 4.14 shows that there is no significant difference in WBI and WRBI between the program and non-program households. The two possible reasons could be; first, Meghalaya is a matrilineal society¹² where majority of women earn and feed the household and secondly the money given in the game was hypothetical. However, we do see the HBI of program households less than the non-program households by 2%. We also don't find any significant differences between the number of livelihoods for male and female in a household.

Table 4.14: Impact of Program on Women's Livelihood and Bargaining Power

Outcome Variable	Treated	Control	Differences	PercentageChange	S.E.
Women Bargaining Index	0.488	0.485	0.003	1%	0.004
Husband Bargaining Index	0.486	0.497	-0.01**	-2%**	0.004
Women's Relative Bargaining Power	1.01	1	0.01	1%	0.016
Number of livelihoods for female in a household	1.46	1.41	0.05	4%	0.103
Number of livelihoods for male in a household	1.81	1.96	-0.15	8%	0.112

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

¹²Das M, Changing Family System Among a Matrilineal Group in India, https://iussp.org/sites/default/files/Brazil2001/s10/S12_04_Das.pdf

4.9 Income

One of the major impacts of SHGs is expected from livelihood diversification with increased income in different sources. Table 4.15 shows the impact of the program on household livelihood diversification. Program households have 0.27 (8.15% more) additional sources of income than the non-program households which are predominantly reflected by preference of program households towards practicing agriculture and livestock as a source of income. Program households practicing agriculture and livestock are as source of income is 16% and 13% more than the non-program households. No significant difference is seen in proportion of program and non-program households having enterprise as a source of income.

Table 4.15: Impact of Program on Women's Livelihood and Bargaining Power

Outcome Variable	Treated	Control	Differences	S.E.
Proportion of HHs Agri. wage	0.48	0.59	-0.11***	0.0364
Proportion of HHs Non-agri. wage	0.49	0.38	0.11***	0.0368
Proportion of HHs MGNREGS wage	0.68	0.71	-0.03	0.0333
Proportion of HHs Agriculture	0.65	0.49	0.16***	0.0371
Proportion of HHs Livestock	0.58	0.45	0.13***	0.0374
Proportion of HHs Enterprise	0.25	0.23	0.02	0.0307
Diversity Number of Income Sources	3.58	3.31	0.27***	0.0941
Diversity Prop. of Income Sources	0.39	0.36	0.03***	0.0104

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

Impact of the program is seen on livestock income mainly; program households earn 145% (INR 2850) more than the non-program households. The main reason for this could be the high percentage of program households taking loan for livestock purpose. We did not find any significant differences between program and non-program households in agricultural and non-agricultural wage income, pension and transfer income and agriculture income. However, we do find MGNREGS income of program households to be 26% (INR 4328) less than non-program households even though there is no difference in the proportion of households earning through MGNREGS. The reason for this could be that the program households are working lesser number of days in MGNREGS and shifting towards agriculture and livestock as an income source. The enterprise income of program households is 23% less than the non-program households but the result is weakly significant.

Table 4.16: Impact of Program on Income

Outcome Variable	Treated	Control	Differences	Percentage Change	S.E.
Agri-wage Income (INR)	21799	25630	-3831	-15%	2578.44
Non-Agri wage Income (INR)	33233	33265	-32	0%	3284.26
MGNREGA wage Income (INR)	12073	16401	-4328***	-26%***	611.37
Agriculture Income (INR)	24204	25710	-1506	-6%	2772.19
Livestock Income (INR)	4809	1959	2850***	145%***	1259.67
Enterprise Income (INR)	38841	50583	-11742*	-23%*	6805.11
Pension and Transfer Income (INR)	15850	9947	5903	59%	6401.28
Other Income (INR)	9663	11995	-2332	-19%	17012.52

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

5. Findings (Treatment and Control I)

In this section, we assess the impact of SHGs on program households compared with the non-members who are from the intervention area villages. The results in this chapter are mostly similar to the result presented in section 4 apart from few.

5.1 Savings

We start our analysis with savings habit of households. Table 5.1 shows that there is no significant difference between the program and non-program households in the total households as well as per capita formal and informal savings. We also see that there is no significant difference in the overall and per capita savings.

Table 5.1: Impact of Program on Amount of Savings (INR)

Outcome Variable	Treated	Control	Differences	Percentage Change	S.E.
Amount of Formal Savings (INR)	6559	6027	532	9%	929.55
Amount of Informal Savings (INR)	2800	2704	96	4%	335.98
Per capita Formal Savings (INR)	1353	1331	22	2%	228.51
Per capita Informal Savings (INR)	579	566	13	2%	69.60
Total Savings (INR)	9360	8731	629	7%	1107.76
Per capita Savings (INR)	1932	1897	35	2%	263.78

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

However, from table 5.2 we see that 6% more program households save in the formal source than the non-program households. Also, the percentage of program households who practice savings as a habit are 3% more than the non-program ones. Out of the total savings, program households save 6.3% more than the non-program households in formal sources and 3.63% less in the informal sources. These results tell us that although we did not find any impact of the program on the amount of formal and overall savings but we do see that more program participants are motivated towards savings in formal sources with a high share of savings as well.

Table 5.2: Impact of Program on Savings as a Habit

Outcome Variable	Treated	Control	Differences	S.E.
Whether saved in informal source	0.79	0.8	-0.01	0.031
Whether saved in formal source	1	0.94	0.06***	0.018
Whether saved or not	1	0.97	0.03**	0.013
Share in formal savings (%)	69.69	63.39	6.3***	2.25
Share in informal savings (%)	30.3	33.93	-3.63***	2.16

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

Even if SHGs are not included in formal sources, there is no statistically significant difference between the amount and per capita formal savings between the program and non-program households. Also, we see no differences in the percentage of people practicing savings in formal sources. However, we do see that the share of formal savings of the program households falls by 15.49% than the non-program households. This result also shows that out of their total budget program households are preferring to save more amount in the SHGs.

Table 5.3: Impact of Program on Formal Savings (excluding SHG savings)

Outcome Variable	Treated	Control	Differences	Percentage Change	S.E.
Formal Savings (INR)	5531	6027	-496	-8%	920.70
Per Capita Formal Savings (INR)	1140	1331	-191	-14%	226.19
Share in Formal Savings (%)	47.9	63.39	-15.49***	NA	2.28
Whether saved in Formal Source	0.92	0.94	-0.02	NA	0.021

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

5.2 Expenditure

We don't see any program impacts on the expenditure patterns of the program and non-program households. Table 5.4 shows that there is no significant difference between program and non-program households in total monthly and per capita monthly expenditure on food, non-food, health and education. We also find no differences in the overall monthly and per capita monthly expenditure.

Table 5.4: Impact of Program on Monthly and Per Capita Expenditure (INR)

Outcome Variable	Treated	Control	Differences	S.E.
Monthly Food Expenditure	5080	4792	288	270.93
Monthly Non-Food Expenditure	3981	4050	-69	445.24
Monthly Health Expenditure	671	623	48	71.11
Monthly Education Expenditure	1826	1900	-74	396.01
Monthly Expenditure	9061	8842	219	570.83
Per Capita Food Expenditure	950	936	14	48.70
Per Capita Non-Food Expenditure	747	787	-40	87.43
Per Capita Health Expenditure	129	117	12	15.42
Per Capita Education Expenditure	327	340	-13	76.24
Per Capita Total Expenditure	1698	1723	-25	108.24

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

From, table 5.5 we see that there is no significant difference in the share of food, non-food, health and education expenditure of the program and non-program households. Overall, we see muted effect of program on expenditure pattern of program and non-program households in the intervention area.

Table 5.5: Impact of Program on Share of Expenditure

Outcome Variable	Treated	Control	Differences	S.E.
Share of food expenditure in a month for a household	60.58	58.44	2.14	1.43
Share of non - food expenditure in a month for a household	39.41	41.55	-2.14	1.43
Share of health expenditure in a month for a household	7.29	6.87	0.42	0.59
Share of education expenditure in a month for a household	14.61	14.8	-0.19	1.36

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

5.3 Loan Behavior

The major impact of the program is expected and can be seen in the loan taking habit of the program households. These loans are majorly taken through the channel of self-help groups. SHGs have been able to induce loan taking behavior in these households for utilization of the loans for different purposes. Table 5.6 shows that 42.4% more program households have taken loan than the non-program households. Also, the percentage of program households taking loan from formals sources is 45% higher than the non-program households. We did not find any significant difference between the groups in the loan taken from informal sources. On an average, the program households take 0.5 loans more than non-program households and 0.52 loans more from the formal sources. Also, 96.7% loans of program households are from formal sources whereas only 62.6% loans are from formal sources of non-program households. These results show that due to the program, loan taking behavior of the program households has increased that too especially from the formal sources which they would not have been able to access in the absence of the program.

Table 5.6: Impact of Program on Households Borrowing Behaviour

Outcome Variable	Treated	Control	Differences	S.E.
Proportion of people who took a loan	0.52	0.096	0.424***	0.030
Proportion of people who took formal loans	0.51	0.06	0.45***	0.027
Proportion of people who took informal loans	0.029	0.034	-0.005	0.015
Number of loans	0.62	0.12	0.50***	0.044
Number of formal loans	0.58	0.06	0.52***	0.033
Number of informal loans	0.04	0.06	-0.02	0.029
Share of formal loans taken	96.71	62.65	34.06***	6.99
Share of informal loans taken	3.28	37.34	-34.06***	6.99

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

Figure 5.1 shows that majority of the loans of program households are from the SHG channel only. These SHG loans are mainly internal loans (loans from savings of the members, 64%). Majority of the loans of non-program households are from relatives/friends (42%), nationalized bank (20%) and rural development bank (17%).

Figure 5.1 - Sources of loan

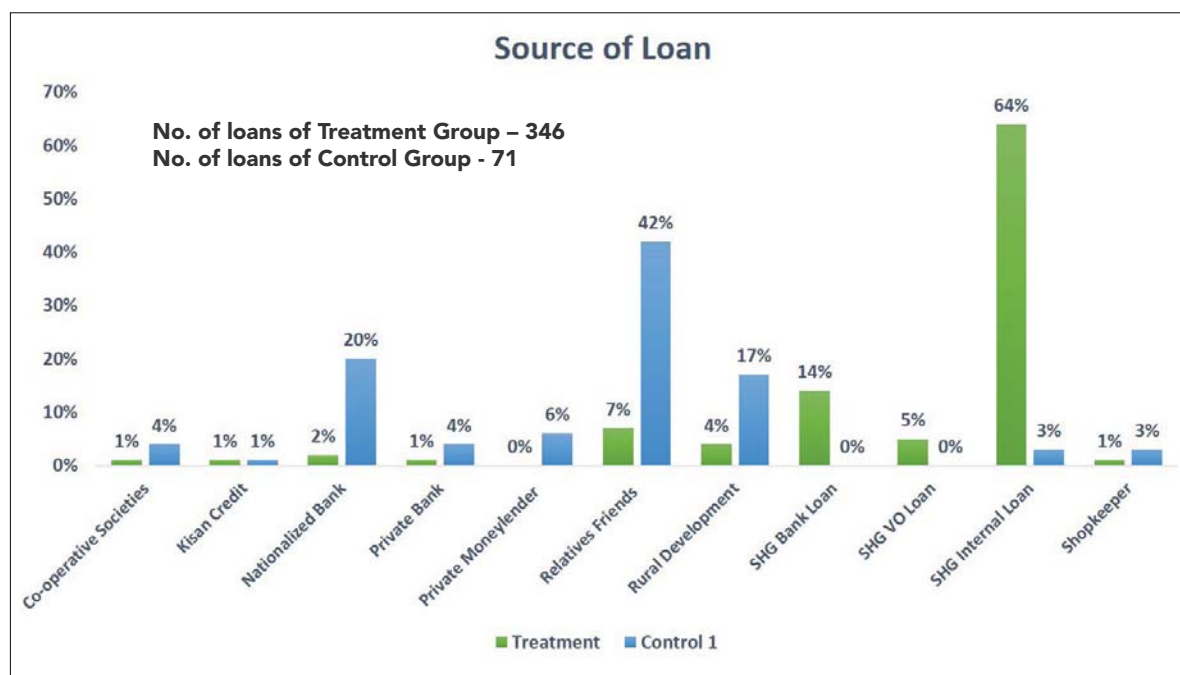


Table 5.7 below shows that the average size of loan taken by the program households in case of formal source loan is 75% (INR 76265) less than the non-program households. We also find the average size of informal loans of program households less than the non-program households, but the results are statistically insignificant. This shows that loan size of the program households is quite small. There are two possible reasons; firstly, high percentage of SHG internal loans for program households whose sizes are quite less. Secondly, the number of loans taken by the non-program households are quite less as compared with the program households and high percentage of loans are from banks whose size are generally large which can also be a reason. We don't find any significant difference in the moratorium period and age of the loan of the program and non-program households.

Table 5.7: Impact of Program on Size and Duration of Loan

Outcome Variable	Treated	Control	Differences	Percentage Change	S.E.
Average size of informal loans of a household (INR)	7260	615657	-8397	-54%	7392.48
Average size of formal loans of a household (INR)	26010	102275	-76265***	-75%***	28629.89
Average moratorium period of loans in a household (Years)	0.54	0.48	0.06	13%	0.068
Average number of years surpassed since the loan was taken in a household	1.26	1.26	0	0%	0.158

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

Table 5.8 shows that the interest rate of loans is higher for program household's and co-signer requirement for loans are higher for non-program households, however these results are statistically insignificant. But we do find a weak significant result for collateral requirement for a loan. 11.26% more loans of the non- program households require collateral. The results of this table for program household and non-program households (intervention area) are not similar with the results of program households and non-program households (non-intervention area). There are a few possible reasons for the differences in the results. First, the interest rate charged by relatives/friends in non-program households in non-intervention area is mostly 0% but the same is not the case with non-program households in intervention (no set pattern of range of interest). Second, dominance of relatives/friend's loan has reduced the requirement of co-signer and collateral. We also see that the proportion of loans in which the amount received was less than the amount demanded is higher for non-program households by 10.5%. The amount of loan received is less than demanded for the non-program households by 98% (INR 4342) but the result is statistically insignificant.

Table 5.8: Impact of Program on Interest Rate, Collateral and Co-signer Requirement

Outcome Variable	Treated	Control	Differences	S.E.
Average interest rate of loans in a household	11.48	9.87	1.61	1.53
Percentage of loans in which collateral was needed for a household	18.91	30.17	-11.26*	6.51
Percentage of loans for which co-signer was needed for a household	27.28	37.64	-10.36	7.53
Proportion of number of loans received less than demanded by a household	0.01	0.115	-0.105**	0.042
Amount of loan received that was less than applied (INR)	76.03	4419	-4342.97	3856.47

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

Table 5.9 shows that, in case of utilization of loans for different purposes, we do not find any significant difference between the two groups in the percentage of households taking loan for productive and non-productive purposes. We also don't find statistically significant difference in the share of productive and non-productive loans between the two groups. However, percentage of households who take at least one loan for consumption and livestock purpose are 13.6% less and 13.1% more for program households respectively. No significant difference is observed for the loans taken for medical, education, agriculture, enterprise and other purposes.



Table 5.9: Impact of Program on Purpose of Loan Utilization

Outcome Variable	Treated	Control	Differences	S.E.
At least 1 consumption loan in a household	0.05	0.186	-0.136**	0.059
At least 1 medical loan in a household	0.207	0.127	0.08	0.052
At least 1 livestock loan in a household	0.211	0.08	0.131***	0.046
At least 1 education loan was taken in a household	0.16	0.13	0.03	0.054
At least 1 agriculture loan was taken in a household	0.23	0.21	0.02	0.070
At least 1 enterprise loan was taken in a household	0.15	0.22	-0.07	0.064
At least 1 home loan was taken in a household	0.115	0.125	-0.01	0.049
At least 1 marriage/ funeral/ birth/ etc. loan was taken in a household	0.009	0.29	-0.281	0.0277
At least 1 loan was taken to clear prior mortgage or to free land	0.009	0	0.009	0.0065
At least 1 productive loan was taken in a household	0.709	0.634	0.075	0.075
At least 1 non- productive loan was taken in a household	0.382	0.4696	-0.0876	0.078
Share of productive loans of a household	0.66	0.59	0.07	0.073
Share of non-productive loans of a household	0.33	0.4	-0.07	0.073

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

5.4 Enterprise

The impact of the program is quite less in case of enterprise holdings of the program households. There is no statistically significant difference in the number of enterprises, hired workers, registered enterprise or not and whether a household has enterprise or not. We find that on an average program household have 0.22 extra workers from the family than the non-program households. Weak statistically significant result is seen in case of operating and total expense of the enterprise. The results show that on an average program household spends 47% (INR 12166) and 46% (INR 22945) more than the non-program households on operating and total expenses respectively in the last two years.

Table 5.10: Impact of Program on Enterprise

Outcome Variable	Treated	Control	Differences	Percentage Change	S.E.
Whether enterprise is present	0.243	0.23	0.013	6%	0.036
Number of Enterprise	0.254	0.237	0.017	7%	0.038
Enterprise Registered	0.06	0.47	-0.41	-87%	0.029
Enterprise Location	0.491	0.598	-0.107	-18%	0.067
Number of Hired Workers	0.767	0.886	-0.119	-13%	0.32
Number of Household Workers	0.784	0.557	0.227**	41%**	0.11
Capital Borrowed (INR)	14179	7779	6400	82%	4021.78
Sales of the Enterprise (INR)	150987	124049	26938	22%	20006.35
Operating Expenses (INR)	38023	25857	12166*	47%*	7416.78
Total Expenses (INR)	73320	50375	22945*	46%*	12730.64

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

5.5 Assets Portfolio

We estimated the impact of the program on livestock, consumption and productive assets portfolio. Program households have 0.33 (46%) more pigs than the non-program households. Also, 7% more program households have livestock compared to the non-program households. We don't see any significant difference in the average number of poultry and bovine livestock of the program and non-program households. The high number of pigs and more program households having livestock can be seen from the fact that utilization of loans is higher for livestock purposes.

Table 5.11: Impact of Program on Livestock Assets

Outcome Variable	Treated	Control	Differences	Percentage Change	S.E.
Cows	0.455	0.42	0.035	8%	0.125
Pig	1.04	0.71	0.33***	46%***	0.112
Poultry	1.8	1.95	-0.15	-8%	0.547
Buffalo	0.007	0.002	0.005	250%	0.103
Goat	0.115	0.114	0.001	1%	0.063
HH with No Livestock	0.396	0.465	-0.069*	NA	0.040

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

No statistically significant difference is observed in number of agricultural assets, high-value and low-value consumer assets between the two groups. However, we do see from table 5.12 that non-program households having productive assets are 7.7% more than the program households. Program impacts are not seen in the productive and high-value consumer assets because of the low size of loan taken by the program households.

Table 5.12: Impact of Program on Consumer and Productive Assets

Outcome Variable	Treated	Control	Differences	Percentage Change	S.E.
HH has any productive assets	0.519	0.596	-0.077**	NA	0.039
Number of Agricultural Assets	2.23	2.34	-0.11	-5%	0.316
Number of High Value Consumer Asset	1.1	1.193	-0.093	-8%	0.120
Number of Low Value Consumer Asset	9.7	10.31	-0.61	-6%	0.604

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

5.6 Agriculture

The program households have on an average 0.76 acre (38%) less agricultural land than the non-program households and yet we see impacts of the program on agriculture. Table 5.13 shows that on an average program households grow 0.25 (29%) more crops than the on-program households. Also, program households grow 0.165 (29%) and 0.04 more kharif and zaid crops respectively. There is no statistically significant difference in the agricultural income per acre. But we do see proportion of sale income to the total agricultural income of the program households higher by 14% than the non-program households. These results are similar to the result when compared with non-program households (non-intervention areas) and shows that despite of having less agricultural land, program households are much progressive in agricultural practices than the non-program households.

Table 5.13: Impact of Program on Agriculture

Outcome Variable	Treated	Control	Differences	Percentage Change	S.E.
Number of total crops grown in a household	1.129	0.876	0.253***	29%***	0.0915
Number of Kharif crops grown in a household	0.725	0.56	0.165**	29%**	0.0711
Number of Rabi crops grown in a household	0.318	0.274	0.044	16%	0.0439
Number of Zaid crops grown in a household	0.085	0.041	0.044*	107%*	0.0258
Total Agriculture Income per acre (INR)	24028	23405	623	3%	2682.89
Proportion of Sale Income to the total Agriculture Income	0.68	0.54	0.14***	26%***	0.137

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

5.7 Women Livelihood and Bargaining Power

Women's intra-household bargaining power has been calculated in the same way as in chapter 5. From table 5.14 shows that there is no statistically significant difference in the husband bargaining index, women bargaining index and women's relative bargaining power. The three possible reasons could be; first, Meghalaya is a matrilineal society where majority of women earn and feed the household. Second the money given in the game was hypothetical. Third, these two groups are from the same area so there might be less chances of difference in bargaining power. The female and male program households have 0.31 (27%) and 0.39 (27.3%) greater number of livelihoods than the non-program households.

Table 5.14: Impact of Program on Women's Livelihood and Bargaining Power

Outcome Variable	Treated	Control	Differences	Percentage Change	S.E.
HBI	0.489	0.491	-0.002	0%	0.004
WBI	0.488	0.494	-0.006	-1%	0.004
WBRRP	0.489	0.491	-0.002	0%	0.016
Number of livelihoods for female in a household	1.46	1.15	0.31***	27%***	0.096
Number of livelihoods for male in a household	1.828	1.435	0.393***	27.3%***	0.110

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

5.8 Income

This section mainly deals with the impact of the program on livelihood diversification and income through different sources. Table 5.15 below shows that there is no statistically significant difference between the number of distinct income sources between the program and non-program households. However, we do find that program households have a higher preference towards agriculture and allied activities including agriculture wage labour. This can be seen from the table as program households earning income from agriculture, livestock and agriculture wage labor are 11%, 7% and 11% more than the non-program households respectively. We also find that program household earning through MGNREGS and non-agriculture wage labor are 10% and 9% less than the non-program households. No statistically significant difference is seen in the enterprise as a source of income between both the group.

Table 5.15: Impact of Program on Livelihood Diversification

Outcome Variable	Treated	Control	Differences	S.E.
Proportion of HHs Agri. wage	0.48	0.37	0.11**	0.041
Proportion of HHs Non-agri. wage	0.5	0.6	-0.1**	0.039
Proportion of HHs MGNREGS wage	0.7	0.79	-0.09***	0.033
Proportion of HHs Agriculture	0.65	0.54	0.11***	0.040
Proportion of HHs Livestock	0.6	0.53	0.07*	0.067
Proportion of HHs Enterprise	0.24	0.23	0.01	0.036
Diversity Income Sources	3.61	3.59	0.02	0.109
Diversity Proportion Income Sources	0.401	0.399	0.01	0.012

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

Table 5.16 shows that that program household earn on an average 37% (INR 13012) and 22% (INR 9901) less income than the non-program households from agriculture and non-agriculture wage income respectively. The fact that earning of program households is less in case of agriculture wage income despite of more percentage of program households earning from agriculture wage is quite contradictory. The reason behind this could be lesser number of days worked by program households than the non-program households for agriculture wage income and focusing more on livestock and agriculture. We can see that program households earn 74% (INR 1877) more livestock income than the non-program households. Also, there is no significant difference in the agricultural income despite of program households having less agricultural land than the non-program households.

There is no statistically significant difference seen between the two groups in case of enterprise, pension and other sources of income. However, we can see in each of the cases the income of program households is more than the non-program households. Summing up, we can say that high preference of program households is seen towards livestock and agriculture as a source of income.

Table 5.16: Impact of Program on Income

Outcome Variable	Treated	Control	Differences	Percentage Change	S.E.
Agri-wage Income (INR)	22017	35029	-13012***	-37%***	2387.63
Non-Agri wage Income (INR)	34620	44521	-9901**	-22%**	3241.45
MGREGA wage Income (INR)	12156	12712	-556	-4%	673.04
Agriculture Income (INR)	23833	27614	-3781	-14%	3184.54
Livestock Income (INR)	4412	2535	1877*	74%*	1063.59
Enterprise Income (INR)	38833	36836	1997	5%	4543.31
Pension and Transfer Income (INR)	22741	10141	12600	124%	9618.70
Other Income (INR)	9492	5824	3668	63%	3668.58

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%.

6. Regional Comparative Analysis of Self-Help Groups

In this section, we present the results of comparative analysis of self-help groups (out of the 110 SHGs surveyed) in the three different regions of Meghalaya; Khasi, Garo and Jaintia hills. One thing to note here is that Jaintia Hills are relatively newer than the Khasi and Garo Hills in terms of SHG formation. The chapter also presents member's response towards SHGs on problems faced, additional support required and motivation factor in joining the SHGs.

6.1 Working of SHGs Surveyed

Table 6.1 below tells us the working of SHGs surveyed in the sample. The average number of members in a SHG in our study are 10.5 for the state. Average members in Jaintia, Khasi and Garo hills are 10.5, 10.8 and 9.9. All the SHGs in our sample practice weekly meetings. Weekly savings are done by 97.24% of the SHGs in the sample. Weekly book of accounts maintenance is quite low in Garo hills (76%) compared to other regions. Action taken against loan defaulters in SHGs in Garo and Khasi hills is more than 80%. However, In Jaintia hills only 15.38% SHGs take action against loan defaulters. Internal loaning is practiced in 88% of the SHGs in the state. Internal loaning in Garo hills is practiced in 78.94% SHGs which needs to be increased. All the SHGs in our sample have received RF and start-up fund and more than 80% SHGs in all the regions have received CIF. Almost all the SHGs (99.08%) do social activities in their village. Bank loan coverage is quite low in Garo hills and Jaintia hills. Overall, 53% of the SHGs in our sample have received bank loan. This percentage need to be increased in order to increase the loan sizes. Also, the percentage of SHGs reporting members leaving the SHGs are 66% in the state with highest percentage in Garo Hills (78%).

Table 6.1: Working of SHGs from the Sample Surveyed

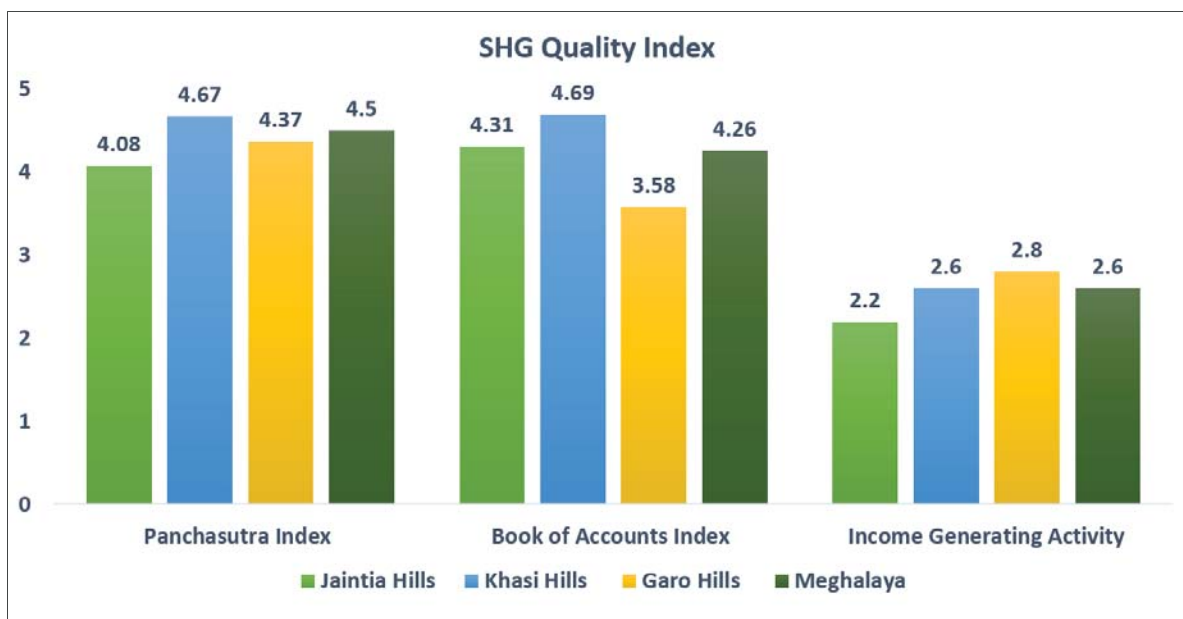
Sr. No.	Details	Khasi Hills	Garo Hills	Jaintia Hills	Meghalaya
1.	Average number of members in an SHG	10.8	9.9	10.5	10.5
2.	% SHGs with weekly meetings	100%	100%	100%	100%
3.	% SHGs with weekly savings	94.8%	100%	100%	97.24%
4.	% SHGs with weekly book of accounts maintained	100%	76.31%	92.3%	90.8%
5.	% SHGs taking action against loan defaulters	81.03%	81.57%	15.38%	73.39%
6.	% SHGs with inter-loaning	91.37%	78.94%	100%	88.07%
7.	% SHGs received CIF	84.5%	81.5%	84.6%	83.48%
8.	% SHGs received Bank Loan	63%	47%	23%	53%
9.	% SHGs involved in Social Activity	98.2%	100%	100%	99.08%
10.	% SHGs received RF	100%	100%	100%	100%
11.	% SHGs received Start-up Fund	100%	100%	100%	100%
12.	% SHGs whose any member left	58%	78%	61%	66%

6.2 SHG Quality Index

SHG quality index in the analysis includes five different indexes. These are Panchasutra, Book of Accounts, Income Generating Activity, Performance and Implementation Index. Figure 6.1 shows the first three index. The indices in the figure are on a scale of 5. Each index has five variables for measurement and each of them have been given equal weight. Panchasutra index includes five basic adherence norms of an SHG. These are weekly book of accounts maintained or not, weekly meetings done or not, weekly savings practiced or not, action taken against loan defaulters or not and internal loan practiced or not. We see that all the regions have an index score above 4 which shows they are following Panchasutra on a regular basis. Among the three regions Khasi hills performance is the highest. Overall, for the state also the Panchasutra index is 4.5.

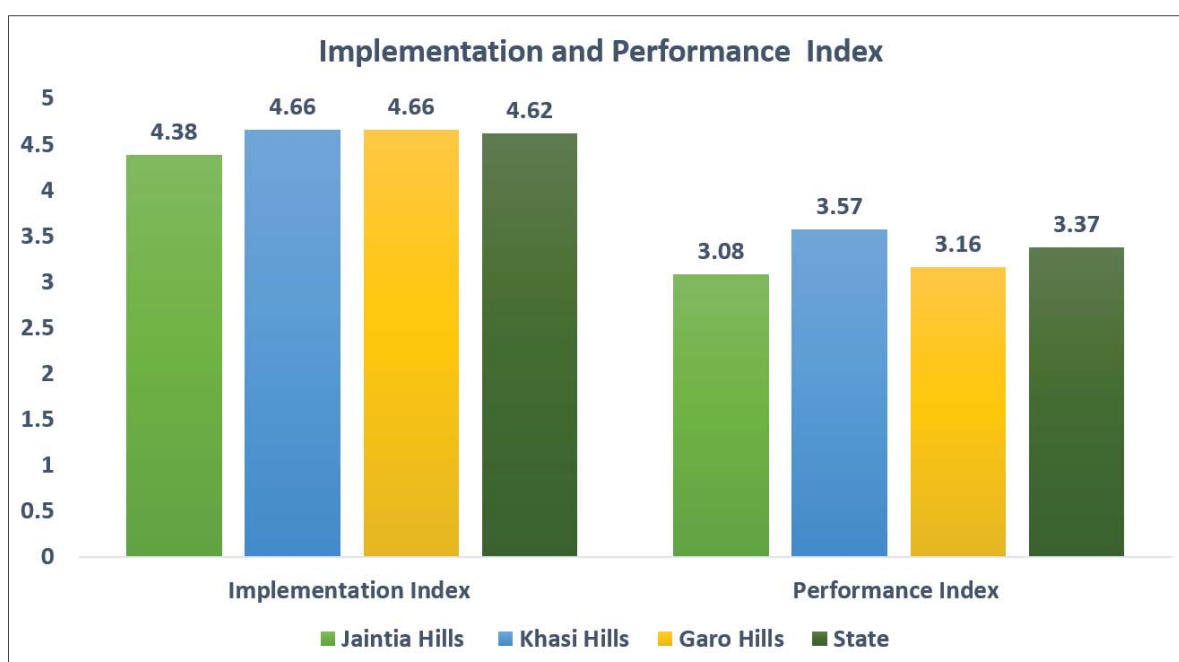
Second index is the book of accounts index, which includes whether minutes book, cash book, general ledger and loan ledger are prepared or not and weekly books of account prepared or not. Preparing and maintaining all the book of accounts is a key for growth of SHGs for keeping transparency in the loan distribution process. Garo hills performance is quite low in comparison with other region with an index score of 3.58 whereas other regions have index score above 4. Khasi hills is the highest performing among all with a very high index score of 4.69. Third index is the income generating activity which includes whether CIF received or not, bank loan taken or not, involvement of support funds in income generating activity, group and social activity done or not and whether involved in income generating activity. We find that SHGs are not majorly involved as a group in income generating activity. Figure 7.1 shows that in all the regions the index is quite low.

Figure 6.1: Region-wise - SHG Quality Index (Panchasutra, Book of Accounts and Income Generating Activity Index)



The last two indexes, implementation and performance index are shown in figure 6.2. Implementation index includes the variables which are the part of implementation process from MSRLS end. These variables are whether SHGs received Community Investment Fund, Revolving Fund, Start-up Fund, Micro Credit Plan and savings bank account or not. The index is on a scale of 5. The results shows that the implementation of SHGs across the three regions have been done quite efficiently, all the regions have index score above 4.3 with equal index score of Khasi and Garo Hills. Performance index focusses on SHG-Bank linkage (applied for loan or not, frequency of transaction and repaying loans regularly or not), increase in savings or not, loans given to members from the community support funds and any member left or not. This index is on a scale of 6. We see that Khasi hills is performing better than other hills here also. The index score is not very high on a scale of 6 because of less SHG and bank linkage in the state.

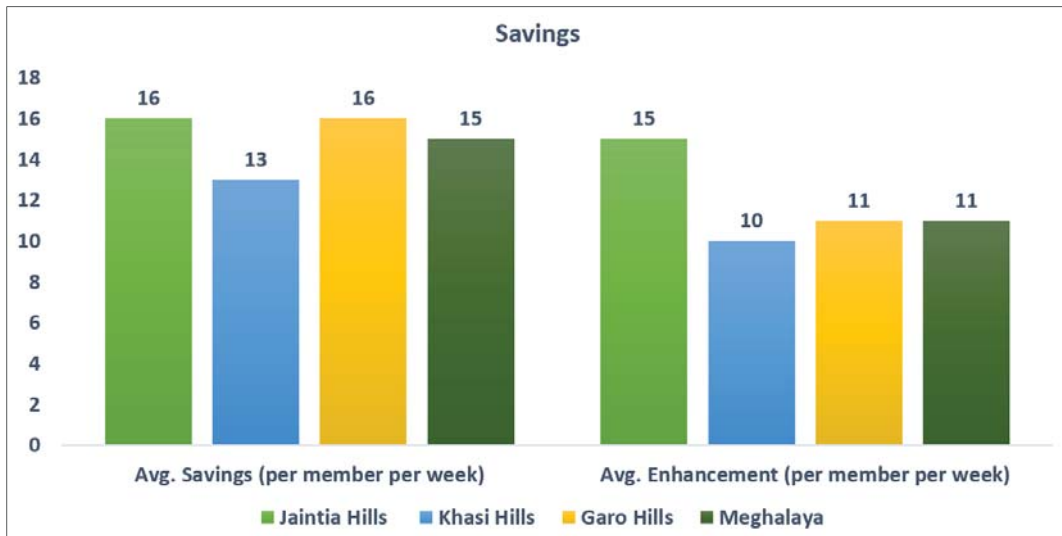
Figure 6.2: Region-wise - SHG Quality Index (Implementation and Performance Index)



6.3 Savings in SHGs

The household survey result shows that average monthly savings in SHGs by a household is INR 56. Figure 6.3 shows that average savings per member per week in SHGs in the state is INR 15. The savings across the regions is also close to INR 15 but one thing here noteworthy is that average enhancement in savings per member per week is high. In Khasi hills average enhancement is INR 10 similarly for Garo, Jaintia hills and entire state enhancement in savings is INR 11, INR 15 and INR 11 respectively. Average initial savings for Khasi, Garo and Jaintia hills were INR 3, INR 5 and INR 1. This shows that initially when these SHGs were formed their savings per member was very less but over the years they have increased savings substantially. SHGs as a group are focusing on increasing savings internally in the group in order to ensure that overall internal lending process increases within the group.

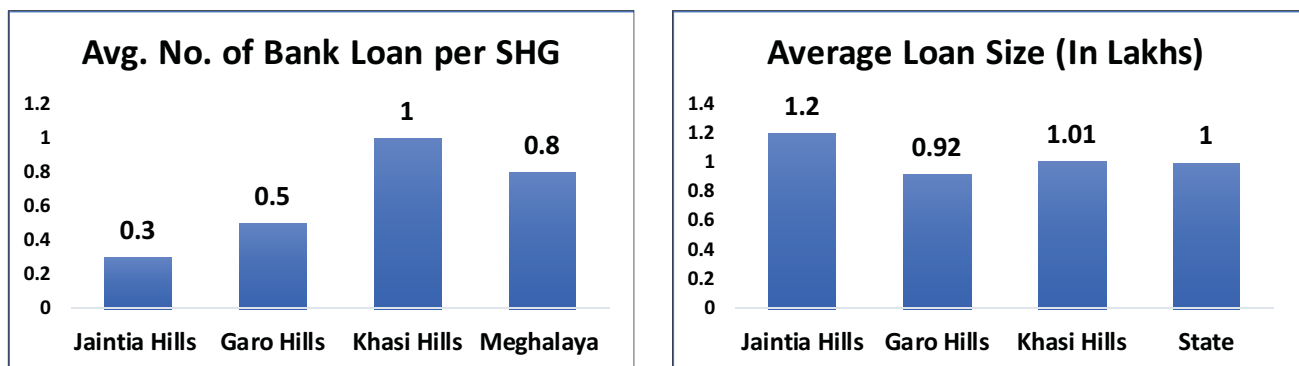
Figure 6.3: Region-wise – Savings and Enhancements in Savings

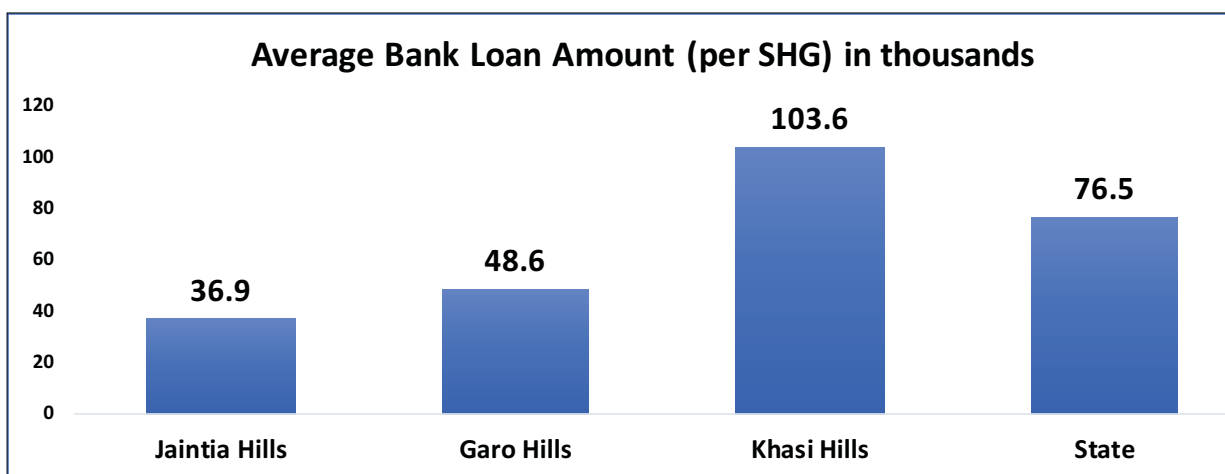


6.4 SHG-Bank Linkage

SHGs who have applied for a bank loan at least once in Jaintia, Garo and Khasi Hills is 30%, 57% and 65% respectively. Out of those who have applied for bank loan, 75% in Jaintia Hills, 81% in Garo Hills and 97% in Khasi Hills have received bank loan and in the state 90.6% have received loan. Out of the SHGs who have received loans the average number of loans received are 1.33, 1.11 and 1.59 in Jaintia, Garo and Khasi hills. If we take all the SHG into consideration figure 6.4 shows that on average number of bank loans received per SHG is 0.3, 0.5 and 1 in Jaintia, Garo and Khasi Hills respectively. The average number of loans are quite less for Jaintia and Garo Hills. Jaintia hills are relatively new in SHG formation compared with other hills so the average number of loans can be less. But the lesser number of loans in Garo Hills shows that there is a need to increase SHG bank linkage in Garo hills. Figure 6.4 also shows that the average bank loan size received is close to INR 1 lakh for all the hills and the average bank loan amount per SHG is high in Khasi hills when compared to other regions. Overall, there is a need to increase bank loans coverage to SHGs and number of loans given per SHG in order to increase the loan size for increasing economic activities of these households.

Figure 6.4: Bank Loans

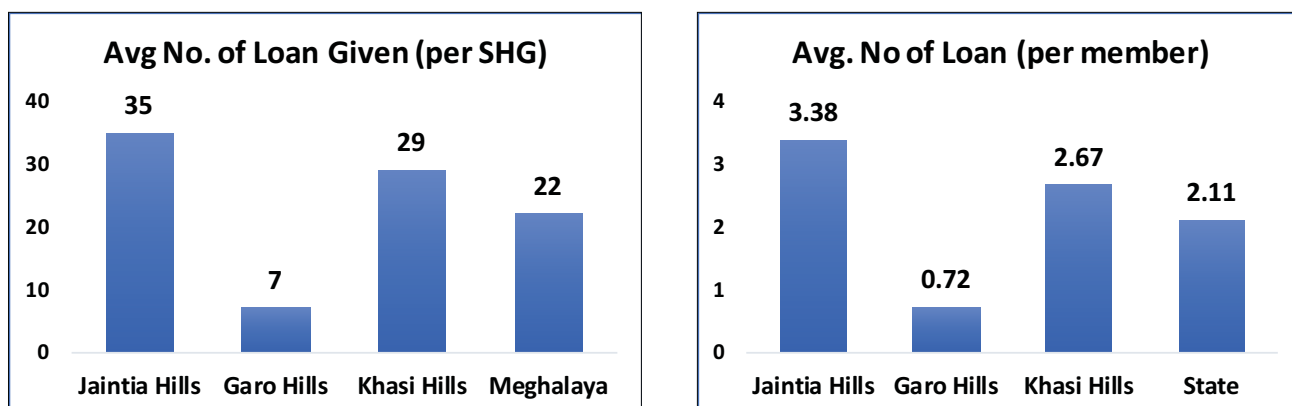


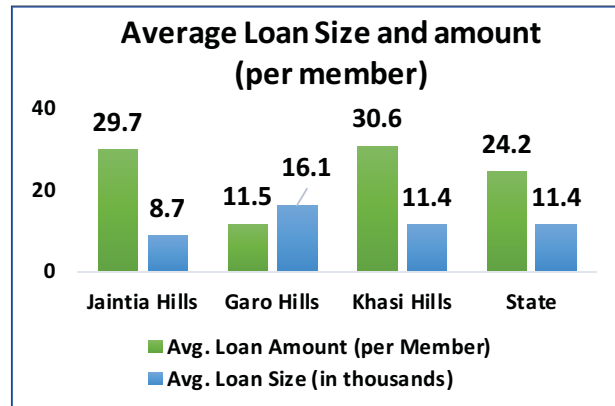
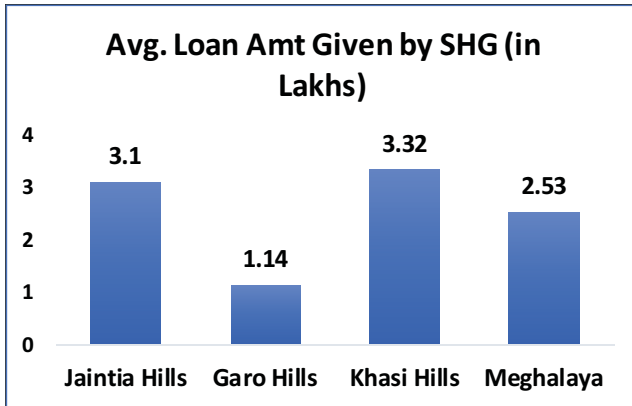


6.5 Individual SHG Member Loan

This section is on the analysis of loans distributed by the SHG to their members. The first two graphs of figure 6.5 shows the average number of loans given to its members by each SHG till date and average number of loans taken by the members. Average loan given by SHGs is quite high in Khasi and Jaintia hills. But the average loan given by SHGs in garo hills is quite less, on an average a SHG in garo hills has given only 7 loans. The average number of loans received by a member in Khasi and Jaintia hills is quite high with 3.38 and 2.67 loans respectively but the number is quite low in garo hills (0.72). The last graph of figure 6.5 shows the average loan amount taken by members and average loan size of the loans distributed to members. We see that on an average a member of SHG has taken 29.7 thousand and 30.6 thousand rupees loan in Jaintia and Khasi hills respectively whereas in Garo hills the amount is just 11.5 thousand rupees. The average loan size ranges from 8.7 to 16.1 thousand rupees in all the regions.

Figure 6.5: Individual Loan to Members





The average interest rate charged on a loan is 12.9%, 15.6% and 12.0% in Jaintia, Garo and Khasi Hills respectively. Average interest rate charged for a loan to the members for the state is 12.59 in our sample. A SHG in Meghalaya generally charges 12% per annum (1% per month) interest on a savings/internal loan. Bank loan and community support fund loans generally range from 7% to 9%. The average interest rate in Garo hills is high because there are few SHGs in garo hills who charge an interest rate of 24% per annum (2% per month). Figure 6.6 shows us the percentage distribution of loan by SHGs through different sources. We see that the percentage of savings/internal loan is highest in all the regions except garo hills which tells us that the savings done by the members in Garo hills are not highly circulated in forms of loan. For the entire state also, savings loans are having the highest share with 54% which is in sync with the household survey data where it is 64%. The percentage of bank loan is the least for all the regions.

Figure 6.6: Distribution of Loans According to Sources

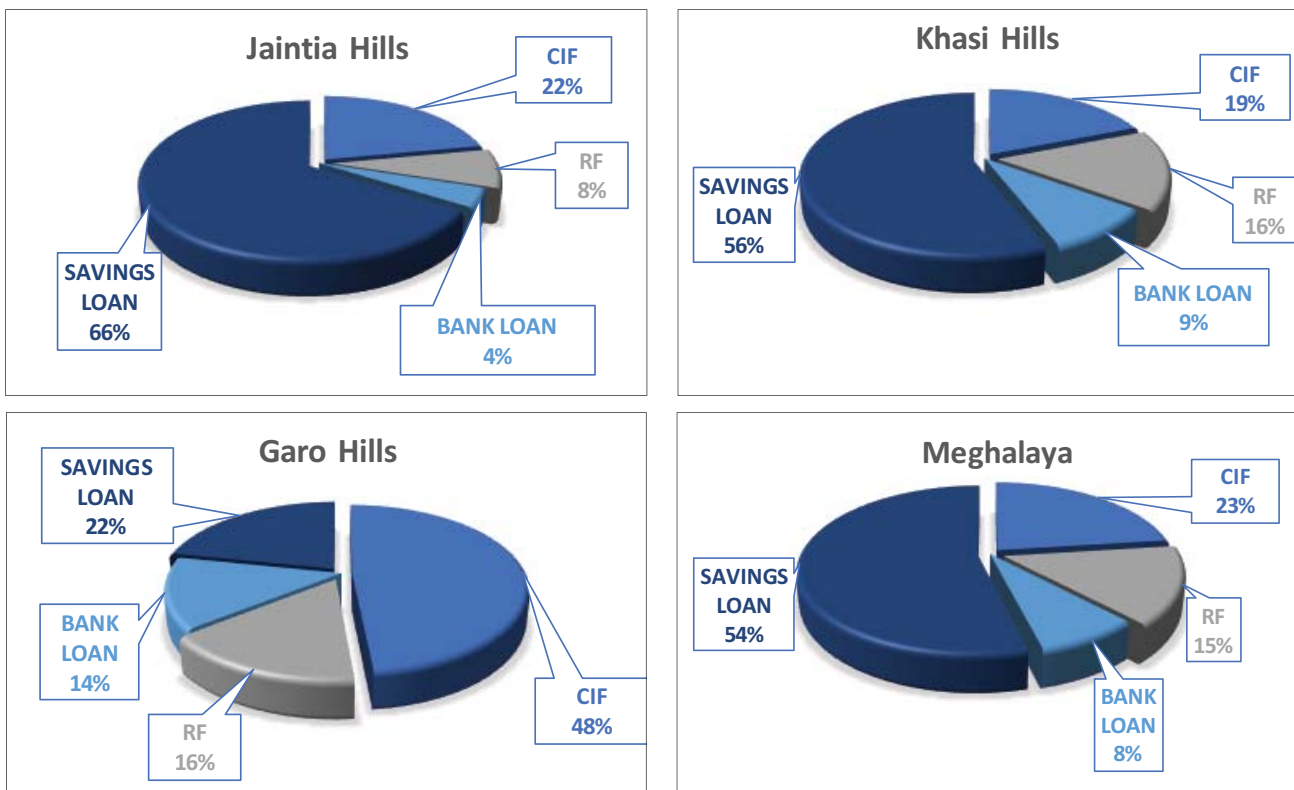
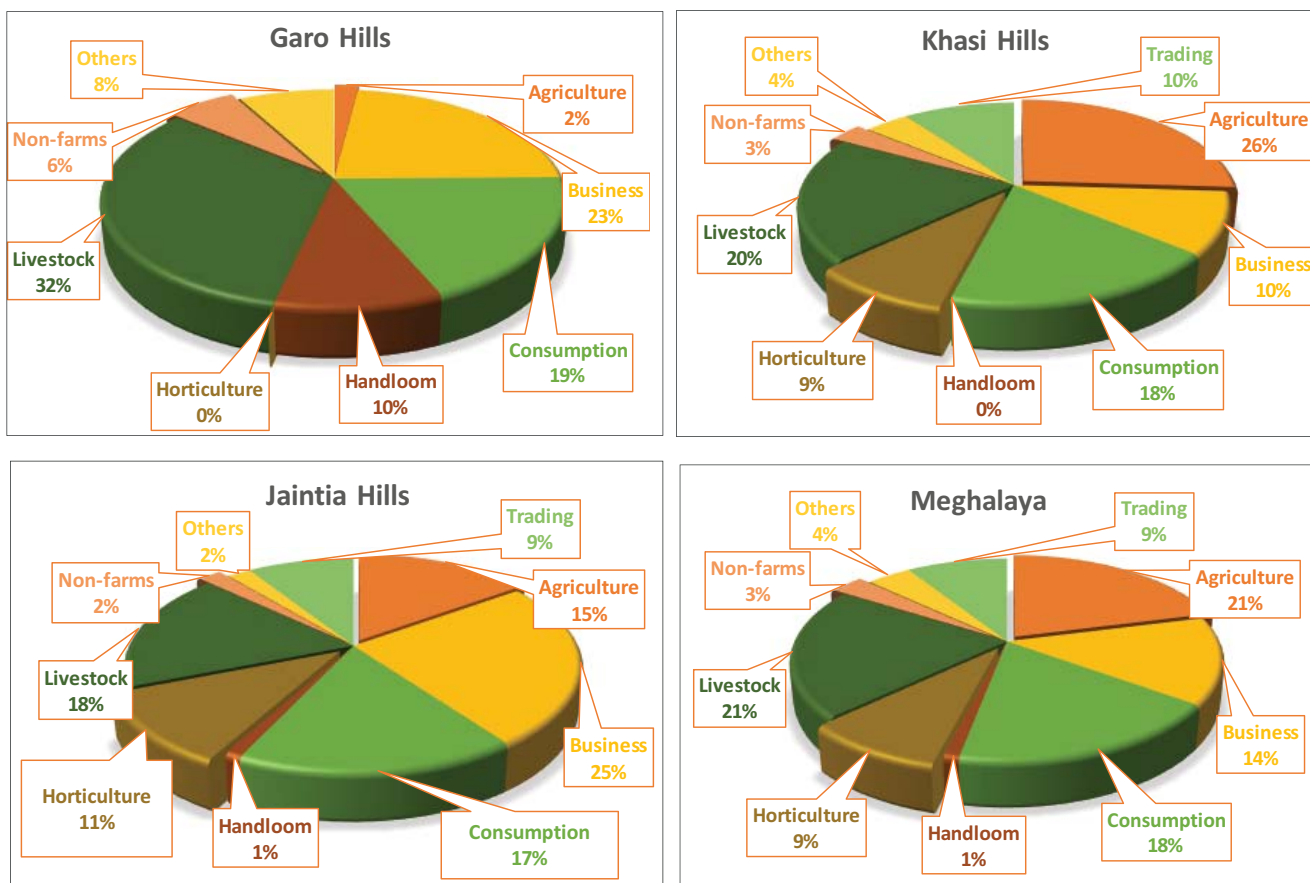


Figure 6.7 shows us the distribution of loans taken for different purposes in the three regions and state. We see that the SHG members take loan mostly for business (25%), livestock (18%) and consumption (17% including education and medical loan) purposes in Jaintia hills. In garo hills, high percentage of loans are taken for livestock (32%) and business (23%) purposes. In Khasi hills, high percentage of loans are taken for agriculture (26%), livestock (20%) and consumption (18%) purposes. Overall, for the state, high percentage of loans are utilized for agriculture and livestock purposes. This result substantiates the positive impact of program as shown in the household survey on livestock, agriculture and high capital borrowings for business in the recent years by the program households.

Figure 6.7: Purpose of Loan



6.6 Members response towards SHGs

Figure 6.8 shows that 53% of the SHG member say that the MSRLS staff were a major motivator for joining SHGs. Also, including MSRLS women activist the percentage rises up to 74%. This shows the importance given at the ground level by MSRLS for scaling up of the program. Also, high percentage of SHG member believe that their self-motivation (51%) and other SHG formation (16%) was also a major factor for them to join and in formation the SHGs. 51% of the program households said that they don't face any kind of problems in the SHG. Out of the households reporting problems, the major problems reported are internal conflict among group members (22%), no training received and no support for livelihood (16% each) and inadequate number of loan availability (13%).

Figure 6.8 Motivation Factor for SHG Member to Join SHGs

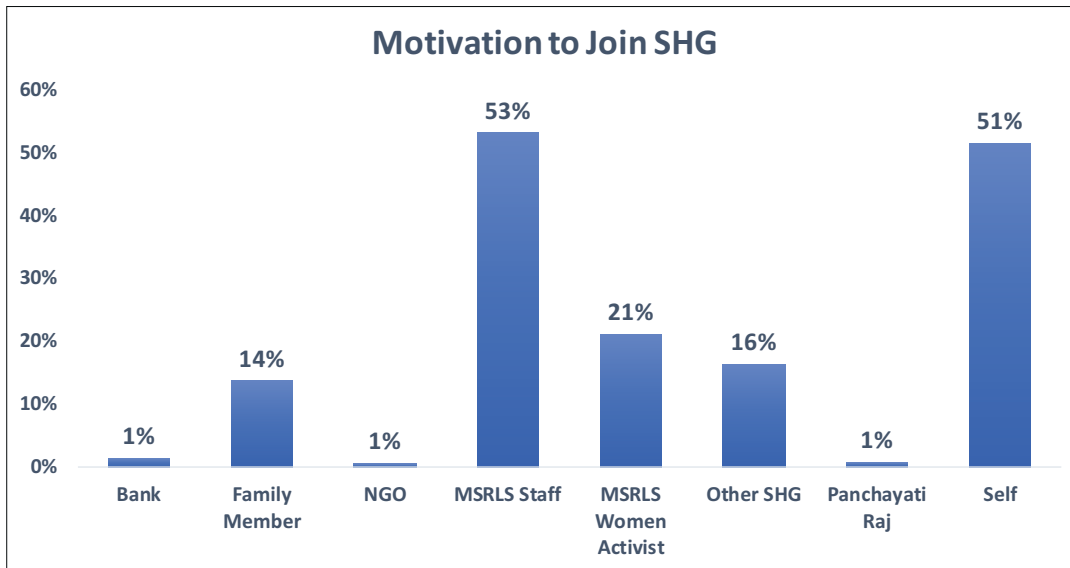


Figure 6.9 Problems in SHGs

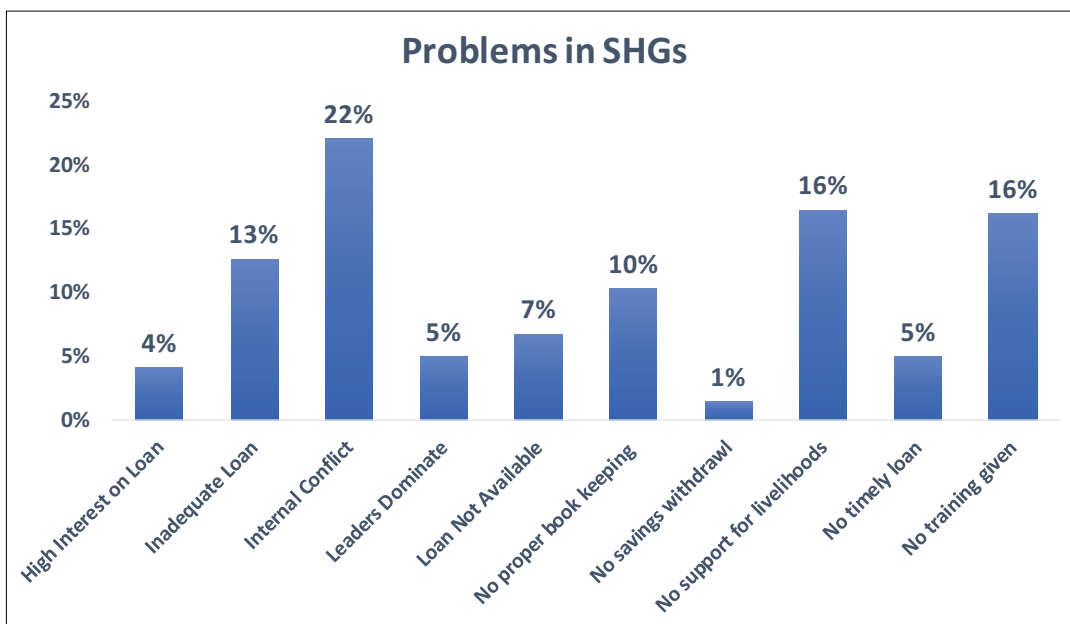
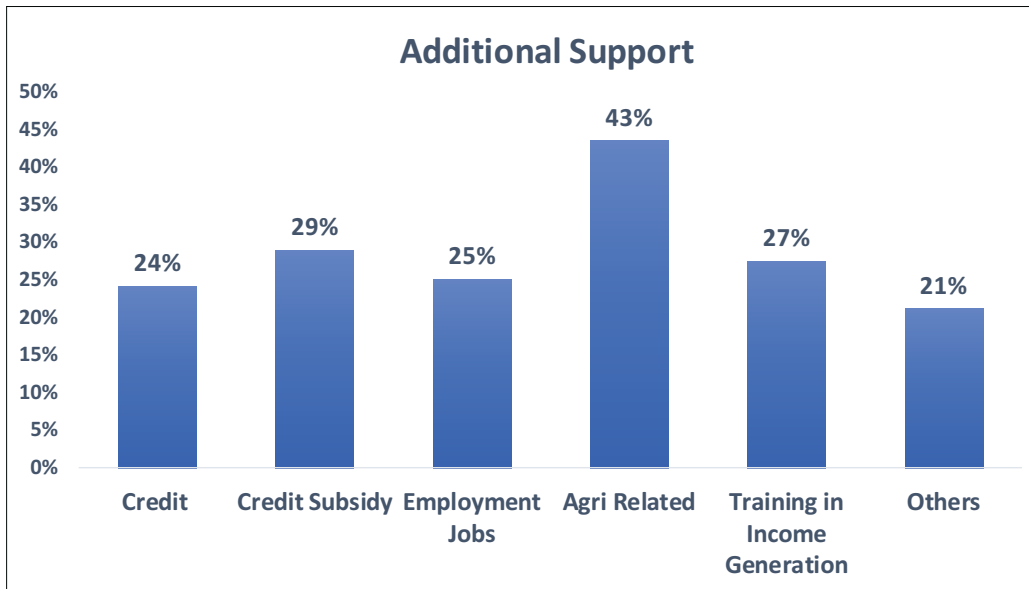


Figure 6.10 shows that the SHG members require additional support for agriculture (43%). Results in household survey have already suggested that the SHG households are growing a greater number of crops and are earning same income despite of having less farming land. Also, 29% of SHG households wants more credit subsidy, this result is mainly from Garo hills because there are a few SHGs in garo hills which still have interest rate of 24% per annum.

Figure 6.10 Additional Support Required to SHG Members



7. Regional Comparative Analysis of Village Organizations

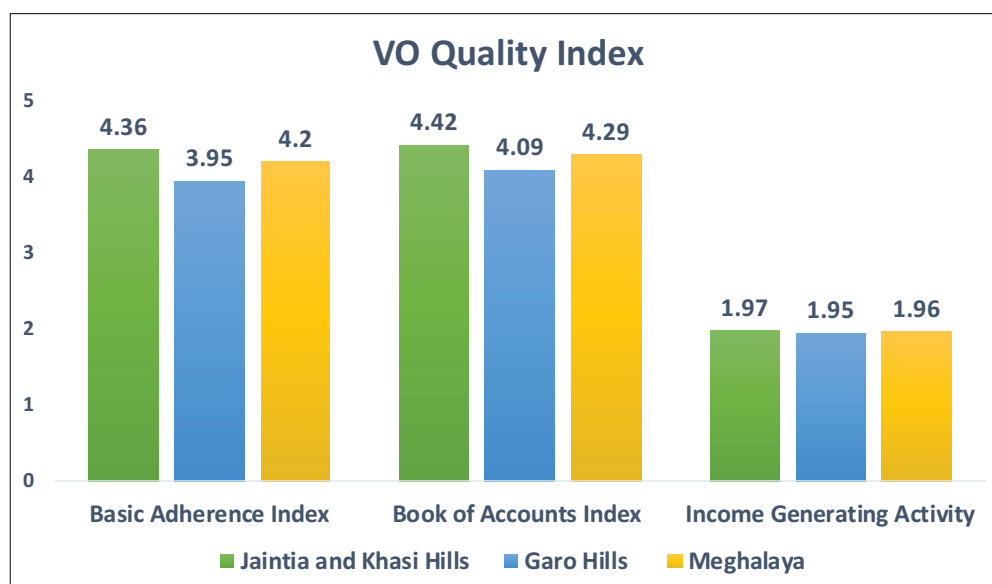
This section presents the comparative analysis of village organizations in the Khasi, Jaintia and Garo Hills. We have combined Khasi and Jaintia hills in analysis because of low number of village organizations selected from Jaintia Hills. This is due to the low number of matured village organizations (above 2 years of age) in Jaintia hills at the time of selecting the sample. On an average the number of SHGs per VO in Khasi and Jaintia Hills and Garo hills is 10.93 and 9.22 respectively. Overall, for the state average number of SHGs per VO is 10.25.

7.1 VO Quality Index

VO quality index in the analysis includes five different indexes. These are Basic Adherence Index, Book of Accounts Index, Income Generating Activity index, Performance Index and Implementation Index. Figure 7.1 shows the first three index. The indices in the figure are on a scale of 5. Each index has five variables for measurement and each of them have been given equal weight. Basic adherence index includes adherence norms which a VO has to follow in the state. These are monthly book of accounts maintained or not, monthly meetings done or not, loans given to SHGs, action taken against loan defaulters or not and monthly attendance >80% or not. We see that the index score for Khasi and Jaintia hills is 4.36 and state is 4.2 but Garo hills is a little lower 3.95. Overall, the index score suggests that the basic adherence norms are followed by the VOs regularly.

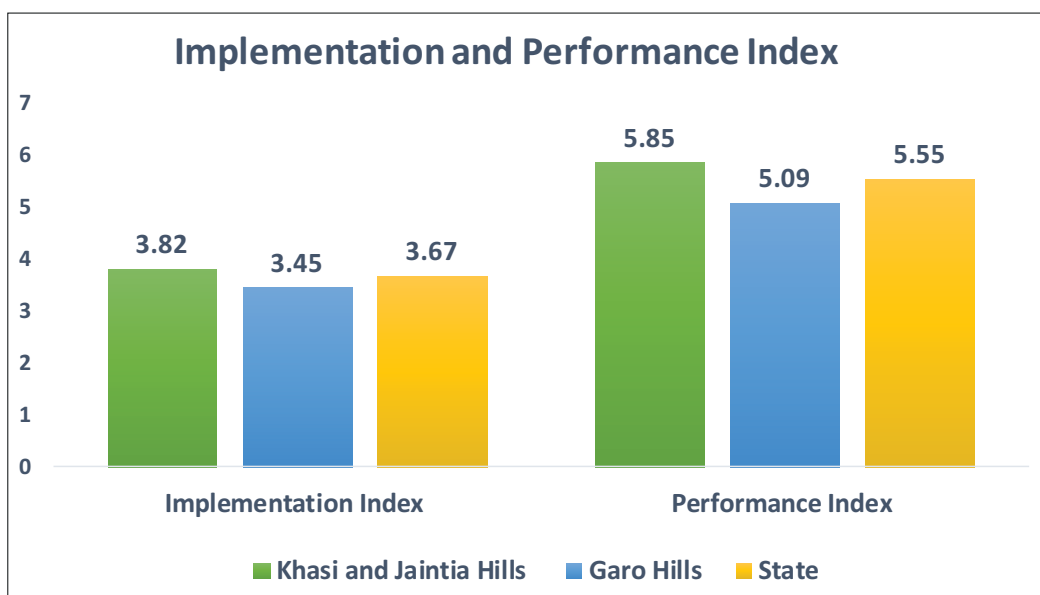
Second index is the book of accounts index, which includes whether minutes book, cash book, general ledger and loan ledger are prepared or not and monthly books of account preparation. Preparing and maintaining all the book of accounts is a key for growth of VOs and for keeping transparency in the loan distribution process to the SHGs. Both the regions have performed good in this index as the index score of both the hills is above 4. Third index is the income generating activity which includes whether CIF received or not, bank loan taken or not, involving support finds in income generating activity, participatory identification of poor done or not and whether involved in income generating activity. We find that VOs are not majorly involved as a group in income generating activity. Figure 8.1 shows that in all the regions the index is quite low (below 2).

Figure 7.1: VO Quality Index (Basic Adherence, Book of Accounts and IG Activity Index)



The last two indexes, implementation and performance index are shown in figure 7.2. Implementation index includes whether SHGs received Community Investment Fund, Vulnerability Reduction Fund, Start-up Fund, One-time VO cut off and savings bank account or not. The index is on a scale of 5. The results shows that the implementation of SHGs across the three regions have been done quite efficiently, all the regions have index score above 3.4. A slight dip can be seen in the index score because of less vulnerability reduction fund released in the state. Performance index focusses on VO-Bank transaction (applied for loan or not and frequency of transaction), written norms followed or not, loans given to SHGs or not, VO has cadres, sub-committees and rotation of leadership done or not. The index is on a scale of 7. We see that Khasi and Jaintia hills is performing better than Garo hills here with an average index score of 0.76 more. Overall, for both regions the performance index score is high (above 5).

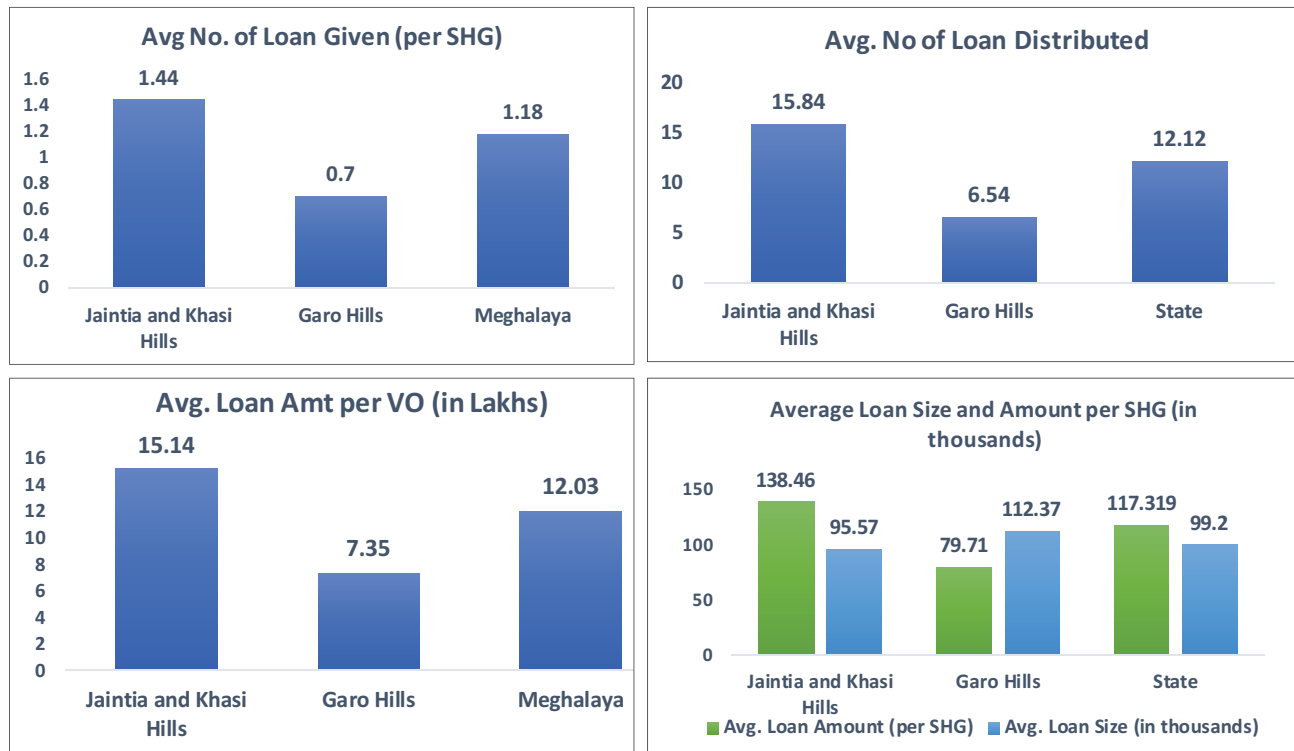
Figure 7.2: VO Quality Index (Implementation and Performance Index)



7.2 SHG Loans

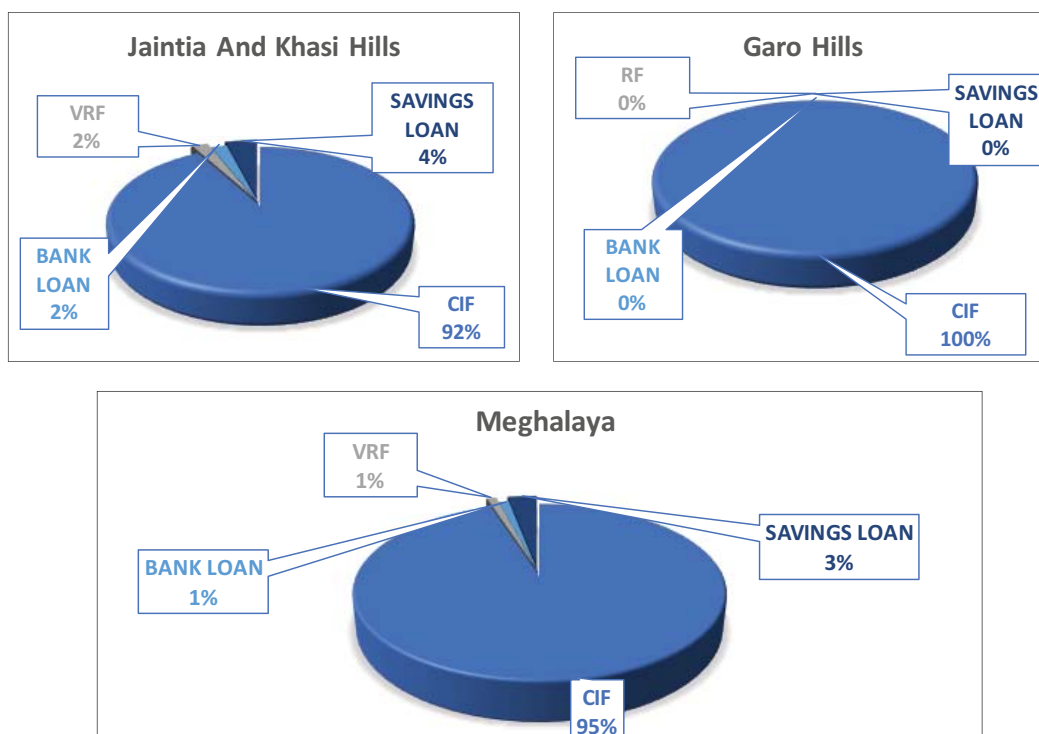
The average number of loans given by VO per SHG in the state is 1.18 loans. The first graph of figure 7.3 shows that the number of loans given by VO per SHG is 1.44 loans in Khasi and Jaintia hills but the number is just 0.7 loans in Garo hills which is quite less (not even one loan per SHG). The second graph shows the average number of loans distributed per VO, on an average VOs in garo hills (6.54 loans) distribute less than half the number of loans distributed in Khasi and Jaintia hills (15.84 loans). From the third graph we see that the average amount of loan given by a VO in Garo hills (INR 7.65 lakhs) is also half of Khasi and Jaintia hills (INR 15.14 lakhs). The last graph shows the average amount of loan given by VO to a SHG and loan size. Here, we see that the loan size of Garo hills is high and average loan amount is high for Khasi hills.

Figure 7.3: VO Loan to SHGs



The average interest rate charged per loan is 9.3%, 12.0% and 9.9% for Khasi and Jaintia Hills, Garo Hills and the entire state respectively. The interest rate charged by VO to SHG for one loan ranges from 6% to 12% in the state, if the loan is given from community investment fund. Figure 7.4 is about the distribution of loans by VOs to SHGs through different sources. The results shows that the distribution of loan in the regions and state are mainly from the community investment fund (more than 90%). Very few loans distributed are from bank and VRF. The main reason for less VRF loans distribution is the number of VOs receiving VRF is less and less bank loan is the low percentage of VO and bank linkage.

Figure 7.4 – Sources of Loan Distributed by VOs



8. Conclusion and Recommendations

Our report presents the findings of an impact evaluation study of SHGs in Meghalaya. The study measured the impact of the program on household's economic welfare (savings habit, loan taking behavior, assets portfolio, income etc.) and women's intra-household bargaining power. We also did comparative analysis of performances of SHGs and VOs in the three regions (Khasi, Garo and Jaintia Hills) of Meghalaya.

We found that out of their total savings, the share of formal savings of the program households is more than the non-program households mainly saved in SHGs. Higher proportion of program households saved than the non-program households. In terms of loan taking behavior of the program households, we found a significantly large percentage of program households taking loans than the non-program households. These loans are mainly from the formal loan sources especially SHG loans. The utilization of loans by the program households are higher for medical and livestock purposes. We also find that the collateral and co-signer requirement for a loan is lesser for the program households than the non-program households. However, the size of loan is quite small of the program households. These results shows that the primary objective of the program in inducing savings habits and loan taking behavior have been met. SHG gave its beneficiaries the opportunity to get loans which they would have been unable to get in the absence of SHG program. Specifically, it has helped in expansion of credit to poor households in Meghalaya where the physical network of banks is below the national average. Also, households are now able to access loans at significantly lower interest rates.

There is not much difference in the expenditure pattern and enterprise level activities of the program and non-program households. However, we do see that the capital borrowing for enterprise purposes have gone up of the program households in the past two years which might result in higher income from enterprise level activity in future. We also see positive impact of the program on low-value consumer assets but no such impact is seen on agricultural and high-value assets. The reason could be the small loan amount taken by the program households.

One of the interesting findings of the study is the greater number of program households are practicing agriculture and growing a greater number of crops than the non-program households in spite of having lesser agricultural land. Also, there is no difference in the agricultural income of program and non-program households. High utilization of loan for livestock purpose has shown positive results in terms of livestock income of the program households. Livestock income of the program households is significantly higher than the non-program households. Also, a greater number of program households practice livestock as a source of income compared with non-program households.

We did not find significant results in the number of livelihoods for a female household's member. The reason we expect is matrilineal society in Meghalaya where females are also involved in livelihood activities. Along with it, no significant differences were found in the bargaining power of women in the households across the two groups.

The regional comparative analysis of the three regions shows that Khasi hills are performing better than the other regions. The performance of Garo Hills in terms of loan taking behavior and maintaining book of accounts is quite low compared with the other regions. We find that SHGs are adhering to the basic norms of Panchasutra which is also

indicated in the behavioral shift in the financial activity of the program households from the household survey. The implementation of the program from MSRLS has been good which is evident from the Implementation Index score of the three regions. SHGs as a group are not involved much in income generating activity. We find the SHG bank linkage is quite less in the state especially in Garo hills which is one of the reasons for the low loan sizes. However, we do see that the majority of the loans taken by the SHG members are from the SHG internal savings of the members. Also, SHGs have been formed in all the districts and blocks of the state.

8.2 Recommendations

The limited loan size through community funds and internal savings will result in the limited impact of the program on the households and in turn on changing the economic status of the households. In order to enhance household's economic welfare there is a need to increase loan sizes, which can be done through SHG bank linkage. The SHG bank linkage will lead to an increase in the loan sizes of the members and bring desirable changes in the income and productive assets holdings of the program households.

Given the remoteness of Garo hills, the region needs specific focus to increase the financial activity of the households. This can be done through prolonged infusions of experienced personnel in ensuring that the community cadres are well trained to carry out the program objective in this region. Also, more focused training needs to be given in these areas, taking into considerations the capacity constraints. Better monitoring of SHGs meetings and equipping trainers with softer skills related to SHGs can also be undertaken. Though these methods may take longer time but it should be the way forward.

We see limited impact on entrepreneurial activity of the program households which is one of the objectives of the program in order to create access to gainful employment for rural poor households. Entrepreneurial activity can be encouraged through dedicated training modules for entrepreneurship through the RSETI and community cadre for livelihood support. Enhancing entrepreneurial activity is a next level challenge and hence will require targeted initiatives to achieve results. Also, push on enterprise should acknowledge and take into account and align with local population preferences as this will result in greater visibility and outcomes for the program. For example, in Meghalaya people have shown greater inclination to livestock as compared to enterprise activities.

Overall results discussed above shows us that the SHGs in Meghalaya have been able to induce behavioral shift in the financial activity of the SHG households along with diverse income opportunities. However, there are a few shortcomings which needs to be addressed. The SHG program in the current form may not be able to achieve some of the broader goals of the NRLM program and this also has to be acknowledged. This also indicates a resources allocation issue for SHGs as they work on diverse set of goals under NRLM.

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10. ANNEXURES

Annexure 1

Table A1: List of Covariates

Covariates	Definition
Distance to the post office	Distance of the household from the nearest post office
Dependency Ratio	Ratio of the dependent members in the household to the total number of members
Head of HH has at least primary education	Whether the head of the household has at least primary education?
Head of the household is illiterate	Whether head of the household is illiterate?
Household head is female	Whether head of the household is female?
Age of the head of household	Age of the head of households (in years)
Square of age of head of the household	Square of age of head of the household (in years)
Head of Household is Married	Whether head of the household is married?
Household is SC/ST	Whether household is SC/ST?
Household is Christian	Whether household is Christian?
No. of small livestock (2014)	Number of small livestock (goat, sheep and pig) owned by the household in 2014
No. of Bovine livestock (2014)	Number of bovine livestock (cow and buffalo) owned by the household in 2014
No. of Agricultural Assets (2014)	Number of agricultural assets owned by the household in 2014
No. of low value durable assets (2014)	Number of low-value durable assets (mobile, fan, utensils, LPG etc.) owned by the household in 2014
No. of high value durable assets (2014)	Number of high value durable assets (refrigerator, vehicle, television motorcycle etc.) owned by the household in 2014

Table A2: Selection Model (Treatment and Control I)

VARIABLES	Probability of being an SHG household
Distance to the post office	0.00356 (0.00364)
Dependency Ratio	-0.685** (0.343)
Head of HH has at least primary education	0.0771 (0.0923)
No. of small livestock (2014)	0.103** (0.0437)
Household head is female	0.139 (0.0931)
Age of the head of household	0.0493*** (0.0187)
Square of age of head of the household	-0.000488** (0.000201)
Household is Christian	-1.361*** (0.189)
Household is SC/ST	-0.169 (0.636)
Head of the household is Illiterate	-0.338*** (0.130)
Head of Household is Married	0.453*** (0.113)
No. of Bovine livestock (2014)	-0.114** (0.0472)
No. of Agricultural Assets (2014)	-0.0894*** (0.0134)
No. of low value durable assets (2014)	0.00912 (0.00688)
No. of high value durable assets (2014)	0.0660 (0.0506)
Constant	0.00805
Observations	(0.778) 1,102

Table A3: Selection Model (Treatment and Control II)

VARIABLES	Probability of being an SHG household
Distance to the post office	0.0281*** (0.00486)
Dependency Ratio	-0.878*** (0.317)
Head of HH has at least primary education	0.101 (0.0979)
No. of small livestock (2014)	0.126*** (0.0409)
Household head is female	0.519*** (0.0939)
Age of the head of household	0.0724*** (0.0200)
Square of age of head of the household	-0.000820*** (0.000213)
Household is Christian	-0.112 (0.120)
Household is SC/ST	1.477*** (0.355)
Head of the household is Illiterate	-0.387*** (0.122)
Head of Household is Married	0.249** (0.123)
No. of Bovine livestock (2014)	-0.247*** (0.0448)
No. of Agricultural Assets (2014)	-0.0618*** (0.0167)
No. of low value durable assets (2014)	0.0614*** (0.0127)
No. of high value durable assets (2014)	-0.0230 (0.0510)
Constant	-3.524*** (0.584)
Observations	1,101

Table A4: Balancing Test (Treatment and Control I)

Variable	Unmatched(U) Matched (M)	Mean		Difference in Mean
		Treated	Control	
Distance from the Post Office	U	10.441	6.4165	63%*
	M	9.2614	8.8395	5%*
Dependency Ratio	U	0.06627	0.09718	-32%*
	M	0.06973	0.07583	-8%
Head of HH has at least primary education	U	0.54909	0.44646	23%
	M	0.55754	0.54439	2%
No. of small livestock (2014)	U	0.48182	0.40472	19%*
	M	0.38492	0.35567	8%*
Household head is female	U	0.47273	0.2922	62%
	M	0.44444	0.46975	-5%
Age of the head of household	U	41.98	43.909	-4%*
	M	41.77	41.844	0%
Square of age of head of the household	U	1909.9	2132.3	-10%*
	M	1894.3	1899	0%
Household is Christian	U	0.86182	0.79492	8%
	M	0.85317	0.86146	-1%
Household is SC/ST	U	0.99455	0.93103	7%
	M	0.99405	0.98958	0%
Head of the household is Illiterate	U	0.14182	0.2686	-47%
	M	0.14484	0.14804	-2%
Head of Household is Married	U	0.83636	0.83122	1%
	M	0.83135	0.84234	-1%
No. of Bovine livestock (2014)	U	0.17455	0.67151	-74%*
	M	0.18452	0.20769	-11%*
No. of Agricultural Assets (2014)	U	1.6891	2.1579	-22%*
	M	1.7599	1.6529	6%*
No. of low value durable assets (2014)	U	6.8382	5.2759	30%*
	M	5.7937	5.8279	-1%*
No. of high value durable assets (2014)	U	0.42364	0.36479	16%*
	M	0.41865	0.45009	-7%

Note: Mean Bias (Unmatched= 22.8%, Matched= 2.6%), Median Bias (Unmatched= 20.6%, Matched = 2.4%)

Table A5: Balancing Test (Treatment and Control II)

Variable	Unmatched(U) Matched (M)	Mean		Difference in Mean
		Treated	Control	
Distance from the Post Office	U	10.441	10.125	3%
	M	10.479	9.8754	6%
Dependency Ratio	U	0.06627	0.08115	-18%**
	M	0.06617	0.06354	4%
Head of HH has at least primary education	U	0.54909	0.52536	5%
	M	0.54662	0.54394	0%
No. of small livestock (2014)	U	0.48182	0.33514	44%**
	M	0.46435	0.48721	-5%
Household head is female	U	0.47273	0.41304	14%**
	M	0.46984	0.4871	-4%
Age of the head of household	U	41.98	42.322	-1%
	M	41.991	43.33	-3%*
Square of age of head of the household	U	1909.9	1976.4	-3%
	M	1911.2	2023.2	-6%*
Household is Christian	U	0.86182	0.97826	-12%***
	M	0.86654	0.85984	1%
Household is SC/ST	U	0.99455	0.99638	0%
	M	0.99452	0.99758	0%
Head of the household is Illiterate	U	0.14182	0.1721	-18%
	M	0.1426	0.17301	-18%
Head of Household is Married	U	0.83636	0.7663	9%***
	M	0.83547	0.84395	-1%
No. of Bovine livestock (2014)	U	0.17455	0.31159	-44%**
	M	0.1755	0.3086	-43%**
No. of Agricultural Assets (2014)	U	1.6891	2.9728	-43%***
	M	1.6929	1.9103	-11%
No. of low value durable assets (2014)	U	6.8382	6.8786	-1%
	M	6.83	7.2159	-5%
No. of high value durable assets (2014)	U	0.42364	0.28986	46%***
	M	0.42048	0.49967	-16%

Note: Mean Bias (Unmatched= 13.0%, Matched= 5.7%), Median Bias (Unmatched= 12.0%, Matched = 5.4%)

Figure A1: Common Support Graph (Treatment and Control I)

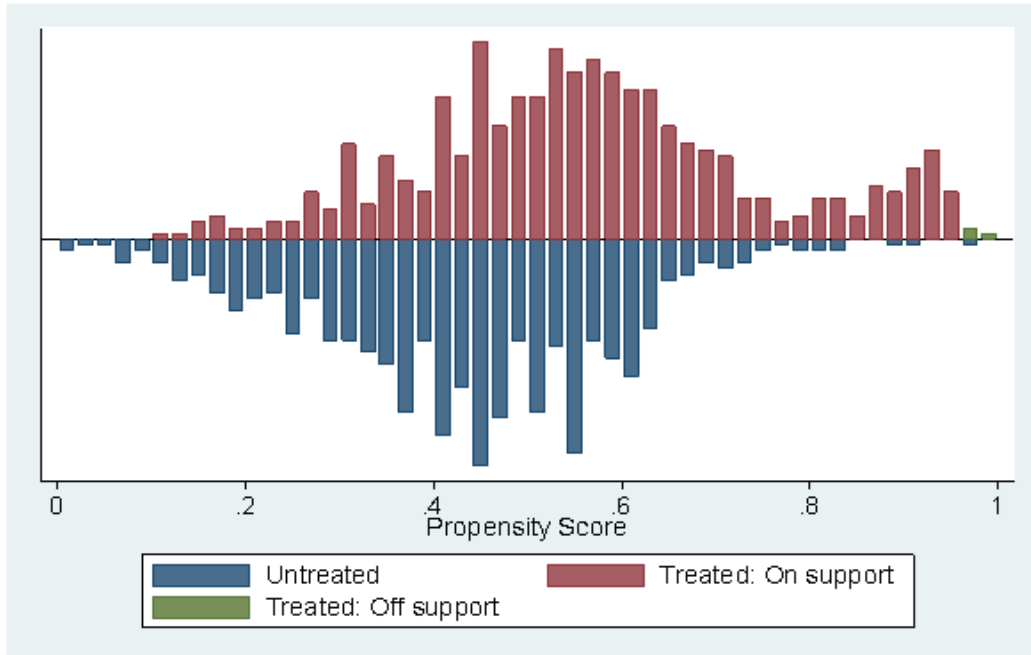


Figure A2: Common Support Graph (Treatment and Control II)

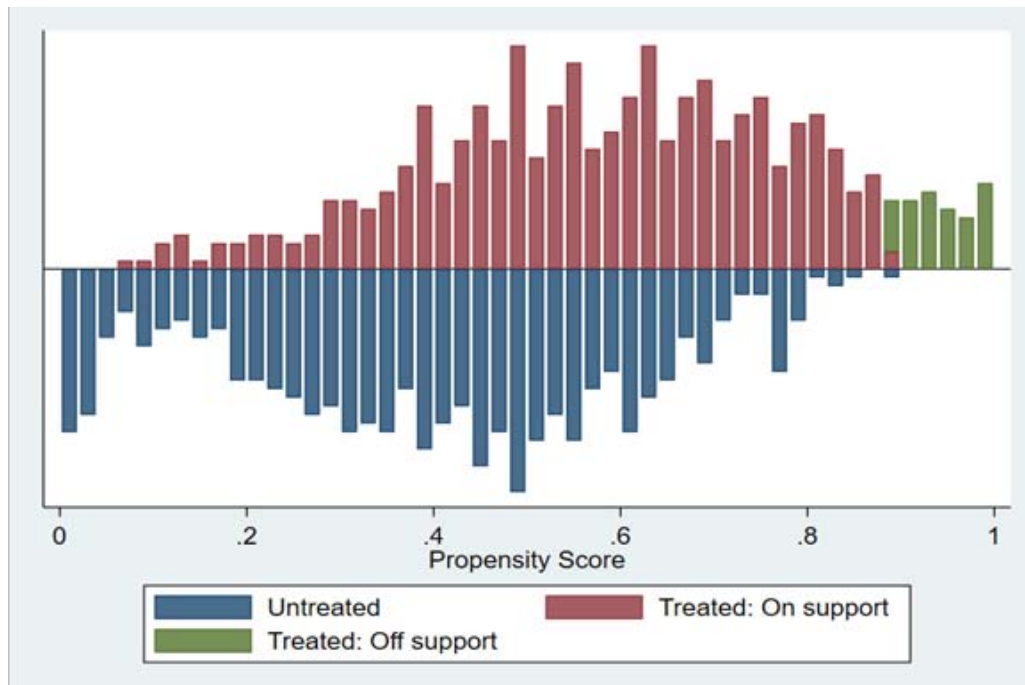


Figure A3: Kernel Density Estimate (Treatment and Control I)

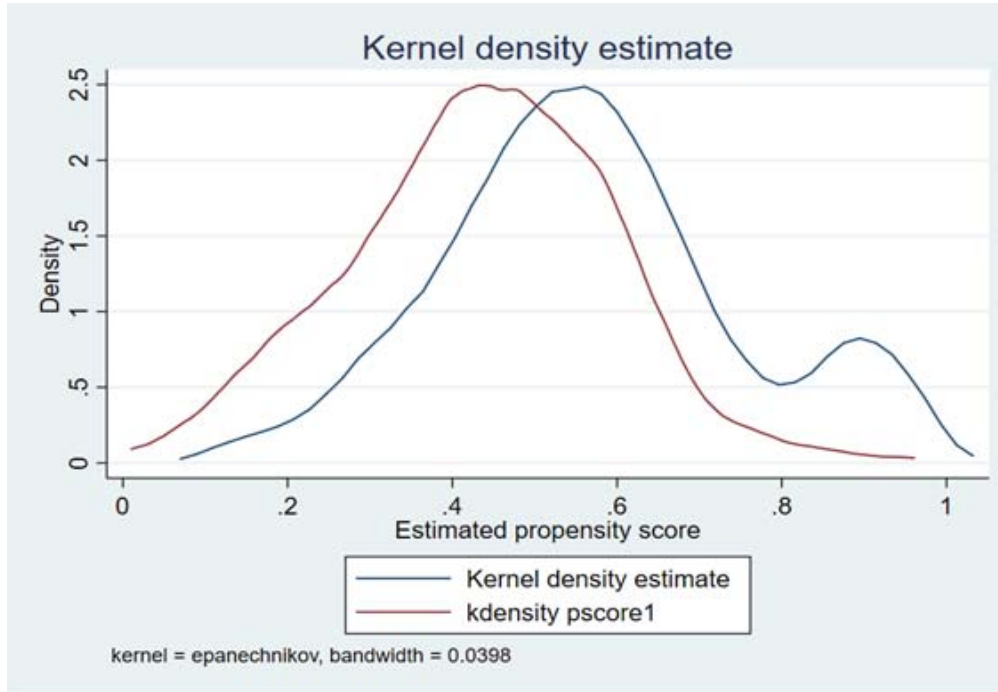
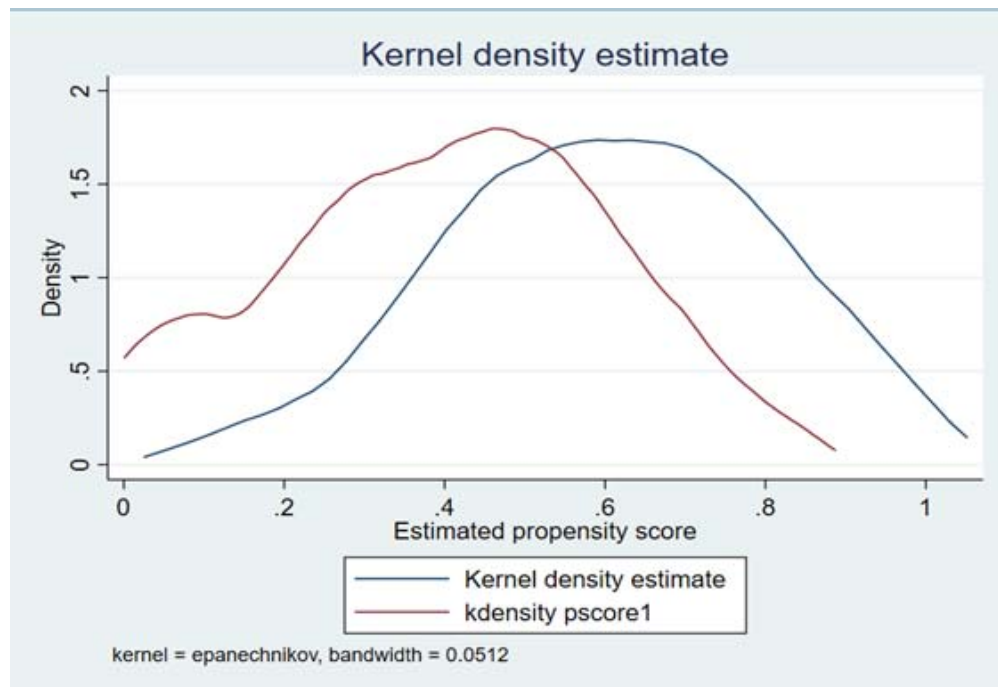


Figure A4: Kernel Density Estimate (Treatment and Control II)



Combined Results of Treatment and Control II and Treatment and Control I Analysis

Table A6: Impact of Program on Amount of Savings (INR)

Outcome Variable	Treatment and Control II			Treatment and Control I		
	Treated	Control II	Differences	Treated	Control I	Differences
Amount of Formal Savings (INR)	5918	6592	-674	6559	6027	532
Amount of Informal Savings (INR)	2682	3622	-940*	2800	2704	96
Per capita Formal Savings (INR)	1286	1378	-92	1353	1331	22
Per capita Informal Savings (INR)	582	838	-256*	579	566	13
Total Savings (INR)	8600	10214	-1614	9360	8731	629
Per capita Savings (INR)	1869	2216	-347	1932	1897	35

Table A7: Impact of Program on Savings as a Habit

Outcome Variable	Treatment and Control II			Treatment and Control I		
	Treated	Control II	Differences	Treated	Control I	Differences
Whether saved in informal source	0.78	0.76	0.02	0.79	0.8	-0.01
Whether saved in formal source	1	0.8	0.2***	1	0.94	0.06***
Whether saved or not	1	0.95	0.05***	1	0.97	0.03**
Share in formal savings (%)	69.82	55.36	14.46***	69.69	63.39	6.3***
Share in informal savings (%)	30.17	40.45	-10.28***	30.3	33.93	-3.63***

Table A8: Impact of Program on Formal Savings (excluding SHG savings)

Outcome Variable	Treatment and Control II			Treatment and Control I		
	Treated	Control II	Differences	Treated	Control I	Differences
Formal Savings (INR)	4872	6592	-1720**	5531	6027	-496
Per Capita Formal Savings (INR)	1067	1378	-311*	1140	1331	-191
Share in Formal Savings (%)	46.89	55.36	-8.47***	47.9	63.39	-15.49***
Whether saved in Formal Source	0.92	0.8	0.12***	0.92	0.94	-0.02

Table A9: Impact of Program on Monthly and Per Capita Expenditure (INR)

Outcome Variable	Treatment and Control II			Treatment and Control I		
	Treated	Control II	Differences	Treated	Control I	Differences
Monthly Food Expenditure	4762	4717	45	5080	4792	288
Monthly Non-Food Expenditure	3996	4398	-402	3981	4050	-69
Monthly Health Expenditure	663	684	-21	671	623	48
Monthly Education Expenditure	1811	1760	51	1826	1900	-74
Monthly Expenditure	8758	9116	-358	9061	8842	219
Per Capita Food Expenditure	926	1122	-196	950	936	14
Per Capita Non-Food Expenditure	763	986	-223	747	787	-40
Per Capita Health Expenditure	130	158	-28	129	117	12
Per Capita Education Expenditure	329	391	-62	327	340	-13
Per Capita Total Expenditure	1689	2108	-419	1698	1723	-25

Table A10: Impact of Program on Share of Expenditure

Outcome Variable	Treatment and Control II			Treatment and Control I		
	Treated	Control II	Differences	Treated	Control I	Differences
Share of Food Expenditure	59.6	56.08	3.52***	60.58	58.44	2.14
Share of Non - Food Expenditure	40.39	43.91	-3.52***	39.41	41.55	-2.14
Share of Health Expenditure	7.36	6.36	1*	7.29	6.87	0.42
Share of Education Expenditure	14.78	14.67	0.11	14.61	14.8	-0.19

Table A11: Impact of Program on Households Borrowing Behavior

Outcome Variable	Treatment and Control II			Treatment and Control I		
	Treated	Control II	Differences	Treated	Control I	Differences
Proportion of HH who took a loan	0.51	0.15	0.36***	0.52	0.096	0.424***
Proportion of HH who took formal loans	0.5	0.1	0.4***	0.51	0.06	0.45***
Proportion of HH who took informal loans	0.03	0.05	-0.02	0.029	0.034	-0.005
Number of loans	0.62	0.18	0.44***	0.62	0.12	0.50***
Number of formal loans	0.58	0.12	0.46***	0.58	0.06	0.52***
Number of informal loans	0.04	0.05		0.04	0.06	-0.02
Share of formal loans taken by a household (%)	95.71	63.2	32.51***	96.71	62.65	34.06***
Share of informal loans taken by a household (%)	4.28	36.79	-32.51***	3.28	37.34	-34.06***

Table A12: Impact of Program on Size and Duration of Loan

Outcome Variable	Treatment and Control II			Treatment and Control I		
	Treated	Control II	Differences	Treated	Control I	Differences
Average size of informal loans of a household (INR)	4755	34555	-29800**	7260	15657	-8397
Average size of formal loans of a household (INR)	25868	114631	-88763***	26010	102275	-76265***
Average moratorium period of outstanding loans	0.52	0.61	-0.09	0.54	0.48	0.06
Average number of years surpassed for the outstanding loan	1.22	2.2	-0.98	1.26	1.26	0

Table A13: Impact of Program on Interest Rate, Collateral and Co-signer Requirement

Outcome Variable	Treatment and Control II			Treatment and Control I		
	Treated	Control II	Differences	Treated	Control I	Differences
Average interest rate of loans in a household	11.63	7.24	4.39%***	11.48	9.87	1.61
Percentage of loans in which collateral was needed for a household	21.08	41.19	-20.11%***	18.91	30.17	-11.26*
Percentage of loans for which co-signer was needed for a household	32.37	65.78	-33.41%***	27.28	37.64	-10.36
Percentage of loans received less than demanded	3	22	-19%***	0.01	0.115	-0.105**
Amount (INR) received less than demanded	136	2465	-2329**	76.03	4419	-4342.97

Table A14: Impact of Program on Purpose of Loan Utilization

Outcome Variable	Treatment and Control II			Treatment and Control I		
	Treated	Control II	Differences	Treated	Control I	Differences
At least 1 consumption loan in a household	0.05	0.26	-0.21***	0.05	0.186	-0.136**
At least 1 medical loan in a household	0.23	0.03	0.20***	0.207	0.127	0.08
At least 1 livestock loan in a household	0.21	0.02	0.19***	0.211	0.08	0.131***
At least 1 education loan was taken in a household	0.15	0.09	0.06	0.16	0.13	0.03
At least 1 agriculture loan was taken in a household	0.19	0.26	-0.07	0.23	0.21	0.02
At least 1 enterprise loan was taken in a household	0.15	0.2	-0.05	0.15	0.22	-0.07
At least 1 home loan was taken in a household	0.13	0.2	-0.07	0.115	0.125	-0.01
At least 1 marriage/ birth/ etc. loan was taken in a household	0.01	0.06	-0.05	0.009	0.29	-0.281
At least 1 loan was taken to clear prior mortgage or to free land	0.003	0	0.003	0.009	0	0.009
At least 1 productive loan was taken in a household	0.66	0.58	0.08	0.709	0.634	0.075
At least 1 non- productive loan was taken in a household	0.42	0.52	-0.1	0.382	0.4696	-0.0876
Share of productive loans of a household	0.61	0.52	0.09	0.66	0.59	0.07
Share of non-productive loans of a household	0.38	0.47	-0.09	0.33	0.4	-0.07

Table A15: Impact of Program on Enterprise

Outcome Variable	Treatment and Control II			Treatment and Control I		
	Treated	Control II	Differences	Treated	Control I	Differences
Whether enterprise is present	0.25	0.23	0.02	0.243	0.23	0.013
Number of Enterprise	0.25	0.24	0.01	0.254	0.237	0.017
Enterprise Registered	0.05	0.12	-0.07*	0.06	0.47	-0.41
Enterprise Location (Outside Residence)	0.48	0.51	-0.03	0.491	0.598	-0.107
Number of Hired Workers	0.69	13.9	-13.21	0.767	0.886	-0.119
Number of Household Workers	0.73	0.74	-0.01	0.784	0.557	0.227**
Capital Borrowed (INR)	13542	4706	8836***	14179	7779	6400
Sales of the Enterprise (INR)	156375	192168	-35793	150987	124049	26938
Operating Expenses (INR)	38340	48115	-9775	38023	25857	12166*
Total Expenses (INR)	78692	91001	-12309	73320	50375	22945*

Table A16: Impact of Program on Livestock Assets

Outcome Variable	Treatment and Control II			Treatment and Control I		
	Treated	Control II	Differences	Treated	Control I	Differences
No. of Cows	0.46	0.48	-0.02	0.455	0.42	0.035
No. of Pig	0.97	0.34	0.63***	1.04	0.71	0.33***
No. of Poultry	1.77	3.13	-1.36***	1.8	1.95	-0.15
No. of Buffalo	0.007	0.18	-0.17	0.007	0.002	0.005
No. of Goat	0.105	0.12	-0.02	0.115	0.114	0.001
HH with No livestock	0.414	0.546	-0.13***	0.396	0.465	-0.069*

Table A17: Impact of Program on Consumer and Productive Assets

Outcome Variable	Treatment and Control II			Treatment and Control I		
	Treated	Control II	Differences	Treated	Control I	Differences
HH has any productive assets	0.545	0.553	-0.01	0.519	0.596	-0.077**
Number of Agricultural Assets	2.35	2.05	0.3	2.23	2.34	-0.11
Number of High Value Consumer Asset	1.09	1.05	0.04	1.1	1.193	-0.093
Number of Low Value Consumer Asset	8.67	7.71	0.96***	9.7	10.31	-0.61

Table A18: Impact of Program on Agriculture

Outcome Variable	Treatment and Control II			Treatment and Control I		
	Treated	Control II	Differences	Treated	Control I	Differences
Number of total crops grown in a household	1.1	0.95	0.15*	1.129	0.876	0.253***
Number of kharif crops grown in a household	0.7	0.61	0.09	0.725	0.56	0.165**
Number of rabi crops grown in a household	0.31	0.23	0.08**	0.318	0.274	0.044
Number of Zaid crops grown in a household	0.08	0.1	-0.02	0.085	0.041	0.044*
Total agriculture income per acre (INR)	24710	27186	-2476	24028	23405	623
Proportion of sale income from total agriculture income	0.68	0.73	-0.05	0.68	0.54	0.14***

Table A19: Impact of Program on Women's Livelihood and Bargaining Power

Outcome Variable	Treatment and Control II			Treatment and Control I		
	Treated	Control II	Differences	Treated	Control I	Differences
Women Bargaining Index	0.488	0.485	0.003	0.489	0.491	-0.002
Husband Bargaining Index						
Women's Relative Bargaining Power	0.486	0.497	-0.01**	0.488	0.494	-0.006
Number of livelihoods for female in a household	1.01	1	0.01	0.489	0.491	-0.002
	1.46	1.41	0.05	1.46	1.15	0.31***
Number of livelihoods for male in a household	1.81	1.96	-0.15	1.828	1.435	0.393***

Table A20: Impact of Program on Livelihood Diversification

Outcome Variable	Treatment and Control II			Treatment and Control I		
	Treated	Control II	Differences	Treated	Control I	Differences
Proportion of HHs Agri. wage	0.48	0.59	-0.11***	0.48	0.37	0.11**
Proportion of HHs Non-agri. wage	0.49	0.38	0.11***	0.5	0.6	-0.1**
Proportion of HHs MGNREGS wage	0.68	0.71	-0.03	0.7	0.79	-0.09***
Proportion of HHs Agriculture	0.65	0.49	0.16***	0.65	0.54	0.11***
Proportion of HHs Livestock	0.58	0.45	0.13***	0.6	0.53	0.07*
Proportion of HHs Enterprise	0.25	0.23	0.02	0.24	0.23	0.01
Diversity Number of Income Sources	3.58	3.31	0.27***	3.61	3.59	0.02
Diversity Prop. of Income Sources	0.39	0.36	0.03***	0.401	0.399	0.01

Table A21: Impact of Program on Income

Outcome Variable	Treatment and Control II			Treatment and Control I		
	Treated	Control II	Differences	Treated	Control I	Differences
Agri-wage Income (INR)	21799	25630	-3831	22017	35029	-13012***
Non-Agri wage Income (INR)	33233	33265	-32	34620	44521	-9901**
MGNREGA wage Income (INR)	12073	16401	-4328***	12156	12712	-556
Agriculture Income (INR)	24204	25710	-1506	23833	27614	-3781
Livestock Income (INR)	4809	1959	2850***	4412	2535	1877*
Enterprise Income (INR)	38841	50583	-11742*	38833	36836	1997
Pension and Transfer Income (INR)	15850	9947	5903	22741	10141	12600
Other Income (INR)	9663	11995	-2332	9492	5824	3668

