Micro-Enterprise Development through Training of Self-Help Groups in Sikkim

A Thesis Submitted

to

Sikkim University

In Partial Fulfilment of the Requirement for the

Degree of Doctor of Philosophy

by

Smriti Prasad

Department of Economics
School of Social Sciences

May 2024

THIS THESIS IS DEDICATED TO MY

GRANDFATHER

LATE SRI HARINANDAN PRASAD

6 माइल, सामदुर, तादोंग -737102
गंगटोक, सिक्किम, भारत
फोन-03592-251212, 251415, 251656
टेलीफैक्स -251067
वेबसाइट - www.cus.ac.in

सिक्किम विश्वविद्यालय
SIKKIM UNIVERSITY
(भारत के संसद के अधिनियम द्वारा वर्ष 2007 में स्थापित और नैक (एनएएसी) द्वारा वर्ष 2015 में प्रत्यायित केंद्रीय विश्वविद्यालय)
(A central university established by an Act of Parliament of India in 2007 and accredited by NAAC in 2015)

6th Mile, Samdur,Tadong -737102
Gangtok, Sikkim, India
Ph. 03592-251212, 251415, 251656
Telefax: 251067
Website: www.cus.ac.in

Date: 3.5.2024

DECLARATION

I declare that the thesis entitled **"Micro-enterprise Development through Training of Self-Help Groups in Sikkim"** submitted to Sikkim University in partial fulfillment of the requirement for the degree of **Doctor of Philosophy**, is my original work. This thesis has not been submitted for any other degree of this University or any other University.

Smriti Prasad

Smriti Prasad

Roll No: 17PDEC03

Registration No: 17/Ph.D/ECO/03

We recommend that this thesis be placed before the examiners for evaluation.

8/5/2024

Prof. Manesh Choubey
Supervisor
Department of Economics
Sikkim University

Prof Manesh Choubey
Department of Economics
Sikkim University
6th Mile PO Tadong, 737102, Gangtok

8/5/2024

Prof. Manesh Choubey
Head of the Department
Department of Economics
Sikkim University

अध्यक्ष
Head
अर्थशास्त्र विभाग
Department of Economics
सिक्किम विश्वविद्यालय
Sikkim University

6 माइल, सामदुर, तादोंग -737102
गंगटोक, सिक्किम, भारत
फोन-03592-251212, 251415, 251656
टेलीफैक्स -251067
वेबसाइट - www.cus.ac.in

सिक्किम विश्वविद्यालय
SIKKIM UNIVERSITY
(भारत के संसद के अधिनियम द्वारा वर्ष 2007 में स्थापित और नैक (एनएएसी) द्वारा वर्ष 2015 में प्रत्यायित केंद्रीय विश्वविद्यालय)
(A central university established by an Act of Parliament of India in 2007 and accredited by NAAC in 2015)

6th Mile, Samdur,Tadong -737102
Gangtok, Sikkim, India
Ph. 03592-251212, 251415, 251656
Telefax: 251067
Website: www.cus.ac.in

Date: 21/5/2024

CERTIFICATE

This is to certify that the thesis entitled **"Micro-enterprise Development through Training of Self-Help Groups in Sikkim"** submitted to Sikkim University in partial fulfillment of the requirement for the degree of **Doctor of Philosophy in Economics,** embodies the result of bona fide research work carried out by **Smriti Prasad** under my guidance and supervision. She has fulfilled the requirements relating to nature, period of research, publication, and presentation of seminar talk etc.

It is also being certified that the research work brings to light the results of an original investigation made by **Smriti Prasad** and no part of the thesis has been submitted for any degree, diploma, and associate-ship.

All assistance and help received during the course of the investigation have been duly acknowledged by her.

Prof. Manesh Choubey
Supervisor
Department of Economics
Sikkim University

Prof Manesh Choubey
Department of Economics
Sikkim University
6th Mile PO Tadong, 737102, Gangtok

6 माइल, सामदुर, तादोंग -737102
गंगटोक, सिक्किम, भारत
फोन-03592-251212, 251415, 251656
टेलीफैक्स -251067
वेबसाइट - www.cus.ac.in

सिक्किम विश्वविद्यालय
SIKKIM UNIVERSITY
(भारत के संसद के अधिनियम द्वारा वर्ष 2007 में स्थापित और नैक (एनएएसी) द्वारा वर्ष 2015 में प्रत्यायित केंद्रीय विश्वविद्यालय)
(A central university established by an Act of Parliament of India in 2007 and accredited by NAAC in 2015)

6th Mile, Samdur,Tadong -737102
Gangtok, Sikkim, India
Ph. 03592-251212, 251415, 251656
Telefax: 251067
Website: www.cus.ac.in

Date: 3.5.2024

PLAGIARISM CHECK REPORT

This is to certify that plagiarism check has been carried out for the following Ph.D. Thesis with the help of **DrillBit software** and the result is 5%, which is within the permissible limit (below 10% tolerance rate) as per the norms of Sikkim University.

"Micro-enterprise Development through Training of Self-Help Groups in Sikkim"

Submitted by **Smriti Prasad** under the supervision of **Manesh Choubey**, **Professor, Department of Economics, School of Social Sciences**, Sikkim University, Gangtok-737102, India

Smriti Prasad
.....

(Smriti Prasad)

Signature of the Candidate

Prof Manesh Choubey
Department of Economics
Sikkim University
6th Mile PO Tadong, 737102, Gangtok
.....

(Manesh Choubey)

Countersigned by the Supervisor

.....

Vetted by the Librarian

पुस्तकालयाध्यक्ष
LIBRARIAN
केन्द्रीय पुस्तकालय Central Library
सिक्किम विश्वविद्यालय
SIKKIM UNIVERSITY

ACKNOWLEDGEMENT

It gives me great pleasure to express my gratitude and respect to my supervisor, Professor Manesh Choubey, for all the helpful advice, support, and encouragement he provided over the course of the study. I am incredibly grateful to every faculty member in the Department of Economics for their insightful remarks and recommendations. I further extend my deepest regards to the Librarian, and all support staff of Teesta-Indus Central Library, Sikkim University, for providing a generous access to reference books, journals, online resources and databases which were imperative for producing quality research.

My study would not have seen the light of the day without the support from many institutions, officials, and individuals who provided immense guidance in my journey towards primary data collection from the four districts of Sikkim. In this regard, I am incredibly thankful to the Assistant General Manager of NABARD, Sikkim and officials from RSETI, Gangtok. I would like convey my gratitude to: DT Bhutia (State Coordinator of NERLP, Sikkim), Chungchungla Bhutia (District Project Manager, West Sikkim), Bishal Mukhia (District Project Manager, South Sikkim), Arun Sharma (Block Project Manager, Soreng), Banu Bhujel (Block Project Manager, Jorethang), Govin Sharma (Area Coordinator, Chumbung), Sunita Rai (Community Resource Person, Asyong Sajbotey), Robin Acharya (Office Staff, NERLP, Jorethang), Asha Tamang (Community Resource Person, Lalsore), and Nabin Tamang (Community Resource Person, Aaambotey). I am sincerely grateful to the officials from Rural Management Development Department (RMDD), Sikkim Rural Livelihood Mission (SRLM): Sarita Rai (District Project Manager, Khamdong), Y.Bhutia (Project Manager, Dzongu), and Sevika *didi* (Community Resource Person, Takchi). My special regards to Jeena Gurung and Mamata *didi* (Block Resource Persons, Chisopani). With their help and support I was able to reach my sample villages and elicit information from the respondents.

I am highly obliged to ICSSR for providing me the Full-Term Doctoral Fellowship (Grant code: RFD/2018-19/GEN/ECO/06) which was immensely helpful for meeting all the logistical expenses associated with my primary survey and other stationary expenses incurred in the study. My humble regards to the Non-Teaching Staff of the Department of Economics who were very prompt in discharging their duties and provided support in multiple ways. Last but not the least, I am grateful to my family for their endless support and motivation.

Smriti Prasad

TABLE OF CONTENTS

Declaration ***iii***

Certificate ***iv***

Plagiarism Check Report ***v***

Acknowledgement ***vi***

Table of Content ***viii***

List of Tables ***xiii***

List of Figures ***xv***

List of Acronyms ***xvi***

CHAPTER 1 **1**
INTRODUCTION **1**

1.1 Background 1

1.2 Objectives of the Study 5

1.3 Research Questions 6

1.4 Hypotheses of the Study 6

1.5 Methodology 7

1.5.1 Study Area 7

1.5.2 Source of Data 9

1.5.3 Sample and Data 10

1.5.4 Conceptual Framework 11

1.5.5 Method of Analysis 14

1.6 Organisation of the Study 15

CHAPTER 2 **17**
LITERATURE REVIEW **17**

2.1 Introduction 17

2.2 Impact of Microfinance 19

2.2.1 Impact of SHG Participation 19

2.2.2 Impact of Micro-credit 27

2.2.3 Studies on SHG Bank Linkage 31

2.2.4 SHGs and Different Linkage Models 32

2.2.5 SHG Savings and Group Production 33

2.2.6 Impact of Livelihood Training Programs 34

2.3 Studies on SHG Based Entrepreneurship 39

2.4 Concluding Remarks 43

2.5 Research Gap 48

2.6 Contributions of the Study 49

CHAPTER 3 **51**
ROLE OF INSTITUTIONS IN PROMOTING MICRO-ENTREPRENEURSHIP AMONG WOMEN SHG MEMBERS OF SIKKIM **51**

3.1 Introduction 51

3.2 Concept of SHG 53

3.3 SHGs in Sikkim 54

3.4 Different Models of SHGs 56

3.5 Statistic on SHGs 56

3.5.1 District Level Statistic on SHGs of Sikkim 57

3.6 Institutional Support for Promoting Micro-entrepreneurship 59

3.6.1 Skill Based Training Programme for Promotion of Micro-entrepreneurship 60

3.6.2 Financial Support to SHGs 61

3.6.3 Provisions to Promote SHG Products 66

3.6.4 Provision for Additional Aids 67

3.6.5 Provision for Community Resource Persons (CRP) 68

3.7 Conclusion 68

CHAPTER 4 71
SOCIO-ECONOMIC STATUS OF THE SHG MEMBERS AND THE IMPACT OF LIVELIHOOD TRAINING ON THEIR ENTREPRENEURIAL SKILLS 71

4.1. Introduction 71

4.2. Conceptual Framework and Econometric Methodology 74

4.2.1 Livelihood Training Programmes 74

4.2.2. Entrepreneurship Skills and its Measurement 76

4.2.3. Econometric Methodology 78

4.3. Socio-economic Profile of SHG Members of Sikkim 81

4.4. Regression Results 85

4.5. Conclusion and Policy Implication 92

CHAPTER 5 95
FACTORS INFLUENCING GRADUATION OF SHG MEMBERS TO MICRO-ENTREPRENEURS 95

5.1 Introduction 95

5.2 Factors Influencing Micro-Entrepreneurship Among Women SHG Members 97

5.3 Model Specification 99

5.3.1 Model 1: Logistic Regression 99

5.3.2 Model 2: Count/Poisson Regression 100

5.4 Descriptive Statistics 101

5.5 Results from Regression Analysis 104

5.6 Conclusion and Policy Implications 109

CHAPTER 6 111
A COMPARATIVE STUDY ON THE TYPES AND PERFORMANCE OF MICRO-ENTERPRISES ADMINISTERED BY THE TRAINED AND UNTRAINED SHG MEMBERS OF SIKKIM 111

6.1 Introduction 111

6.2 Nature and Pattern of Microenterprises 114

6.2.1 Status of Micro-Enterprise Possession by SHG Members of Sikkim 114

6.2.2 Distribution of Microenterprises Across Trained and Untrained SHG Members 115

6.2.3 Distribution of Microenterprises Operated by SHG Members Across Sectors of Economic Activity 116

6.2.4 Source of Knowledge for Starting up a Microenterprise 116

6.2.5 Types of Micro-enterprise(s) Operated by SHG Members 117

6.2.6 Reasons for Not Having Any Microenterprise by the SHG Members 119

6.3 A Comparative Study on the Performance of Micro-Enterprises by the Trained and Untrained SHG Microentrepreneurs of Sikkim 120

6.3.1 Source of Starting Capital 121

6.3. 2 Number of Years of Having Operated the Microenterprises by the SHG Members 122

6.3. 3 Distributional Strategies of Finished Products 123

6.3.4 Earnings of SHG Members from Microenterprises 124

6.3.5 Econometric Analysis of the Performance of Micro-enterprises by Trained and Untrained SHG Microentrepreneurs 125

6.3.6 Regression Results 127

6.4 Conclusion and Policy Recommendation 131

CHAPTER 7 **134**
CONCLUSION AND POLICY IMPLICATIONS **134**

7.1 Findings 134

7.2 Policy Implications 141

7.3 Limitation of the Study and Area of Future Research 142

REFERENCES **144**

APPENDIX A: INTERVIEW SCHEDULE **156**

LIST OF PUBLICATIONS AND PRESENTATIONS **168**

LIST OF TABLES

Table No.	Title	Page
TABLE 3.1	SHGs of India and Sikkim (2022)	57
TABLE 3.2	SHGs in Sikkim -District Wise	58
TABLE 4.1	List of Independent Variables and their Expected Relationship with Entrepreneurship Skills	79
TABLE 4.2	Socio-economic Profile of the Trained and Untrained SHG Members of Sikkim	81
TABLE 4.3	Impact of Training on Entrepreneurship Skills	86
TABLE 4.4	Estimation of Propensity Score using Logit Model	88
TABLE 4.5	Estimates Based on Propensity Score Matching Methods	91
TABLE 4.6	Rosenbaum Bounds- Entrepreneurship Skill	92
TABLE 5.1	List of Explanatory Variables and their Expected Relationship with the Probability of Adoption and Number of Microenterprises by the SHG Member	97
TABLE 5.2	Descriptive Statistics	102
TABLE 5.3	Regression Estimates on Factors Affecting Micro-Entrepreneurship among Self-Help Group Members	106
TABLE 5.4	Estimates Based on Propensity Score Matching Methods	108
TABLE 6.1	Distribution of Microenterprises across Trained and Untrained SHG Members	115
TABLE 6.2	Distribution of Microenterprises Operated by SHG Members across Sectors of Economic Activity	116
TABLE 6.3	Source of Knowledge for Starting up a Microenterprise	117
TABLE 6.4	Types of Micro-enterprise(s) Operated by SHG Members	118
TABLE 6.5	Reasons for Not Having any Microenterprise by the SHG Members	119
TABLE 6.6	Source of Starting Capital for Micro-Entrepreneurial Venture	121

TABLE 6.7	No. of Years of Having Operated the Microenterprises by the SHG Members	122
TABLE 6.8	Distributional Strategy of Finished Products of Trained and Untrained SHG Members of Sikkim	123
TABLE 6.9	Mean Earnings of SHG Members from Microenterprises	124
TABLE 6.10	List of Explanatory Variables and their Expected Relationship with the Profit Margin Earned by the SHG Micro-Entrepreneurs	126
TABLE 6.11	Impact of Training on Profit Margin Earned by SHG Microentrepreneurs (Estimates Based on Beta Regression)	128
TABLE 6.12	Estimates Based on Propensity Score Matching Methods	130
TABLE 6.13	Rosenbaum Bounds- Profit Margin from Microenterprises	130

LIST OF FIGURES

Figure No.	Title	Page
FIGURE 1.1	Administrative Map of the State of Sikkim with its Four Districts	7
FIGURE 1.2	Sample Design	11
FIGURE 3.1	Key Features of SHG	54
FIGURE 3.2	Types of SHGs	56
FIGURE 3.3	Institutional Support to SHGs	59
FIGURE 3.4	Source of SHGs Fund Procurement	62
FIGURE 3.5	SHGs Saving Linkage of Sikkim as on 31st March of Each Year	64
FIGURE 3.6	SHG Credit Linkage in Sikkim	64
FIGURE 4.1	Mirror Histogram Representing the Propensity Scores Before and After Matching (1:1 Nearest Neighbour Matching Without Replacement and with Caliper = 0.06)	89
FIGURE 4.2	Jitter Plot Representing the Propensity Scores after Matching	90
FIGURE 6.1	Status of Micro-Enterprise Possession by SHG Members of Sikkim	114

List of Acronyms

AGEY	Aajeevika Grameen Express Yojana
AIC	Akaike Information Criterion
AME	Average Marginal Effect
ANCOVA	Analysis of Covariance
ATM	Automated Teller Machine
ATT	Average Treatment effect on the Treated
BIC	Bayesian Information Criterion
CIF	Community Investment Fund
COVID-19	Corona Virus Disease of 2019
CRP	Community Resource Person
DAY-NRLM	Deendayal Antyodaya Yojana–National Rural Livelihood Mission
DoNER	Development of North East Region
DV	Dependent Variable
DWCRA	Development of Women and Children in Rural Areas
FE	Fixed Effect
FPO	Farmer Producer Organization
GOI	Government of India
GPU	Gram Panchayat Unit
GSDP	Gross State Domestic Product
HH	Household Head
IBCBBRP	Institution Building and Capacity Building Block Resource Person

IRDP	Integrated Rural Development Programme
LHBRP	Non-farm Livelihood Block Resource Person
ME	Micro-Enterprise
MLE	Maximum Likelihood Estimation
MYRADA	Mysore Resettlement and Development Agency
NABARD	National Bank for Agriculture and Rural Development
NCUI	National Cooperative Union of India
NERLP	North East Rural Livelihood Project
NGO	Non-government Organisation
NRLM	National Rural Livelihood Mission
NTFP	Non-Timber Forest Produce
OBC	Other Backward Classes
PCA	Principal Component Analysis
PG	Producer Group
PLFS	Periodic Labour Force Survey
PO	Producer Organization
PSM	Propensity Score Matching
RBI	Reserve Bank of India
RF	Revolving Fund
RMDD	Rural Management Development Department
RSETI	Rural Self Employment Training Institute
SARAS	Sale of Articles of Rural Artisans Societies
SC	Scheduled Castes
SD	Standard Deviation
SEWA	Self-Employed Womens' Association

SGP	Savings Group for Production
SGSY	Swarna Jayanti Gram Swarozgar Yojana
SHG	Self-Help Group
SHG-BLP	Self-Help Group Bank Linkage Programme
SHPI	Self-Help Group Promoting Institution
SIRD&PR	State Institute of Rural Development and Panchayat Raj
SISDBRP	Social Inclusion and Social Development Block Resource Person
SLBC	State Level Bankers Committee
SRDA	Sikkim Rural Development Agency
SRLM	State Rural Livelihood Mission
ST	Scheduled Tribe
STEP	Support to Training and Employment Programme for women
TRIFED	Tribal Cooperative Marketing Development Federation of India
TRYSEM	Training of Rural Youth for Self-Employment
VAA	Village Administrative Assistants
VFs	Village Funds
VRF	Vulnerability Reduction Fund
WDS	Ward Development Societies

CHAPTER 1

INTRODUCTION

1.1 Background

Self-Help Groups (SHG) are informal peer led support groups where individuals facing similar challenges collaborate for sharing knowledge and resources, emotional support, and mutual encouragement. Usually, these groups are managed by its cohesive members who are bound together by a common interest. Although different forms of SHGs exist across the globe created for addressing specific purposes viz. addiction recovery, mental health, chronic illness etc; our study focuses on economic SHGs which are the most popular form of SHG created to promote financial inclusion amongst the poor and marginalized sections across a number of developing economies in South Asia, Latin America, and Africa. In India, over the past three decades, Self-Help Groups (SHG) have remained at the forefront of poverty alleviation policies launched by successive governments. According to NABARD (2002, 2020), SHGs are small mutually cohesive informal groups of rural poor, mostly women, from identical socio-economic backgrounds. SHGs fundamentally thrive on the principle of thrift. The group members contribute a minimum mutually agreed fixed amount on a weekly or fortnightly basis to eventually build a corpus of funds out of which small amounts are lent to any of the member(s) in need. The rate of interest and terms and conditions tied to the loan are fixed in a democratic manner (Ghosh, 2012; Jain & Tripathy, 2011). The formation, functioning, and stability of SHGs are driven by the ethos of trust, social solidarity, and mutual support among its constituent members. The SHGs in India find its roots in the successful Grameen Bank model of micro credit. The groundwork for this model was laid by Professor Muhammad Yunus during the late 1970s in a small

village—Jobra, Bangladesh. It was conceptualised to provide collateral free formal micro-credit to the poor, mostly women, for productive purposes only. To acquire the loan, women were supposed to form a group of five members coming from the same socio-economic background but unrelated at household level. The consent of all the group members was mandatory if anyone amongst them wanted to obtain a loan. The borrowed sum of money was charged with a commercial interest rate. The debtor was supposed to repay the entire amount in 52 weekly instalments. Peer pressure served as a driving force ensuring timely repayment of the loan amount and the entire group was held accountable in case of any default. Upon successful repayment of the entire loan amount and the interest, the debtor was promised a larger amount of loan in future as a reinforcement. According to Professor Yunus, the poor already have skills to earn their livelihood, the only thing they lack is financial resources (Yunus, 2007). Thus, the fundamental purpose of this initiative was to provide formal financial services to the poor women to enable them earn their livelihood.

In India, the fundamental goal of the SHG movement, during the inceptive period, was to promote financial inclusion by providing access to low cost formal credit to the poor and marginalized sections who were chronically deprived of accessing formal banking services due to lack of collateral, overwhelming paperwork, and high transaction costs (Dev, 2006; Holmstrom & Tirole, 1997).

Over a period of time, the purview of the SHG initiative was broadened to incorporate livelihood generation as a key objective. This shift in vision is reflected through the rollout of successive schemes such as the Swarna Jayanti Gram Swarozgar Yojana (SGSY), National Rural Livelihood Mission (NRLM), Deendayal Antyodaya Yojana–National Rural Livelihood Mission (DAY-NRLM) and North East Rural Livelihood Project (NERLP). These schemes, apart from extending the existing support, prioritized

provision of skill-based training programmes tailored to the needs of socio-economically deprived rural women for inculcating the spirit of micro-entrepreneurship among them.

Women's participation in economic activities enhances their self-confidence, self-esteem, leadership skills, awareness, social acceptability, and financial stability. All these attributes collectively play a critical role in fostering women empowerment (Paramanandam & Packirisamy, 2015). The virtues of women empowerment, on the other hand, over the offspring and households have been widely accepted. Ample studies reveal that women empowerment leads to better educational attainment of children, improved decision making on health and survival of family, and most importantly, reduction of financial burden over the household (Doepke & Tertilt, 2019; Paramanandam & Packirisamy, 2015; The World Bank, 2002). As a result, empowering women folk by encouraging them to venture into viable micro-enterprises is expected to have the much-desired spill-over effects on the respective households and communities.

Against the backdrop of successive SHG based initiatives being rolled out, several academicians were motivated to study the efficacy of such programmes with specific emphasis on its different aspects, such as SHG participation (Alemu et al., 2018; Joshi, 2019; Mohapatra & Sahoo, 2016; Nayak, 2018; Sahu, 2015; Swain & Floro, 2012), micro-credit (Banerjee et al., 2015; Datta & Singh, 2014; Dev, 2006; Hoffmann et al., 2021; Mukherjee et al., 2019), SHG-BLP (Maity & Sarania, 2017; Sinha et al., 2012), different linkage models (Swain & Wallentin, 2016; Swain, 2012), savings and group production (Hemtanon & Gan, 2021), and training programmes (Banerjee & Ghosh, 2012; Karlan & Valdivia, 2011; Sharma et al., 2012; Siddhartha et al., 2019; Swain & Varghese, 2014; Swain & Varghese, 2013). The outcome variable considered in these

studies include: dependence of rural borrowers on informal moneylenders (Hoffmann et al., 2021), consumption patterns (Deininger & Liu, 2013), poverty (Ghosh, 2012; Maity & Sarania, 2017), household income and employment (Banerjee & Ghosh, 2012; Panda, 2009), vulnerability (Swain & Floro, 2012), entrepreneurial skill (Banerjee & Borhade, 2016; Sharma et al., 2012), business knowledge (Karlan & Valdivia, 2011) women empowerment (Banerjee & Ghosh, 2012; de Hoop et al., 2014; Mohapatra & Sahoo, 2016; Paramanandam & Packirisamy, 2015), household asset possession (Garikipati, 2008; Swain & Varghese, 2014), maternal health care (Saha et al., 2013), and infant and child health care (Gugerty et al., 2019).

Despite a substantial number of academic discourses on the emancipatory role of SHGs, a key issue on SHG induced rural development relates to livelihood training programmes and microenterprise development. The number of studies devoted to assessing the status and efficacy of such training programmes over different dimensions of microenterprise development among the women SHG members is limited. Further, it is observed that the studies conducted in the Indian context investigating the impact of training on different entrepreneurial aspects rely on small samples and crude methodology limiting the statistical validity of their findings and leaving an opportunity for further exploration. Our study contributes to the existing literature by investigating the enabling role of SHG training programmes on multiple dimensions of microenterprise development.

The novelty of our study lies in exploring the role of livelihood training on microenterprise development. We start with discussing the role of institutions in promoting micro-entrepreneurship among the women SHG members in the study area. Subsequently, we study the socio-economic profile of the entire sample respondents providing a clear insight into the observed differences between the two groups of the

sample SHG members—those who chose to participate in the livelihood training programme and those who opted themselves out of it. Further, along with different socio-economic factors, we investigate the enabling role of livelihood training programmes on enhancing entrepreneurial skills and promoting entrepreneurial activities among the sample respondents. Furthermore, we provide a comprehensive account on types and performance of micro-enterprises opted by the two categories of SHG members.

Besides the unique objectives, our study is based on a representative sample drawn from all the four districts of Sikkim—a landlocked Himalayan state located in the northeastern zone of India—which inspite of considerable growth in the number of SHGs in the past two and a half decades, has received very little academic attention.

Additionally, our study eliminates potential self-selection bias associated with livelihood training programme participation using advanced econometric methods—Propensity Score Matching—which provides us with unbiased results. Furthermore, the robustness of our estimated results is ensured with the help of Rosenbaum bounds sensitivity analysis which contributes to generalizability of our results.

1.2 Objectives of the Study

(i) To study the role of institutions in promoting micro-entrepreneurship among women SHG members of Sikkim.

(ii) To analyze the socio-economic condition of trained and untrained SHG members of Sikkim.

(**iii**) To examine the impact of training on entrepreneurial skill, necessary for initiating a micro-enterprise, among the SHG members of Sikkim.

(**iv**) To study the factors influencing graduation of SHG members to micro-entrepreneurs.

(v) To study the types of micro-enterprises started by trained and untrained SHG members of Sikkim.

(vi) To study the performance of micro-enterprises operated by trained and untrained SHG members of Sikkim.

1.3 Research Questions

(i) What are the roles played by institutions in promoting micro-entrepreneurship among women SHG members of Sikkim?

(ii) What is the socio-economic status of trained and untrained SHG members of Sikkim?

(iii) What is the impact of training on entrepreneurial skill of SHG members of Sikkim?

(iv) What are the factors influencing graduation of SHG members to micro-entrepreneurs?

(v) What are the types of micro-enterprises started by trained and untrained SHG members of Sikkim?

(vi) Is there any difference in the performance of micro-enterprises opened by trained and untrained SHG members of Sikkim?

1.4 Hypotheses of the Study

(i) Institutional intervention does not play any role in promoting micro-entrepreneurship among women SHG members of Sikkim.

(ii) There is no significant difference in socio-economic condition of trained and untrained SHG members of Sikkim.

(iii) Participation into training programmes does not influence the entrepreneurial skills of the SHG members of Sikkim.

(iv) Graduation of SHG members to micro-entrepreneurs does not depend on their socio-economic characteristics.

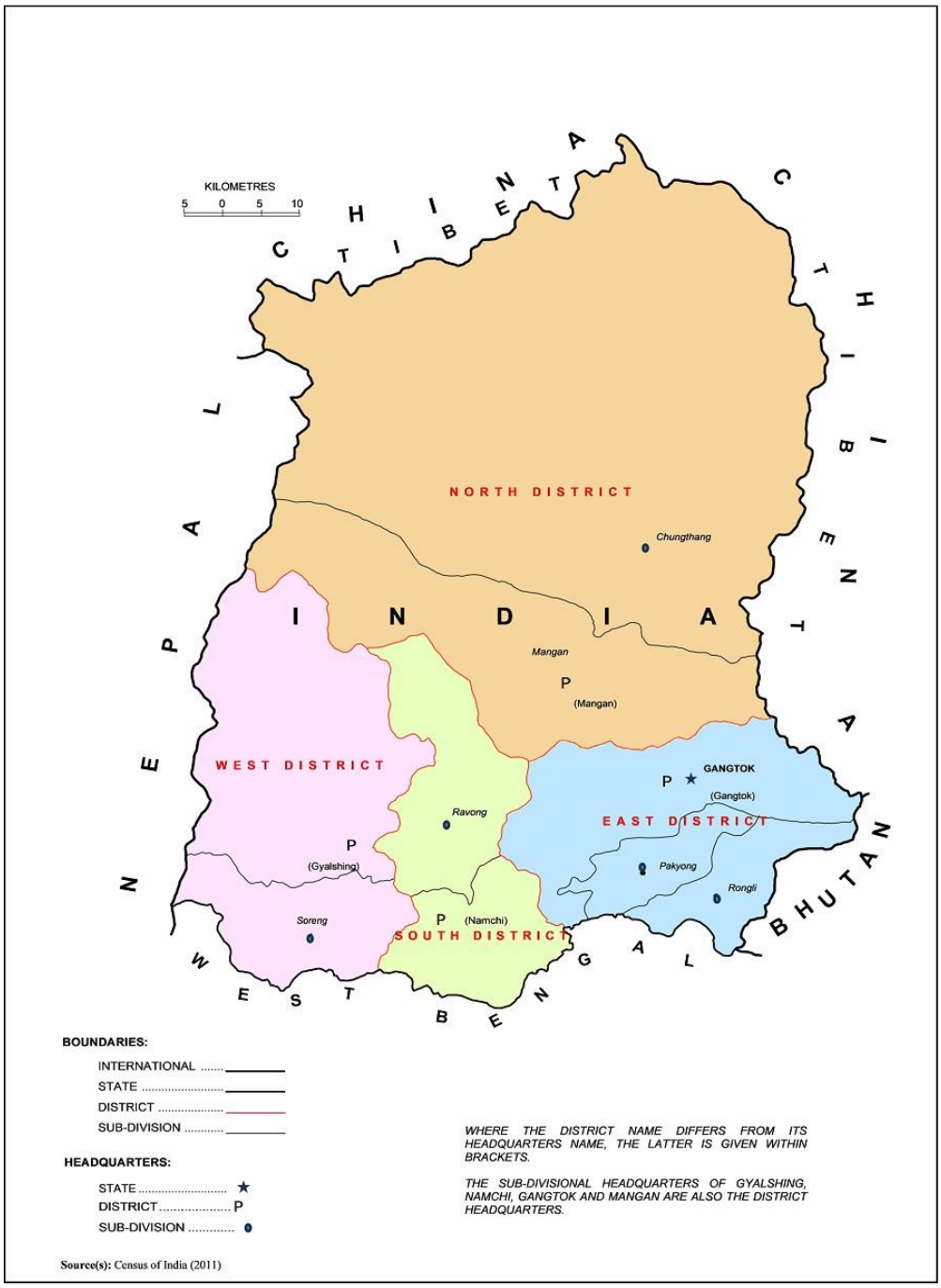
(v) There is no difference between the types of micro-enterprises started by trained and untrained SHG members of Sikkim.

(vi) There is no difference in the performance of micro-enterprises opened by trained and untrained SHG members of Sikkim.

1.5 Methodology

1.5.1 Study Area

Figure 1.1: Administrative Map of the State of Sikkim with its Four Districts



Source: Census of India (2011)

Sikkim (Figure 1.1) is one of the smallest north eastern states of India with an area of 7096 square kilometres (Government of Sikkim, 2013) and a population of about 0.67 million as of the year 2021 (GOI, 2019). It lies in the Eastern Himalayan Mountain region and is landlocked by Tibet, Bhutan, Nepal and West Bengal. As of 2017-18, the sectoral shares of the primary, secondary, and tertiary sectors in the state's GSDP stood at 10.43 percent, 59.38 percent and 30.19 percent respectively (Government of Sikkim, 2020). Although the share of agriculture in the state's GSDP is low, in recent years it has recorded a higher growth rate compared to the secondary and the tertiary sectors (Government of Sikkim, 2020), besides serving as a key avenue of employment for about 41 percent of the workforce (GOI, 2011). As per (GOI, 2011), Sikkim has recorded a higher literacy rate (81.4 percent) compared to the national average (73 percent) and ranks 13 across all the states of our country in terms of literacy.

The earliest SHGs, in the state of Sikkim, were formed during the late 90s with the initiative of an NGO named National Cooperative Union of India (NCUI) (NABARD, 2001). As of the years 1998-99, only one SHG was linked with a bank, under the SHG Bank Linkage Programme (SHG-BLP), and the number subsequently increased to four by the year 2000-2001 (NABARD, 2001). A major leap in the formation of SHGs was observed at the national level with the launch of Swarna Jayanti Gram Swarozgar Yojana (SGSY) in April 1999 with an aim of promoting self-employment through micro entrepreneurship by mobilizing rural poor into SHGs. The programme was implemented in the state of Sikkim, by Sikkim Rural Development Agency (SRDA) (Mukhia, 2016).

For providing operational training to the SHGs formed under the SGSY scheme, one Rural Self Employment Training Institute (RSETI) was proposed to be set up in each of its districts. However, after a few years several loopholes in functioning of SGSY

was visible in terms of infrastructure building, capacity building and delivery system which led to its reformation into National Rural Livelihood Mission (NRLM) in the year 2010-11 (Government of Sikkim, 2014). Until the month of November 2019, NRLM was operational only in two districts: East and North Sikkim; while in the other two districts–South and West Sikkim–the SHGs were formed and guided by the World Bank sponsored North East Rural Livelihood Project (NERLP) (Government of Sikkim, 2019). Nevertheless, after the exit of NERLP after December 2019, all the SHGs across the state of Sikkim was brought under the direct supervision of NRLM (Government of Sikkim, 2020).

As per the latest report, Sikkim has a total of 5146 Self Help Groups (SHGs) with around 51,668 active members (Government of Sikkim, 2020). The SHGs are distributed across four of its districts: North Sikkim, East Sikkim, West Sikkim and South Sikkim where the corresponding numbers are 364, 1501, 1754, and 1527.

1.5.2 Source of Data

We have used both primary and secondary sources of data to address our research objectives. Primary data was collected through a field survey where we interviewed the sample SHG members using pre-tested interview schedules.

Secondary data was collected from various authoritative sources including reports published by national bodies such as National Bank for Agriculture and Rural Development (NABARD), National Commission on Population, Ministry of Health and Family Welfare, Periodic Labour Force Survey (PLFS), as well as, state bodies like Rural Management Development Department (RMDD), Government of Sikkim.

Further we collected data from several official websites of NABARD, National Rural Livelihood Mission (NRLM), North East Rural Livelihood Project (NERLP), State Rural Livelihood Mission (SRLM), and Government of Sikkim.

Additionally, diverse microfinance related handbooks published by NERLP, NRLM and Ministry of Rural Development, as well as District Census Handbooks were also used to collect secondary information. We also used multiple meetings and agenda summaries published by the State Level Bankers Committee (SLBC), Sikkim.

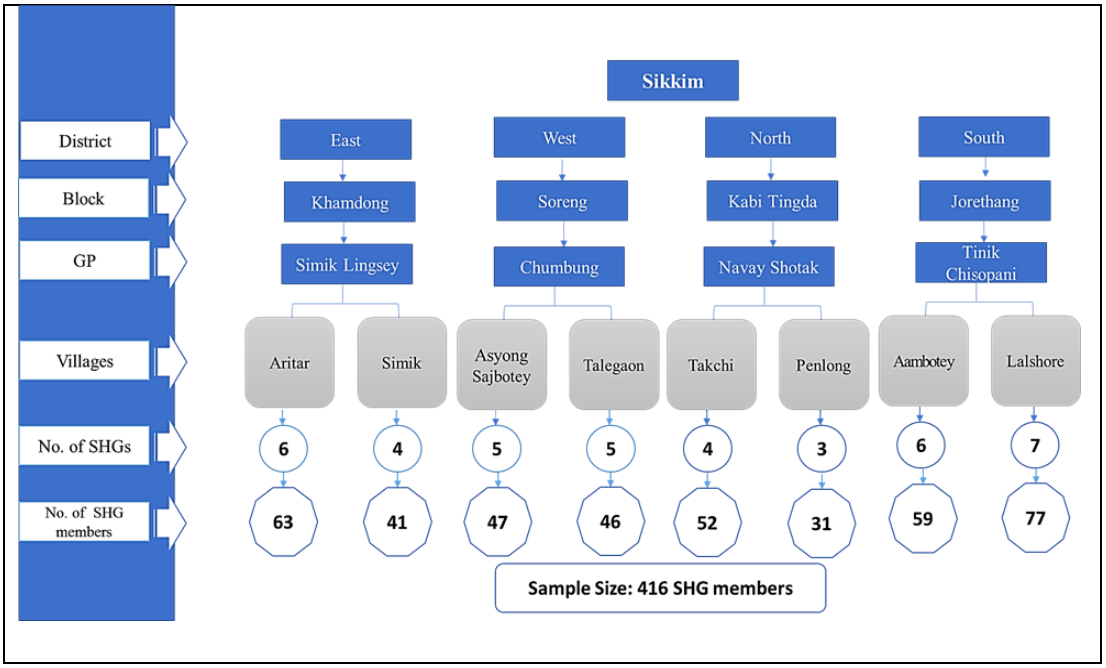
1.5.3 Sample and Data

The target population for our study are the women enrolled with an SHG for at least three years within the state of Sikkim. Taking a cue from Suprabha (2014) and Panda (2016) we have included only those SHGs in our sample who are at least three years old. The benchmark of three years of steady membership of an individual with their respective SHGs is followed because within this period the SHGs are matured by way of: having accumulated a sizeable group corpus, are credit linked with banks, and its members have, most likely, participated in at least one of the livelihood training programs.

As our population units are scattered across all the four districts of the state, we have employed multistage cluster sampling for conducting our primary survey. In the first stage we consider all four districts of Sikkim as clusters of SHG members. In the second stage one block from each district was randomly selected i.e., from North, East, West and South districts of Sikkim the community development blocks of Kabi Tingda, Khamdong, Soreng, and Jorethang respectively were selected. From each of the chosen blocks one Gram Panchayat Unit (GPU) was randomly selected as the third stage of our sampling procedure. In the fourth stage, two villages from each of the selected GPUs were randomly selected. In the fifth stage, all the SHGs operational in the chosen villages for at least three or more years were selected as the ultimate cluster of SHG members. From these SHGs we have selected those women members who have been enrolled with their respective SHGs for at least three years or more. Following this

method, we arrived at a sample of 416 women members out of 40 SHGs who are actively functioning in eight of the selected villages. The primary survey was conducted in the year 2019 for a brief span of six months from June through November. Figure 1.2 shows the detailed sampling scheme.

Figure 1.2: Sample Design



Source: Authors design

Following the chosen sampling scheme, we collected information on the respondent's personal characteristics, demographic composition and socio-economic attributes of her household, details on her SHG participation and utilization of its facilities with particular emphasis on micro-credit and training programmes. Further, we acquired data on various dimensions linked to respondents' entrepreneurial skills, micro-entrepreneurial activities and its operational performance.

1.5.4 Conceptual Framework

SHGs are small groups of 10 to 20 members belonging to similar socio-economic settings. The members contribute a minimum mutually agreed fixed amount on a weekly or fortnightly basis to eventually build a group corpus out of which small

amounts of credit is lent to any of the member(s) in need. The loaning decisions and the rate of interest are fixed in a democratic manner (Ghosh, 2012; Jain & Tripathy, 2011). Clearly, the formation, functioning, and stability of SHGs are driven by the ethos of social solidarity among its constituent members. According to Tripathy and Jain (2011) under the SGSY scheme, launched two decades ago, the SHGs pass through four stages of progression. The first is the 'Group formation' stage where the rural poor are mobilized to form SHGs; the second is the stage of 'Group Stabilization' where the group members pool their savings on a regular basis to gradually generate a group corpus; the third is 'Microfinance' stage where the eligible groups receive 'Revolving Fund' advanced by the banks which augments the group corpus of the concerned SHG and thereby enhances its inter-loaning capacity. The fourth is the stage of 'Micro-enterprise development' where the SHG members take an initiative to start an economic activity in the form of a microenterprise. In this connection, it's important to highlight that the definition of microenterprise varies across countries and regions (Carvalho et al., 2021) and is based on diverse parameters like number of employees, net assets, turnover etc. In India, a manufacturing or production unit is termed as a microenterprise if it's investment in plant and machinery has a monetary value of up to Rs. 25 lakhs. For those units which are engaged exclusively in providing services the upper limit of investment in equipment should be up to Rs. 10 lakhs to be termed as microenterprise (RBI, 2019). In academic literature too, the definition of microenterprises varies across context. Banerjee (1998), has defined a micro-enterprise as a very small business operated by a low-income individual with a loan to gain economic self-sufficiency which sometimes generate savings and home ownership and create employment opportunities for others. Shaw (2004) has grouped microenterprises into two broad categories of being one of either "survival" or "entrepreneurial" activities. While

entrepreneurial microenterprises are taken up as a household's primary activity, managed mostly by men with enterprising aptitudes, are larger in scale, make use of capital-intensive technology, operated via hired labour and face negligible competition; survival enterprises, on the other hand, are taken up as secondary household activities generally by women and are characterized by smaller scale, low entry barrier, seasonal variation, and operates at lower levels of efficiency. Both survival and entrepreneurial microenterprises, however, consists of agriculture, production and service, fishing and livestock and trade. In our study, the kind of microenterprises we came across in our sample are primarily survivalist in nature in the sense that they are operated with the sole motive of earning a living and not profiteering or accumulation. Following contemporary studies (Bharti, 2014; Goswami et al., 2019; Manimekalai & Rajeswari, 2001; Shaw, 2004), we define a microenterprise as a self-employment activity—mostly informal—related to petty business, agriculture, and allied activities pursued mainly by rural women to supplement household income. As the size of the enterprise is minuscule the use of paid workforce is negligible and the owner herself manages almost all the associated chores. Adequate provision has been made in the form of support and handholding exercises to encourage women members to start their micro-entrepreneurial venture(s) by providing them 'training' by the associated SHG Promoting Institution (SHPI). Here, by 'training,' we mean provision of livelihood training program to the women SHG members on a wide spectrum of income generating activities which are economically feasible in the local region. Such training programmes either aim to promote adoption of new microenterprises or upgrade the already existing ones through provision of appropriate managerial skills, technical know-how, raw materials and sometimes machinery and professional assistance in establishing effective market linkages. During the course of our study such training

programmes were found to be conducted in Sikkim by two agencies—NRLM and NERLP. The training programmes were conducted in collaboration with several provincial and central agencies. The duration of such training programmes usually ranged from one or two weeks and, on rare occasions, for about a month. For easing the access to such programmes as well as ensuring adequate attendance of the women members, the programmes are often organized in the close vicinity of the village. When it becomes imperative to attend the training programme at urban locations; the entire logistic arrangement of the trip as well as the associated expenses is borne by the SHPI. The frequency of such outstation training programmes, however, is very low.

1.5.5 Method of Analysis

Given the intricate nature of research objectives and the data associated, a carefully tailored method of analysis was identified for each objective.

To understand the role of institutions in promoting rural micro-entrepreneurship among women SHG members we have mainly relied upon reports and publications from national and state bodies.

Descriptive statistics has been used to explore the socio-economic attributes of the entire sample of SHG members. Additionally, basic statistical tests like Pearson chi-square test and independent sample t-test have been employed to evaluate the statistical significance of the observed differences between the socio-economic characteristics of trained and untrained SHG members.

A multiple linear regression model is used to assess the impact of training participation on entrepreneurial skill. In this context we correct for the potential self-selection bias associated with training participation using Propensity Score Matching (PSM) method and estimate the Average Treatment effect on the Treated (ATT) using 1:1 Nearest neighbour matching without replacement (caliper = .06) and full matching algorithm.

Subsequently, to study responsiveness of the results to unobserved confounders we used Rosenbaum bounds sensitivity analysis.

Moving forward, a multivariate binary logistic model is used to find the impact of socio-economic factors on adoption of micro-entrepreneurship, and a Poisson regression has been used to find the impact of training on venturing into multiple entrepreneurial activities. The result is validated by using a PSM method followed by a covariate adjustment estimator to verify the robustness of the PSM estimates.

In order to have a comprehensive understanding of the status and varieties of microenterprises operated by both the trained and untrained SHG women, we used descriptive statistical analysis.

Finally, we have applied a beta regression model to find the difference between performance of micro-enterprises operated by trained and untrained SHG microentrepreneurs. Once again, PSM method has been used to address the problem of self-selection bias associated with training participation along with the Rosenbaum bounds sensitivity analysis to inspect the impact of unobservables.

1.6 Organisation of the Study

The thesis is organised as follows. Chapter 2 provides a comprehensive review on the existing literature in the domain of SHG and identifies appropriate research gaps that can be taken up for our study. In Chapter 3, we examine the role of institutions in promoting micro-entrepreneurship among the women SHG members in the study area. Chapter 4 explores the socio-economic characteristics of the sample respondents as well as provides a clear insight into the observed differences between the two groups of the sample SHG members—those who chose to participate in the livelihood training programme and those who opted themselves out of it. We also investigate the role of livelihood training programmes on enhancing the entrepreneurial skills of the SHG

women. Chapter 5 provides valuable insight into the factors determining the graduation of SHG members to microentrepreneurs. Chapter 6 looks into the status and varieties of microenterprises operated by the women SHG members as well as the efficacy of livelihood training programmes in enhancing the performance of microenterprises operated by the SHG micro-entrepreneurs. Chapter 7 concludes the thesis with a summary of major findings and prescribes appropriate policies emerging out of our study.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

For the past three decades the SHG led micro-credit initiative has gained wide popularity in India as well as other developing nations in South Asia, Sub-Saharan Africa, and Latin America. In India, the launch of several microfinance programs by successive governments has motivated a wide number of academicians to engage in academic discourses relating to the efficacy of such programmes and as a consequence a substantial number of impact evaluation studies have surfaced. This chapter gives a brief overview of different impact evaluation studies in order to have a clear idea on a plethora of issues concerning the study. In order to have a comprehensive idea on the existing studies in the domain of SHG and its developmental impacts at the grassroots we have divided our literature review into a few sections.

The first section incorporates a detailed evaluation of scholarly work on impact assessment of SHG participation across various dimensions which include financial inclusion; reduction in poverty and vulnerability; increasing household income, savings, assets, and employability; improving literacy status, reducing migration, building social-capital, stimulating nutritional wellbeing, improving socio-economic status, enhancing access to labor markets, empowering women, promoting financial autonomy, improvement in the role of women in household decision making, encouraging their participation in local civic and political decision making, and even modernization of agricultural practices at the grassroot level.

In the second section, we discuss another set of studies examining the impact of the micro-credit scheme under SHG on easing the access to financial services, promoting

livelihood generation activities (both agricultural and non-agricultural), operational performance of micro-enterprises, SHG member's financial contribution towards family, household dependence on micro-credit, impact on the pattern of household consumption expenditure, school enrollment of wards and livelihood of the vulnerable segment of society.

The third section reviews multiple studies elucidating the significance of SHG-Bank Linkage Programme (SBLP) with regard to augmenting the ownership of bank account amongst the women SHG members, promoting their employment and income generation, reduction in income inequality within their household, reduction in impoverishment of society, and empowerment of fellow women.

The fourth section takes into account academic discourses which investigate the outcome variations of the SHG-Bank Linkage Programme (SBLP) across different linkage models and infrastructural endowments. The fifth section discusses the significance of SHG savings, village funds, and group production.

After having a comprehensive examination of a diverse collection of impact assessment studies on SHG based microfinance, it was imperative to showcase foundational studies investigating the impact of livelihood training programmes, on a number of parameters—women empowerment, performance of SHG-women run micro-enterprises, entrepreneurial skill enhancement, enterprise management, and finally assets and income of member households.

As the major theme of our study is to evaluate the impact of livelihood training on stimulating microenterprise development among the women SHG members, reviewing existing studies on the entrepreneurial aspects of SHG women is pivotal. The literature review in this section encompasses a diverse range of studies which explore emerging themes like efficacy of micro-credit in stimulating micro-enterprise development

among the poor SHG members, identifying the drivers of starting a micro-enterprise and tracking the factors which promote or hinder the productivity of the economic units, nature and variety of microenterprises, personal characteristics and traits associated with entrepreneurial success, efficacy of micro-enterprise take up in enhancing the living conditions, upgrading socio-economic status, and fostering women empowerment, as well as understanding the interlinkage between micro-enterprise take up and its impact over income and poverty of the member households.

2.2 Impact of Microfinance

2.2.1 Impact of SHG Participation

Among the studies focusing on the impact of microfinance, the paper by Swain and Floro (2012) attempted to study the impact of SHG participation on poverty and vulnerability. The study was based on data collected through primary surveys from five Indian states of Orissa, Andhra Pradesh, Tamil Nadu, Uttar Pradesh and Maharashtra. Using Propensity Score Matching and Sensitivity analysis, the study illustrated that the incidence of poverty was higher among SHG members as compared to non-members. However, vulnerability was found to be similar across the two groups. It was observed that there was a marked decline in vulnerability among the SHG members who had been associated with their SHGs for more than a year.

The study by Sahu (2015) had twin objectives. First, it sought to investigate whether SHG participation had any impact over women empowerment. Second, it tried to examine whether duration of SHG participation had any impact over women empowerment. The study utilized cross-section data from the five states of Karnataka, Tamil Nadu, Rajasthan, Himachal Pradesh, and Orissa. Primary data was collected from a sample of 1000 respondents out of which 500 were actively enrolled with SHGs while another 500 were not linked to any kind of SHG based microfinance. The study reported

a significant difference between SHG and non-SHG members in terms of economic security, ability to make purchases, involvement in major financial and other household decisions, physical mobility, relative freedom from domination by the family, participation in public/civic protests, self-confidence, public interaction and their participation in political and other forums. The study concluded that women enrolled into SHGs were more empowered vis-à-vis their non-SHG peers. Furthermore, the study found that with each additional year of association with an SHG the probability of the women members' economic and political empowerment increases by seven percent and 10 percent respectively while the impact over social empowerment was statistically insignificant.

Swain and Wallentin (2012) tried to investigate the impact of economic and non-economic factors on empowerment of women SHG members. The empirical study utilized representative data on 810 women SHG members drawn from five Indian states of Orissa, Andhra Pradesh, Tamil Nadu, Uttar Pradesh, and Maharashtra. Using Structural Equation Model (SEM) the study reported that economic factors are the most effective in empowering women SHG members. The authors, therefore, encourage SHG initiatives targeted towards income generation by women members belonging to low-income households. On the other hand, among the non-economic factors, autonomy and changes in social attitudes were also found to have a significant influence over women empowerment although their degree of effectiveness was found to be smaller compared to the economic factor.

The study by Panda (2009) tried to evaluate the impact of SHG participation over the enrolled women members' household characteristics like income, savings, asset possession, employment, literacy, and migration. The study utilized multistage random sampling to draw a sample of 150 SHG members from three purposely selected states

from the plateau region of India namely Orissa, Chhattisgarh, and Jharkhand. The study found that compared to the households with no women involved in SHGs those households who had women enrolled into SHGs reported a statistically higher level of savings, literacy, employment days, asset position, and lower migration.

Alemu et al.(2018) tried to examine the impact of women SHG participation on a set of parameters related to women empowerment both at the intra-household level and at the community level. The study drew upon cross-sectional data collected from 192 apple-producing women and their husbands from the Chencha district of Southern Ethiopia. Of the overall sample, 94 women respondents were enrolled members of SHGs and therefore served as 'treated group' whereas the other 98 women respondents were non-SHG members and were considered for the study as 'control group'. Propensity Score Matching was applied to evaluate the role of SHG participation on women empowerment at the intra-household and community levels. The estimated results revealed that SHG membership helped augment women empowerment at the community level, but at the intra-household level no such effect was observed. On the contrary, the study found a 'backlash effect' from the husbands as spousal relations were prone to conflicts due to 'stronger male assertiveness in restoring control'.

The study by Mohapatra and Sahoo (2016) tries to identify individual, household, and environmental characteristics that influence involvement into SHG programme. It also tries to evaluate the impact of SHG-participation on women empowerment—which is conceptualized as a composite index of three dimensions namely autonomy, economic empowerment, and gender relationship. Two backward districts of Orissa having a record of SHG programme under operation for the past five years were chosen for data collection. Primary data was collected from a sample of 300 women; of which 200 were SHG participants (treatment group) while 100 were non-participants (control group).

The estimated probit regression demonstrated that landholding, asset value, per-capita household income had a positive impact on SHG participation. Households belonging to SC/ST and OBC caste category had a higher probability to enroll themselves with SHG programme, but those reporting their primary occupation as wage earning had a lower probability of participation. Spatial differences in programme participation were also noted. Further the impact evaluation exercise conducted using Propensity Score Matching confirmed that women SHG participants were, indeed, more empowered vis-à-vis the non-participants. The higher empowerment of SHG participants was attributed to frequent group meetings, meetings with government officials and banks, participation into various kinds of training programmes which boost confidence and assertiveness within one's family.

The study by Deininger and Liu (2013) evaluates the impact of the innovative SHG program on the social capital, economic empowerment, political participation and nutritional status of the participating and non-participating women members by choosing eight representative districts in the Indian state of Andhra Pradesh. The sample used in the study comprised three categories of respondents: new joining of program SHGs (1125), older SHG participants (1573) who converted into a program SHG, and non-participants (3046). The associated selection bias among the program participants was addressed using a combination of pipeline comparison, propensity score matching (PSM), and difference in difference method. The study reported improvements on social capital, economic empowerment, and nutritional status in the program areas for both participants and non-participants reflecting positive social externalities associated with the program. A more deeper probe into the data revealed a marked improvement in womens' ability to save, mobility, and interest within their group. Although improvements in consumption standards were observed, a

commensurate improvement on income and asset position was not noticed.

The study by Nayak (2018) tries to investigate a causal linkage between the level of participation of women members into SHGs and their degree and effectiveness of involvement into rural socio-political institutions viz family, village councils (Gram Sabha), local government (Gram Panchayat), and caste councils. Using purposive sampling method data was collected from 353 women SHG members belonging to the seven representative districts of the Eastern Indian state—Orissa. Basic statistical tools like Chi-square test and Pearson Correlation were used for hypothesis testing. The study found that the level of participation into SHGs has a statistically significant impact over their degree and effectiveness of involvement into family, village councils, and local governance. Furthermore, enhanced participation of women members into SHG activities was also found to marginally loosen the grip of the caste system as a small fraction of the sample respondents claimed to have attended the meetings of the caste panchayat.

The study by Joshi (2019) attempted to identify the socio-economic drivers of women's participation into SHGs and the impact of the same over women empowerment. The study employed primary survey data collected from the Nainital district of Uttarakhand in India. Using multistage purposive and stratified random sampling data was collected from 120 women SHG members and 60 non-SHG members from identical socio-economic settings. Logit regression was used to identify the determinants of participation into SHGs. It was found that 'age,' 'education,' 'family type,' and 'distance from the market' have statistically significant impact on the participation into SHGs. To measure the impact of SHG participation over women empowerment, however, only the sample of SHG participants was used. Responses were elicited from the sample SHG women over a number of carefully constructed parameters relating to

women empowerment for both the pre-SHG enrolment period and the post-SHG enrolment period. The collected responses were subjected to paired t-tests which revealed that the women enrolled into SHGs had a higher level of empowerment vis-a-vis their pre-enrolment stage.

The study by Datta (2015) explored the socio-economic impacts of a large-scale SHG project JEEViKA in Bihar, India. A retrospective survey schedule was administered over 4000 households across 400 villages out of which one half of both the households and villages fell within the ambit of the project and formed the treatment units, while the other half were non-project and hence served as the counterfactuals. The study utilized Propensity Score Matching (PSM) techniques to study the differential impact over the treatment and control households over a number of dimensions which tried to measure economic and women empowerment. It was found that the JEEViKA program had, indeed, improved the conditions of socio-economically marginalized communities in Bihar as reflected by several dimensions. A sizable share of households were able to pay-off high cost debt and had started investing the borrowed funds for productive purposes. It was noted that the holdings of cows and bullocks increased at a faster pace among the beneficiary households compared to the control households. On the contrary, however, the control households were observed to increase their holdings of buffaloes at a faster pace compared to the former. The project intervention supposedly contributed in terms of reducing incidences of acute food shortage as well as reduced the practice of open defecation to some extent. Amongst social improvements, it was found that in project areas women aspired to educate their children more, especially the male child. In project areas the enrolment of boy child was observed to be higher. A higher share of women in project areas were able to read numbers, letters, and signs although there was substantial room for improvement. Compared to the counterfactual households,

beneficiary women demonstrated substantially higher empowerment as revealed by a variety of indicators. The beneficiary women enjoyed a higher degree of say in self-employment, primary livelihoods, purchase of durables etc. compared to the counterfactuals. Furthermore, women from program areas were found to attend panchayat meetings which was previously unusual among women from low caste and impoverished backgrounds thus demonstrating subtle improvements in the area of political empowerment, as well.

The study by Desai and Joshi (2014) attempts to evaluate the impact of SEWA intervention on three dimensions of SHG participation namely financial inclusion and access to labor markets, improvement in the roles of household level decision making, and participation in local civic and political decision making. Dungarpur district in Rajasthan which is one of the poorest districts across India with a high proportion of Scheduled Tribe (ST) population was chosen for the impact evaluation exercise. The impact evaluation was facilitated by an NGO named Self-Employed Womens' Association (SEWA) which was granted the responsibility of mobilizing the rural poor into SHGs. As a part of their program SEWA had randomly assigned 80 villages into treatment and control groups. The study tries to investigate the effect both at the village and individual level assuming that there is likely to be a knowledge spillover from SHG members to non-members residing in the same village. The unique feature of the study lies in its baseline and follow-up surveys conducted in the years 2007 and 2009 respectively in both the control and treatment villages. In the treatment villages a total of 748 and 662 women were surveyed in the years 2007 and 2009 respectively. For the control villages the corresponding number of women interviewed were 855 and 440. Thus, the pooled sample size for treatment villages consisted of 1410 women while the same for control villages was 1795 women. Accordingly, the total sample size was

3205. It was found that women residing in villages with active SEWA programs or those enrolled with SEWA's SHGs exhibited greater participation in group programs, enjoyed greater say over household decision making, displayed higher awareness about redressal mechanisms of public services and were more prompt on exercising civic rights. Some indications suggesting that landless women derived greater benefit from SEWA's interventions compared to landholding women at the start of the program was also found. In a nutshell, the study quite fruitfully demonstrated that SHGs can be effective instruments for promoting collective action among one of the most backward districts of India.

The paper by Raghunathan et al. (2019) investigates how far women SHGs can act as a conduit to disseminate agricultural extension among rural women members potentially leading to improvement in information acquisition and decision making which would eventually lead to modernization of agricultural practices at the grassroot level. The study draws cross-section data from a sample of 977 women from 80 villages in 16 blocks spread across eight districts of five states of India namely—Odisha, Madhya Pradesh, Jharkhand, Chattisgarh, and West Bengal. Out of the sampled 977 women, 563 women were not enrolled into SHGs, while the remaining 414 were SHG members. Using nearest-neighbor-matching models to compare SHG and non-SHG women across a range of observed characteristics, the study finds that enrolment into SHGs improves women's access to information and their participation in some agricultural decisions. However, the impact on agricultural practices or outcomes was found to be limited, probably due to social norms, financial bottlenecks, and women's domestic responsibilities. The study suggests that, in addition to merely providing information to women members, SHGs should strive to improve women's participation in agriculture which would effectively lead to implementation of acquired knowledge

into practice.

The study by Brody et al. (2016) tries to investigate the role of Self-Help-Group programs in improving women's empowerment along four directions namely: economic, social, psychological, and political empowerment. The study adopts a systematic literature review approach taking account of both quantitative and qualitative literature from the period between 1980 to 2014. The study found that participation in SHGs had a positive impact on women's economic and political empowerment, mobility, and control over family planning. However, no such evidence was found in favor of psychological empowerment. Moreover, from qualitative studies it was found that the empowerment enhancing effects of SHGs was mediated by a number of factors like money handling skills, financial decision-making capacity, solidarity, social networks, and support from household and community members. A noteworthy characteristic of the study lies in the fact that it reports larger empowerment effects for SHGs that include training programmes. In spite of the critical importance of training, adequate details on the contents of the training program remains understudied. Finally, after analyzing both qualitative and quantitative studies, the study reported no evidence of any adverse impact of SHG program participation over domestic violence. More precisely, although in the initial years participation into SHGs can create tensions between couples, in the long-term, however, no evidence of domestic violence has been reported due to program participation.

2.2.2 Impact of Micro-credit

The study by Dev (2006) points out the importance of financial inclusion in enhancing the livelihoods of small and marginal farmers, people engaged in rural non-farm enterprises, and other vulnerable groups. The study reveals that small and marginal farmers and some social groups have been the most excluded in terms of accessing

credit from organized sources. Furthermore, the paper outlines the pivotal role of the self-help group movement, SHG-Bank linkage programme, and microfinance institutions in leveraging financial inclusion across the communities who had been financially excluded thus far. Finally, the study advocates the need for innovative practices from commercial banks, new regulatory procedures, and depoliticisation of the financial system.

The study by Mukherjee et al. (2019) tried to construct a composite index of financial inclusion by considering multiple dimensions for an inclusive financial system. In the subsequent step an attempt was made to investigate causal linkages between the constructed index of financial inclusion and two basic indices of rural development—agricultural productivity (measured by share of agriculture in GSDP) and enhancement in rural elementary education (measured by the gross enrolment in government and private schools for classes 1 to 5). The study entirely relies on secondary data which is collected from different government agencies like NABARD, Economic Surveys, RBI online databases, District Information System for Education Survey, NUEPA, and Handbook of Statistics on Indian Economy etc for the years 2007-08 to 2011-12 for 20 major states of India. While the index of financial inclusion was constructed using Principal Component Analysis (PCA), panel data regression analysis was employed to investigate the chosen causal relationship. It was found that financial inclusion had a statistically significant positive impact over both elementary education as well as agricultural growth.

Datta and Singh (2014) tried to identify the determinants of SHG members' income generation who used their borrowed funds to productive enterprises. Additionally, the study attempts to estimate financial performance efficiency of the sample SHGs and also tries to probe its determining factors. The study completely relies on primary data

collected from three blocks of Birbhum district in West Bengal, India using purposive sampling procedure. A total of 120 SHG members were surveyed from each block taking two Gram Panchayats from each block and two villages from each Gram Panchayat. Following this method led to a total sample size of 360 SHG members. A multiple regression model was used to identify the determinants of income generated by the sample SHG members. The results of the estimated regression equation revealed that loan amount, amount of savings, years of formation of SHG, educational qualification of the group leader, and receipt of training had a statistically significant influence over the SHG members' income generation. Furthermore, the estimated SHG-wise efficiency scores were found to vary across the blocks and the obtained variation was attributed to different socio-cultural factors specific to the chosen blocks.

A recent study by Hoffmann et al. (2021), tried to find the effects of Jeevika—a government project targeted towards collectivizing the poor into mutually cohesive SHGs. For the study the authors picked those 180 panchayats which were randomly chosen from 16 blocks across seven districts of Bihar for the launch of the microfinance programme—Jeevika. An analysis of covariance (ANCOVA) was chosen as a suitable econometric tool to estimate the results. The findings of the study were presented in two-time frames—one immediate and the other subsequent to two years of the launch of the initiative. Though the immediate results of the microfinance intervention were found to be modest; the outcome of the programme after two years of its launch was found to be noteworthy. The study found that, with the passage of time, a relatively higher number of poor and deprived individuals were collectivized into SHGs. These SHGs gained popularity for providing loans at low interest rates. Further, the study highlights that the demand for credit from informal sources also declined and so did the interest rate charged by the local creditors.

Banerjee et al. (2015) conducted a study across 52 out of 104 poor localities in Hyderabad where microfinance facilities were introduced. The aim was to investigate the effects of microfinance intervention. Using a randomized evaluation method, the authors found that, with the availability of micro-credit facilities, the small-scale enterprises received a higher amount of investment and the already existing enterprises also gained a higher amount of profit. However, no significant upsurge in expenditure on consumables was observed. It was also found that there was a rise in expenses on durable items, while there was a drop in expenses on tempting items. Again, no significant differences in the health of the respondents, their educational attainment and empowerment of the female clients was observed. The study also highlights that, after two years of initial intervention the control localities also received the same microfinance facilities. A comparison between the old and new microfinance clients showed limited variability, leading to the conclusion that the duration of receiving the microfinance facilities and the amount of loan were insignificant.

The study by Bera (2014) analyzes the degree of households' dependence on SHG based micro-credit, income from SHG activities, as well as tries to evaluate how far participation into SHGs enhances the women's financial contribution towards her family. The study mainly relies on primary data for investigating its objectives, although secondary data has also been used to provide a proper context to the chosen area of study. The primary data has been collected using a multi-stage sampling procedure from 455 households comprising both SHG participants (treatment group)—258 households and non-participants (control group)—197 households. The objectives have been analyzed using tabular presentation while Propensity Score Matching (PSM) has been employed to evaluate women's financial contribution to her family. The study finds that a sizable proportion of households with an active SHG member in spite of

having access to SHG credit had to seek credit from informal sources. However, the percentage of sample households reporting to have accessed credit from informal sources was much higher for the control households with no SHG participant. Moreover, access to loans from institutional sources (other than SHG) was found to be higher among the treatment households compared to the control households. The study reveals that borrowing from multiple sources was common even for the treatment households as the size of loan obtained from SHG was small and there was a gradual emergence of various non-banking financial institutions in the study area which served as a new avenue of credit supply. SHG members were found to invest their micro-credit in business activities either owned by themselves or jointly with other group members or family members. However, the income generated from SHG activities was very meager for the majority of the participants. The outcome of the PSM estimates revealed that women's financial contribution to their households is positive and statistically significant across all matching methods.

2.2.3 Studies on SHG Bank Linkage

Maity and Sarania (2017) tried to assess the impact of SHG-Bank Linkage Programme (SBLP) on the employment, income, poverty, and income inequality among the participant households. Furthermore, the study tries to evaluate the contribution of the said microfinance drive in augmenting financial inclusion. The study relies on primary data collected from two districts of the Bodoland district of Assam namely Baksha and Udlaguri during the period May to October of the year 2013. The total sample size consisted of 330 respondents wherein 150 were SHG participants while the remaining 180 were non-participants. The impact evaluation of the programme over the chosen parameters was conducted using the Propensity Score Matching (PSM) method. The results demonstrated that the programme had a statistically significant positive impact

on the monthly income, employment days, and the level of financial inclusion among the participants vis-a-vis the non-participants. Besides, the programme was found to reduce the incidence of poverty, poverty gap, and severity of poverty among the participants. The impact on inequality was found to be positive, however, it was not statistically significant. The study prescribed to expand the coverage of such programmes as well as provide complementary inputs and capacity building training programmes to enable more and more poor households to lift themselves out of poverty. Sinha et al. (2012) tried to analyze the impact of NABARD's Self-Help Group Bank Linkage Programme (SHG-BLP) on poverty and empowerment of SHG members by drawing a large sample of 4791 households with one member enrolled into SHGs and 900 SHGs from six representative states of India—Andhra Pradesh, Karnataka, Maharashtra, Orissa, Uttar Pradesh, and Assam. The overall performance analysis conducted in the study demonstrated that households with members belonging to all female SHGs performed better compared to those whose members belonged to other types of SHGs. The observed deviation was attributed to better performance of female SHGs in terms of loan recovery, per-capita income, and savings. A sizable portion of the female SHG members across all the six states reported a marked improvement in their social empowerment in the post SHG enrolment phase. Additionally, households with members belonging to female SHGs recorded a higher decline in poverty rates between the pre-SHG period and post-SHG period. The study prescribes encouragement to formation of female SHGs and suggests provision of support services for improved operation.

2.2.4 SHGs and Different Linkage Models

Swain (2012) aims to investigate whether the positive impact of SHG-Bank linkage scheme on vulnerability, as reported in Swain and Floro (2010) would change if the

SHGs are linked to banks using different linkage models and varied infrastructural endowments. Using the dataset from Swain and Varghese (2010), the authors applied propensity score matching, and sensitivity analysis to draw conclusions. The study finds that respondents belonging to villages endowed with better infrastructural amenities and model-2 SHGs (SHGs formed under assistance of NGOs who subsequently received financial support through banks) were less vulnerable.

Swain and Wallentin (2016) examined in what manner the influence of microfinance on different elements that contributed towards empowering the women will change with respect to spatial disparity and different SHG bank linkage models. Using the dataset from Swain and Varghese (2010), the authors applied PSM and Structural equation modeling to draw conclusions. The study found that, on one hand, economic elements contributed positively towards empowering the women SHG members from Andhra Pradesh and Tamil Nadu while, on the other hand, having a higher level of decision-making power contributed negatively towards their empowerment. Again, for other states (Orissa, Uttar Pradesh, and Maharashtra) authority to make independent decisions, professional interconnections, communications, involvement in political activities were found to be positively correlated with empowerment of the respondents. Further, no causal relation between empowerment and SHG bank linkage models were found.

2.2.5 SHG Savings and Group Production

The study by Hemtanon and Gan (2021) tries to study the impact of two major microfinance programmes on income and food expenditure of farm and non-farm households in Thailand. The study utilizes: a fairly large representative dataset from the Thai socioeconomic survey consisting of both cross-section and panel data, as well as, advanced econometric methods like Propensity Score Matching (PSM) and fixed effect

(FE) model. They find that village funds (VFs) have a statistically significant negative effect on income and food expenditure for both farm and non-farm households. On the other hand, the savings group for production (SGP) are found to exert a statistically significant positive impact on income and food expenditure, but only for farm households. The estimates from the FE model appear to be in contrast with the former model. The FE model reveals that VFs have a positive influence on food expenditure of farm households but a negative impact on income. Moreover, it shows that SPGs have no effect on both farm and non-farm households' income and food expenditure. The study suggests that while both welfare and microfinance programmes are imperative for improving the lot of the rural poor; microfinance programmes can have the desired outcomes only if the rural households are adequately educated and have the requisite business skills to channelise the borrowed funds into income-generating ventures.

There are several studies on impact evaluation of livelihood training programmes. Since the provision of such training to SHG members is a relatively recent phenomenon, academic studies taking up impact evaluation exercises on livelihood training are limited. Hence, we have identified and reviewed all the credible studies in this domain in the next section.

2.2.6 Impact of Livelihood Training Programs

Bharti (2019) tried to find the efficacy of institutional intervention in promoting micro-entrepreneurship using a sample of 90 respondents from the Indian state of Maharashtra. The study used descriptive statistics to compare the impact of two different types of assistance provided for micro-enterprise development. The first type of assistance provided all-round support which included campaigns for entrepreneurship awareness, financial support, provision of different livelihood

generating training programmes, and different types of linkages to ensure smooth flow of the business processes; while the second type of assistance consisted of only livelihood generating training programmes. The findings of the study, however, demonstrated mixed outcomes. The first intervention worked well in targeting the impoverished section of the population and helped them uptake small business ventures at a high-momentum but the outreach of this approach was limited. The second type of intervention showed a better outreach and the stakeholders claimed to have earned a relatively higher amount of income from their start-ups. However, the fraction of respondents venturing into micro-enterprises was low and the outreach of this intervention remained confined among the near poor population rather than the impoverished ones. The results also reveal that the micro-enterprises run by the target group struggled to cope with the competitive market.

Swain and Varghese (2010) and Swain and Varghese (2014)**,** tried to find the efficacy of SHG training programmes by conducting a study drawing samples from two districts each from five major states of India namely, Orissa, Andhra Pradesh, Tamil Nadu, Uttar Pradesh, and Maharashtra. The study used a sample of 841 respondents, out of which, 604 respondents were mature SHG members, 186 were new SHG members, and the remaining 51 respondents were non SHG members. Out of the total sample size, 367 respondents chose not to participate in any business training programme while 474 respondents self-selected themselves to participate in the training programmes. The study applied a pipeline approach to address the bias related to SHG participation. Further they corrected for self-selection bias related to training participation using propensity score matching method and used sensitivity analysis to ensure the robustness of the estimates. The findings of the study suggested that participation in a business training programme did not contribute to raising the family income, however, it did

contribute to accumulation of household assets.

After having established that the SHG induced business training programme was successful in raising the household assets but not the household income, Swain and Varghese (2013), in their subsequent study, tried to investigate as to how far these results vary with respect to different SHG-Bank linkage models, differential infrastructural amenities possessed by the village, and training providing institution. The earlier sample of 841 respondents from five different states of India was used in this study as well. In line with their previous study (Swain & Varghese, 2010), in the current study too, they have used pipeline method to correct for SHG participation related bias, Propensity Score Matching for dealing with self-selection bias and sensitivity analysis for ensuring robustness of the results. The study found a positive association between business training participation and households' asset possession when the villages were well equipped with infrastructural amenities, and the training programme was arranged and implemented by the NGOs. Again, a positive impact of training on income was found among those members who belonged to SHG model 2 (SHGs formed under assistance of NGOs who subsequently received financial support through banks). The household income and assets, however, remained unaffected by the duration of training.

The study by Banerjee and Ghosh (2012) deals with two interrelated objectives: first, they tried to identify the major determinants of women empowerment, and second, they tried to determine the factors that contribute to the combined likelihood of a woman to be employed as well as empowered. Longitudinal data was gathered with two rounds of sample survey: the first conducted in the year 2005 and the second in 2009 from North 24 Pargana district of West Bengal, India. The sample consisted of 268 married women belonging to 26 matured SHGs. Descriptive statistics was used to summarize

the sample data, a logistic regression model was used to find the major determinants of women empowerment, and a probit model was used to find the combined likelihood of the respondent being empowered as well as employed. The study finds that the employability of a woman depends on the type of vocation she prefers and even the empowerment of their fellow group members. Again, it was found that the religion of the SHG members plays a significant role in their empowerment. If the SHG member was a muslim then they were less informed about the joint ownership of land (joint patta), they were less likely to have autonomous voting rights, were not allowed to participate in the decisions related to their children, faced restrictions over their mobility, majority of them did not share equal status with their spouse in the household. Despite these restrictions, participation into SHGs contributed towards the autonomy of Muslim respondents. Again, it was found that participation into SHGs livelihood generating training programme helped the women gain autonomy over their electoral preferences, family planning decisions, and enhanced their knowledge related to "*joint pattas*". Further, it was found that trained SHG women enjoyed higher command over their borrowed money and even used it for productive purposes. The study confirms that training is a major determining factor behind a woman being empowered and employed.

Karlan and Valdivia (2011) tried to investigate the influence of entrepreneurship training programmes on business performance of female microfinance clients from Peru. Their sampling methodology utilized a randomized control trial wherein the sample women were divided into two groups: one which was provided entrepreneurship training (treatment group) while the other was not (control group). The outcome of their study was unable to reflect a highly positive relation between training participation and selected business performance parameters like revenue, gross-profit, and job creation.

However, it was found that training did help the participants with improved business knowledge. Moreover, it was found that the microfinance institutions who provided training on entrepreneurship were better at holding their clients.

Sharma et al. (2012) explores the economic and social profile of the SHG members as well as investigates the potential of SHG's economic assistance and training facilities in enhancing the entrepreneurial skills (business know-how, entrepreneurial mindset, and skill attainment) and entrepreneurial activities of the SHG members. The sample consisted of 300 women from 25 SHGs across eight villages encompassing three districts of Uttar Dinajpur. Using simple statistical tools such as arithmetic mean and percentage the study concludes that a majority of SHGs had ventured into entrepreneurial activities where loans from the group corpus acted as an important source of startup capital. In some cases, SHG relied on loans from banks as well, but at discounted rates. The profit earned from the joint venture of the SHG members was evenly distributed amongst themselves. As far as impact of training was concerned, the respondents were asked to rate themselves with scores—*"low," "medium,"* and *"high."* In response to which the respondents claimed to have improved and rated themselves to have moved from *"low"* to "*medium*" level. The study also shows that SHG intervention in the form of financial inclusion and training helped the respondents to gain a moderate level of command over their family's decision-making process.

Siddhartha et al. (2019)**,** interviewed a randomly selected sample of 251 SHGs from Puducherry, South India, to study production related activities of the SHGs. More specifically they tried to investigate if there was any causal relationship between training and different production related parameters—manufacturing products, sale or distribution, and small-scale businesses. The study, using Structural Equation Modeling, confirmed a positive association between training and SHGs' productive

activities.

2.3 Studies on SHG Based Entrepreneurship

The previous section clearly elaborated the studies on SHG based training programmes. However, very few of such studies tried to investigate the impact of training on entrepreneurs and entrepreneurship development. This section outlines the work on SHG based entrepreneurship and entrepreneurs.

Dwivedi and Dwivedi (2022) conducted a study on SHG women who ventured into micro-business activities and used micro-credit as one of the sources of finance. They aimed to investigate whether the small loans borrowed out of SHGs were able to enhance the respondents' economic and social well-being. The study found that most of the women entrepreneurs were confined to the age bracket of 30–40 years. The women entrepreneurs who availed micro-credit were found to be economically empowered and were even sharing their family's financial burden. Further, they exhibited proficiency in managing their financial transactions and repaid loans on time. The women entrepreneurs were found to be taking an active part in the family's decision-making process.

The study by Hasalkar et al. (2005) starts by exploring different entrepreneurial activities taken up by women SHG members and then proceeds to identify the entrepreneurship related characteristics and traits of the SHG women. A purposive sampling method was employed to select 164 women from 15 SHGs across 4 villages located in Dharwad, Karnataka. As far as the functioning of SHG is concerned, it was found that all the SHGs were diligent with regard to organizing group meetings at regular intervals and were savings-linked to banks. However, only three of them were found to be registered under the government's schemes and were eligible to receive an amount of Rs. 15000 as funds. Using simple statistical tools like mean and percentage,

the study found that most of the women SHG members were actively engaged in various entrepreneurial activities. Around 85 percent of women engaged themselves in buying and selling daily household items in bulk. Again, 31.7 percent of women were engaged in manufacturing and retailing of eco-friendly disposable plates made from tree leaves. As far as entrepreneurial attributes were concerned, around 40 percent of women displayed good teamwork ability, nearly 18 percent of them came up with an original viewpoint in the SHG's meetings. Again, 17.56 percent of them were found to have good procurement capabilities. Further, very few women were found to have creative concepts and believed in themselves.

Jain and Tripathy (2011) aimed to investigate the efficacy of SHGs in facilitating village-based microenterprises with small scale loans. Further, they tried to understand the interlinkage between different attributes and features of SHGs, rural market dynamics, business action plans, and performance of the women community groups. Additionally, the authors even tried to identify the determinants of efficient functioning of SHGs and the micro-enterprises run by them. The sample included 615 SHG women from two states—Odisha (underdeveloped and economically backward in nature) and Haryana (comparatively advanced). Using simple statistical tools—average, standard deviation, percentage, and chi-square test—the authors concluded that, a number of factors such as modest economic background, lack of stimulus in form of societal upliftment or monetary gain, absence of the spirit of teamwork among the group members were major hindrances in way of efficient functioning of SHGs and their micro-enterprises, thus preventing the trickle down of financial resources to micro-enterprises through SHGs.

Kalyani and Chandralekha (2002) tried to identify the drivers of enterprise adoption among female SHG members and also studied the reasons which contributed to or

hindered the proper functioning of their economic units. The sample consisted of 300 SHG women entrepreneurs from Andhra Pradesh. Using “Padaki’s ten-dimensional index” and simple statistical tools such as mean, standard deviation, independent sample t-test, and F test, the study finds that most of the respondents were self-motivated to opt for an entrepreneurial venture. Further, it was observed that respondents with higher educational attainment, having less number of children, having some level of business experience, being single or divorced, and having spouse with business background contributes positively towards smooth business operations. However, respondents' age, their financial background, and occupation of their parents, were found to have no significant impact.

Tripathy and Jain (2011) tried to understand the interlinkage between SHG based micro-enterprises and rise in income accompanied with poverty reduction. In line with their previous study (Jain & Tripathy, 2011), the authors used the same set of 615 SHG women from two Indian states—Odisha and Haryana. Using logit model estimates, the study finds that higher the individual savings and group corpus, higher will be the amount of money earned. However, the loan borrowed from banks does not align with the same conclusion. Further, the study also reveals that respondents residing in comparatively developed areas benefited the most out of the SHG based initiatives.

Paramanandam and Packirisamy (2015) helps us comprehend the causal relationship between women venturing into micro-entrepreneurial activities and their empowerment—specifically financial empowerment. Further, the study delves into identifying the challenges faced by the SHG women while operating micro-entrepreneurship and suggest possible solutions to it. The authors interviewed 600 SHG women across 13 blocks of Kanchipuram district in Tamil Nadu. The study, using descriptive statistics, Garret ranking method, and factor analysis finds that SHG women

venturing into micro level income generating activities contributed positively towards, their financial wellbeing and stability, household asset accumulation, drop in incidence of poverty, and better living conditions. However, it was also observed that the loans borrowed from SHG were being used to meet day to day expenses rather than for income generating purposes. In this context the study highlights the importance of imparting livelihood generating training programmes and also suggests checking the use of micro-credit borrowed from SHGs.

The study by Satyasai et al. (2014) is structured around multiple objectives. They start with formulation of a "graduation index" which encompasses several dimensions as: possession of savings bank account by respondents, if the respondent has the primary authority over her bank account, whether the account is utilized for productive ventures, whether respondent ventured into new livelihood activity after enrolling into an SHG or extended her pre-SHG business. Further, the authors delve into identifying the determinants of graduation as well as the level of graduation. The sample consisted of 240 SHG women from Odisha and Karnataka. The study used logistic and multiple linear regression models to draw conclusions. The study found that a considerable proportion (20–30 percent) of SHG members possessed a bank account. Again, in around 27 percent of the sample SHGs, not even a single respondent was in possession of own bank account. It was also found that the backward districts were better in terms of percentage of respondents with bank account possession and venturing into multiple income generating activities. Attributes such as SHG participation, better savings, possession of mobile phone, and being young contributed positively towards venturing into multiple income generating activities. The amount of savings also had a positive impact on graduation. Again, credit and caste category—Schedule-caste—had a negative impact on graduation. Additionally, it was found that the bank account holders

mostly used the account for income generating purposes. The respondents were mostly engaged in daily waged work, farming, and varied micro-entrepreneurial activities.

A recent study by Pratibha et al. (2021) conducted a research on a sample of 160 women from 40 SHGs across Bhiwani district, Haryana. Their objective was to investigate the efficacy of entrepreneurship adoption in promoting women empowerment, enhancing living conditions, and upgrading the social and economic status of the women entrepreneurs. The findings of the study confirmed that venturing into entrepreneurial activities, indeed, led to women empowerment, contributed towards enhancing their living conditions and finally uplifted their social and economic wellbeing.

2.4 Concluding Remarks

This chapter presented a comprehensive review of literature examining the efficacy of SHG based microfinance programmes. The literature reviewed are grouped under seven heads, allowing for an in-depth analysis of diverse SHG impact assessment studies and the studies related to SHG based entrepreneurship and entrepreneurs. In this section, we summarize the major findings drawn from the above studies with the aim to lay a strong foundation for identifying proper research gaps.

After synthesizing the literature, it was found that women SHG participants were relatively more empowered in comparison to their pre-participation phase and their non-participating peers. Enrollment into such mutually cohesive savings driven groups was found to inculcate a discipline of regular saving amongst the members. Further, it contributed towards financial well-being, enhanced women's agency with regard to purchasing household consumption and durable items, empowered them to participate in all sorts of decision-making processes in their households including agriculture, enhanced their physical mobility and self-confidence. Some studies even reported that the SHG movement freed the women folk from family domination and domestic

violence, to a considerable extent.

In addition to promoting women empowerment, SHG participation has also been reported to enhance household welfare. SHG participants were found to accumulate higher amounts of savings, acquire financial assets, land holding, and cattles. Moreover, enrollment into SHGs helped women increase their number of employment days, per-capita household income, liberated households from the trap of indebtedness, provided food security, and enabled them to utilize the borrowed funds for income generating purposes. Likewise, SHG participation was found to be closely associated with boosting literacy level of the (male) children as well as reducing outmigration to a sizable extent.

It is also observed that SHG participants fared better in areas of public interaction. They were found to participate in public/civic protests, political and other types of social forums. Few of them even participated in the meetings of caste panchayats, which eventually led to loosening the grip of caste systems. Further a sharp decline in open defecation was also observed.

Although most of the studies claimed to have a positive impact of SHG participation on empowering women, there still exists some literature with contradictory results showing modest levels of empowerment at intra-household level. It was even found that husbands tended to snatch the entire control over the household back, which resulted in conflict in marital relations. Further, the literature also claims to have no impact on income and asset possession. Neither there was any improvement in agricultural practices which has been credited to social norms, financial bottlenecks, and women's domestic responsibilities. Studies were also unable to trace any psychological empowerment among the participants.

In the long term it was observed that the number of poor getting enrolled with SHGs

swell. A decrease in vulnerability among the participants was observed. With the passage of time, women gained economic and political empowerment and the household conflicts triggered by SHG participation were also found to be resolved and women gained interest in group related activities.

It was also found that women belonging to SC/ST and OBC caste categories were more likely to enroll with SHGs. Again, women engaged in daily waged work were less likely to participate in such programmes. A major determinant of SHG participation was spatial and infrastructural differences. It was also noted that age,' 'education,' 'family type,' and 'distance from the market' affected SHG participation.

Academic discourses studying the efficacy of SHG's microcredit initiative clearly suggest its positive impacts on financially including the individuals who were chronically excluded. With the availability of micro-credit, the small-scale enterprises received a higher amount of investment and the already existing enterprises also earned a generous profit. The amount of loan and savings is found to be positively linked with the SHG member's income. It helped the women members acquire elementary education, share the family's financial burden, raised spending on durable goods, and also fostered agricultural growth. The availability of collateral free micro-credit with minimal interest rates reduced the dependence on informal sources which consequently led the usurious moneylenders to reduce their interest rates.

Alongside the studies showcasing the positive impact of micro-credit, we found some studies with mixed results showing no significant rise in expenses on consumables and tempting items. Neither any improvement was observed with regard to different health related parameters, respondents' educational attainment, and their empowerment. Further, no significant relation between years of enrollment into SHGs and amount of loan taken was realized. Furthermore, because of the low permissible limit for obtaining

credit, the SHG members still relied on local informal creditors.

Taking a step forward, few studies examined the efficacy of SHG bank linkage programmes (SBLP) showing its positive impact on financial inclusion, number of employment days, income generation, and poverty reduction. A detailed inquiry revealed that the SHGs established and nurtured by NGOs and financially assisted by banks were better at addressing the problem of vulnerability among the members; however, no evidence of such linkage over women empowerment was traced.

As far as the efficacy of livelihood training programmes is concerned, there is multiple evidence of its positive impact on micro-enterprise adoption by way of improving entrepreneurial skills, providing business knowledge, upgrading the manufacturing processes and distributional strategies. Besides, the training initiatives also had an active role in enhancing women's employability and empowerment. The trained SHG members were found to have command over their electoral preferences, took part in family planning decisions, and were aware about joint ownership of land. They even had control over the borrowed money and were found to use it for productive purposes. Additionally, trained members possessed a higher amount of assets as compared to their untrained peers. These training programmes were found to be beneficial for the microfinance institutions also as it helped them retain their clients. Further, training impacts were better for villages endowed with better infrastructural amenities. Again, an increment in income was observed among those trained members who belonged to SHG model 2.

Nevertheless, there exist few studies with contradictory outcomes suggesting no significant rise in income, revenue, gross-profit, and job creation. Even the duration of training was not significant in affecting the outcome parameters. Some studies also found that the microenterprises owned by trained members failed to withstand market

competition.

Progressing through the literature review we find some meaningful insights with regard to different SHG based enterprises and the entrepreneurs. It is observed that SHG women belonging to the age bracket 30–40 years, having higher level of education, less children, having a certain level of business experience, either single or divorced, having a spouse who is also an entrepreneur and supports her business have higher chances of taking up an entrepreneurial venture. Further, if the SHG member has better savings, owns a personal mobile phone, and is young then they are more likely to take up multiple entrepreneurial ventures.

Progressing further, we find that most of the SHG women venturing into entrepreneurial activities were self-motivated. They were found to possess distinct entrepreneurial traits such as, competence to work in a team, coming up with original viewpoints in the SHG's meetings, having good procurement capabilities, having their own creative concepts and self-belief.

The entrepreneurial activities opted by the SHG women were small in scale and operated with an objective to serve the local market. These activities included retailing of daily household essentials, manufacturing of tree leaves based eco-friendly disposable plates and its retailing.

Venturing into entrepreneurial activities, indeed, had an empowering influence on the women SHG members. It contributed towards their financial wellbeing and stability, helped them accumulate household assets, reduced poverty, improved their living conditions, and precisely uplifted them socio-economically.

However, in some cases, it was also noticed that the credit borrowed from SHG was mostly used for household consumption instead of income generating activity.

Moving ahead, a number of studies enlisted several factors which hindered the proper

functioning of SHGs and their economic ventures. The factors are: economic insecurity, lack of stimulus in the form of social upliftment and monetary gain, lack of teamwork, and belonging to scheduled caste categories.

2.5 Research Gap

Throughout this chapter we came across an extensive range of studies examining the impact of microfinance with specific emphasis on SHG participation, micro-credit, SHG-BLP, different linkage models, savings and group production, and training programmes. In recent years, evaluating the impact of livelihood training programmes across multiple dimensions of women welfare has been a subject of special interest among the academicians. In spite of its credible potential of economically uplifting the women from the poor and marginalized communities through engaging them into self-employment activities, academic investigations on its socio-economic outcomes have remained limited.

We note that across the geographical spread of India, studies examining the impact of livelihood training has been conducted in Orissa, Andhra Pradesh,Tamil Nadu, Uttar Pradesh, Maharashtra (Bharti, 2019; Swain & Varghese, 2014; Swain & Varghese, 2010, 2013), West Bengal (Banerjee & Ghosh, 2012; Sharma et al., 2012), and Puducherry (Siddhartha et al., 2019). However, the north-eastern state of Sikkim remains unexplored in this regard leaving an opportunity for both an exploratory and investigative study.

Again, we notice that academic studies focusing on the impact of training have examined its influence on various outcomes which include assets and income (Bharti, 2019; Swain & Varghese, 2014; Swain & Varghese, 2010, 2013), women empowerment (Banerjee & Ghosh, 2012; Karlan & Valdivia, 2011), business revenue, profit, and business knowledge (Karlan & Valdivia, 2011), entrepreneurship skill

(Sharma et al., 2012), production related parameters, (Siddhartha et al., 2019), and uptake of business ventures (Bharti, 2019). Clearly the number of studies examining the impact of training on SHG members' entrepreneurial behavior are limited which necessitates further exploration.

Further, we know that academic research studies trying to evaluate the impact of intervention programmes are susceptible to self-selection bias which has to be corrected using advanced econometric approaches like propensity score matching, difference-in-difference etc. to obtain reliable inference. The limited studies investigating the impact of training on SHG members' entrepreneurial characteristics (Bharti, 2019; Sharma et al., 2012; Siddhartha et al., 2019) in the Indian context fail to control for the problem of self-selection bias which limits the statistical validity of their findings.

Again, the studies examining the factors determining graduation of SHG members to microentrepreneurs, where participation into livelihood training programme is a key variable, have not addressed the problem of self-selection bias which leads to inconsistent results.

Of the few studies addressing the problem of self-selection bias using robust methodologies; most have considered 'household income' and 'assets' as the outcome variable. There still exists a scope to study the impact of training over different parameters related to micro enterprise development.

2.6 Contributions of the Study

Our study contributes to the existing body of literature by investigating the role of training on microenterprise development. We begin with investigating the role of institutions in promoting micro-entrepreneurial activities among SHG members through various initiatives including the training programmes. Further, we study the socio-economic profiles of the entire sample respondents providing a clear insight into

the observed differences between the two groups of the sample SHG members—those who chose to participate in the livelihood training programme and those who opted themselves out of it. Next, we identify the socio-economic determinants which influence training participation among the women SHG members and examine its significance in uptake of micro-enterprises. We also explore the different types of micro-enterprises operated by the trained and untrained SHG members and try to evaluate their comparative performance. Most importantly, we examine the role of training in enhancing entrepreneurial skills of the SHG members and their likelihood of venturing into multiple livelihood activities.

From a geographical perspective, our study relies on a representative sample drawn from all the four districts of Sikkim—a landlocked Himalayan state located in the northeastern zone of India.

Another significant contribution of our study lies in its methodological rigor. We carefully eliminate the potential self-selection bias associated with training programme participation using propensity score matching method which provides us with unbiased results. Moreover, the robustness of our estimated results are verified using Rosenbaum bounds sensitivity analysis which contributes to generalizability of our results.

CHAPTER 3

ROLE OF INSTITUTIONS IN PROMOTING MICRO-ENTREPRENEURSHIP AMONG WOMEN SHG MEMBERS OF SIKKIM

3.1 Introduction

Institutions are critical to conceptualization and implementation of poverty eradication policies at the grass root level. In India, poverty and inequality remain a serious challenge for successive governments and policy makers even after more than seven decades of its independence. The only effective way out is growth, which is socially inclusive, where people from all rungs of society can be absorbed into gainful economic activity. Provision of credit, despite being a key input for initiating an economic activity, for long remained outside the purview of the majority of the poor and marginalized (Ayele, 2015; Bera, 2008; Dev, 2006; Kumar & Sensarma, 2017). India adopted a *multi-agency approach*—consisting of co-operatives, commercial banks, and regional rural banks—as a means to provide institutional credit to the rural sector. Nationwide policy was sought to channelize timely and adequate credit to the farming sector, reduce regional imbalances in credit supply, and gradually liberate the rural borrowers from the clutches of informal moneylenders charging exploitative interest rates (Dutta & Sundaram, 2004). Although the supply of rural credit increased significantly; it's access, mostly, remained confined to the rural elite while the poor and marginalized section continued to remain deprived due to: overwhelming paperwork, delays in processing, and mandatory collateral requirement (Dev, 2006; Holmstrom & Tirole, 1997). On the supply side too, serving a large number of poor borrowers, each demanding a miniscule amount of credit, involved a high risk and transaction cost on

the part of formal lending institutions which deterred their motivation to serve the poor borrowers (Rhyne & Otero, 1992).

Under such a backdrop, the idea of microfinance assumes a special significance. In India, the evolution of microfinance can be traced back to the year 1974 when an Ahmedabad based non-government institution, namely, Self-Employed Women's Association (SEWA) was found to set an initial example of collectivizing poor women for the purpose of microfinance (Bhatt & Bhatt, 2016). Later, during the late 70s, Mysore Resettlement and Development Agency (MYRADA), yet another non-government institution, formed Self Help Groups (SHG) which were similar to the one promoted by Mohammed Yunus in Bangladesh. These SHGs were no less than a panacea in terms of providing access to finance to the resource deprived borrowers. These small non-government-organizations provided collateral-free small loans to the group members from the corpus generated by accumulating their collective savings over a period of time. Proper functioning of these SHGs drew the attention of National Bank for Agriculture and Rural Development (NABARD)—the apex government institution for rural finance—which led to the launch of the SHG-Bank linkage programme (SHG-BLP) in 1992. Over a period of time, apart from its primary function as an informal institution for peer-based savings and lending, SHGs transformed into grass root conduits for the launch of several government schemes to address the larger problem of economic development. Swarna Jayanti Gram Swarozgar Yojana (SGSY), a multidimensional programme launched in April 1999, provided not only funds but also included the provision of skill-based training for promoting micro-entrepreneurship among the SHG members. However, with passage of time loopholes appeared in implementation of SGSY which resulted in its reformulation to National Rural Livelihood Mission (NRLM) during 2010-11. NRLM was later renamed as Deendayal

Antyodaya Yojana–National Rural Livelihood Mission (DAY-NRLM) in 2016. The development initiatives of SHGs also attracted the attention of the World Bank which invested hugely on SHGs by launching the North East Rural Livelihood Project (NERLP) through the Ministry of Development of North East Region (DoNER).

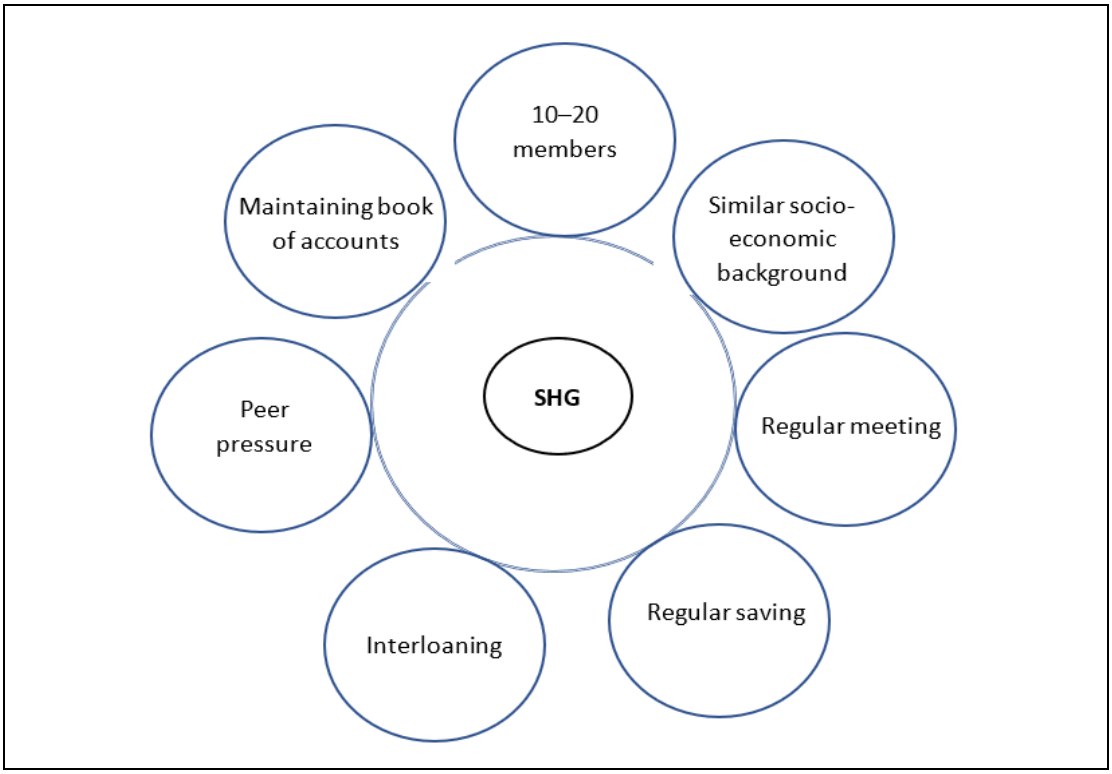
Clearly, government, non-government, and international institutions have made significant interventions for uplifting the poor, especially women, by helping them procure the requisite funds, skills, and inputs for venturing into livelihood generating activities. Although a considerable volume of literature exists on the various aspects of functioning of SHGs; a comprehensive review of the role of institutions in promoting micro-entrepreneurship through women-SHGs has been rarely undertaken. More precisely, present study focuses on how Self-Help-Group-Promoting Institutions (SHPIs) such as international organizations, government agencies, and NGOs identify and mobilize the poor women into SHGs, provide them requisite training for peer-based saving and lending, provide hand holding in linking them with formal banks, and finally, enable them venture into livelihood generating activities.

3.2 Concept of SHG

Self-Help-Groups (SHGs) are peer-based informal cooperatives having 10 to 20 members from homogeneous socio-economic backgrounds. Each group is managed by its members themselves who serve as president, secretary, and treasurer on a rotational basis. Figure 3.1 portrays the distinctive attribute of SHGs.

The members arrange a meeting on regular intervals where all sit in a circle. This circular seating symbolizes equality among the group members and provides equal importance to each member in the group. Apart from discussing the operational aspects of the self-help-group, the institutional setup also provides an ample scope to the women for sharing their personal problems and receiving advice from the peer group.

Figure 3.1: Key Features of SHG



Source:Aithors Conceptualisation

In every meeting, each member contributes a pre-agreed small amount of money—saved out of thrift—to form a group corpus. After several such meetings the group corpus becomes large enough to advance small loans to its members at nominal interest rate which is decided democratically.

Unlike formal sources of credit, there is no need of pledging a collateral to secure a loan from SHG. Social capital and a peer-monitoring mechanism ensures the repayment of borrowed funds. Delayed repayment of a loan, however, often attracts a monetary penalty. The group also maintains a proper book of accounts.

3.3 SHGs in Sikkim

The earliest SHGs in Sikkim were formed in Melli, South Sikkim by an NGO named National Cooperative Union of India (NCUI) (NABARD, 2001). By 1998-99 the NCUI was able to get one SHG linked with a bank under SHG-BLP (NABARD, 2001). The

number of SHGs linked to banks increased to four by 2000-01 (NABARD, 2001) and to 18 by 2001-02 (NABARD, 2002). The successful functioning of SHGs spearheaded by NCUI stimulated the emergence of other NGOs which took an active role in promoting SHGs. As per NABARD (2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010), Rashtriya Gramin Vikash Nidhi, Pacific club and Kewzing Youth Club were the prominent NGOs in South Sikkim while Tumin Shivalian Club, Nawa Samaj Polok, Gram Vikash Sangathan, Yuwa Jagriti Sangh, Youth Development Society of Sikkim were active NGOs in East Sikkim which played a catalytic role in formation of SHGs.

The launch of *Swarna Jayanti Gram Swarozgar Yojna* (SGSY) in April 1999 provided the much-needed boost to the proliferation of SHGs at the national level. Under this programme, the Sikkim Rural Development Agency (SRDA) started to form and nurture the SHGs. After over a decade, the SGSY was reformulated into a more broad-based programme called the National Rural Livelihood Mission[1] (NRLM) in the year 2010-11. NRLM focussed on the formulation and proper nurturing of SHGs and sought to develop it as a conduit for implementing a number of poverty alleviation schemes at the grass root level. Over time, the support and assistance from diverse institutions have led to the emergence of SHGs as a preferred source of micro-credit for the poor and marginalized communities across several states of India. In Sikkim, however, out of its four districts, NRLM was implemented in only two districts—North and East Sikkim (Government of Sikkim, 2019). In the other two districts, South and West Sikkim, the SHGs were being formed and nurtured by a World Bank Sponsored Project titled 'North East Rural Livelihood Project' (NERLP) (Government of Sikkim, 2019). With the end

[1]In 2016 it was further renamed as Deendayal Antyodaya Yojana–National Rural Livelihood Mission (DAY-NRLM).

of the term of NERLP in December 2019, all four districts of Sikkim came under the direct supervision of NRLM (Government of Sikkim, 2020).

3.4 Different Models of SHGs

SHGs can be categorized into three major models according to the nature of involvement of various institutions in their formation and promotion.

Figure 3.2: Types of SHGs

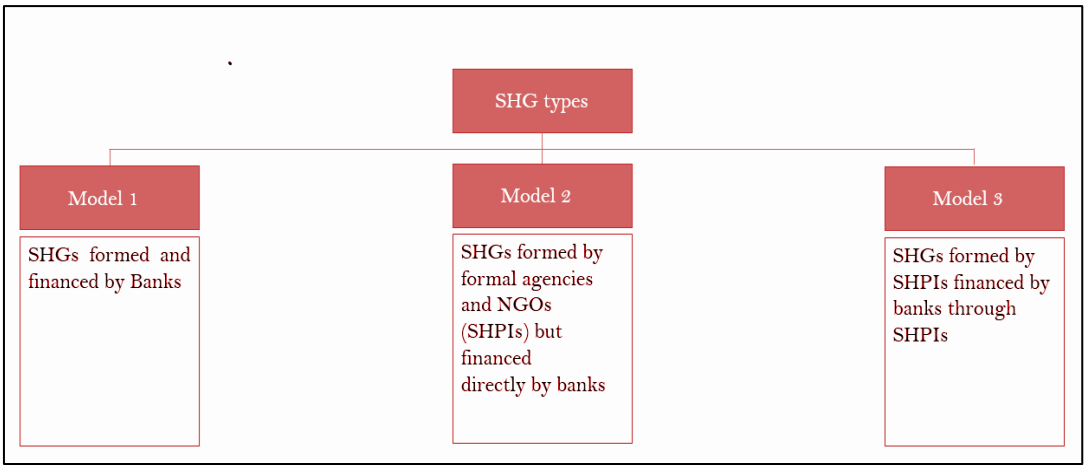


Figure 3.2 shows the types of SHGs based on their formation and linkage with banks. The first type is Model 1, where both the formation and financing of SHGs is managed by a bank; the second is model 2, where the formation of SHGs is managed by formal agencies like NGOs while the financing of the SHGs is done directly by the banks; finally in model 3, the SHGs are formed by the formal agencies (NGOs), who function as SHPIs, but are provided finance by the banks through the respective SHPIs who act as mediators. Most of the SHGs in Sikkim, as well as India, belong to the category of model 2.

3.5 Statistic on SHGs

Table 3.1 provides some key insights on the spread of SHGs at the all-India level vis-a-vis the state of Sikkim. It is observed that, there are more than 11.9 million SHGs

with an enrolment of nearly 14.2 crore SHG members at the national level. As of 31st March 2022, their cumulative savings amounted to around Rs.4724048.10 lakh and had loan outstanding adding up to Rs.15105129.61 lakh. The annual loan off-take has been reported at almost Rs.9972922.50 lakh.

Table 3.1: SHGs of India and Sikkim (2022)

	India	**Sikkim**
No. of households around	14.2 crore	50000
No. of SHGs more than	119 lakhs	5200
Savings of SHGs with bank as on 31st March	4724048.10 lakh	2691.12 lakh
Annual loan offtake	9972922.50 lakh	795.20 lakh
Loan outstanding as on 31st March	15105129.61 lakh	2051.66 lakh

Source: (Government of Sikkim, 2022; NABARD, 2022)

The state of Sikkim, on the other hand, had a total of 5200 SHGs with an active membership of 50,000 women. Their cumulative savings amounted to Rs.2691.12 lakh while total loan outstanding was to the tune of Rs.2051.66 lakh as on the financial year-end of 2022. The annual loan off-take amounted to Rs.795.20 lakh.

3.5.1 District Level Statistic on SHGs of Sikkim

A perusal of the district level statistics on the spread of SHGs in Sikkim (Table 3.2) shows a fairly even distribution across the districts except North Sikkim where the number of SHGs formed is abysmally low compared to the other three. The low number of SHGs in North Sikkim can be attributed to its geographical remoteness and its low population compared to the other three. It is further observed that, both North and East districts of Sikkim perform better in terms of federating SHGs at ward level, forming Ward Development Society (WDS), and getting a sizable number of their SHGs audited vis-a-vis the South and West districts. A better performance across these two indicators clearly shows that the institutional structure of SHGs is stronger in North and East

districts compared to the other two. A higher number of Ward Development Societies (WDS) ensures improved economic viability, higher fund allotment, a larger flow of information and, as these federations are formalized institutions, it helps the SHGs secure a higher political platform to assert their needs. On the other hand, a timely audit of SHG helps weed out potential discrepancies in books of accounts and thereby ensures financial transparency.

Producer Group (PG) and Producer Organization (PO) provide similar facilities like economies of scale, backward and forward linkage, and professional branding and marketing of products. However, as POs are formal and larger in size compared to PGs; they are more likely to receive and benefit from government schemes. From Table 3.2 we observe that, while all the four districts have PG, only two districts—South and West—have PO which helps make adoption of micro-enterprises more lucrative on the part of SHG members. The observed inter-district variation can be attributed to different governing agencies. SHG based programmes in North and East districts are under the direct supervision of NRLM, while in the South and West districts from the year 2012 to the end of the year 2019, the SHGs were governed by NERLP.

Table 3.2: SHGs in Sikkim -District Wise

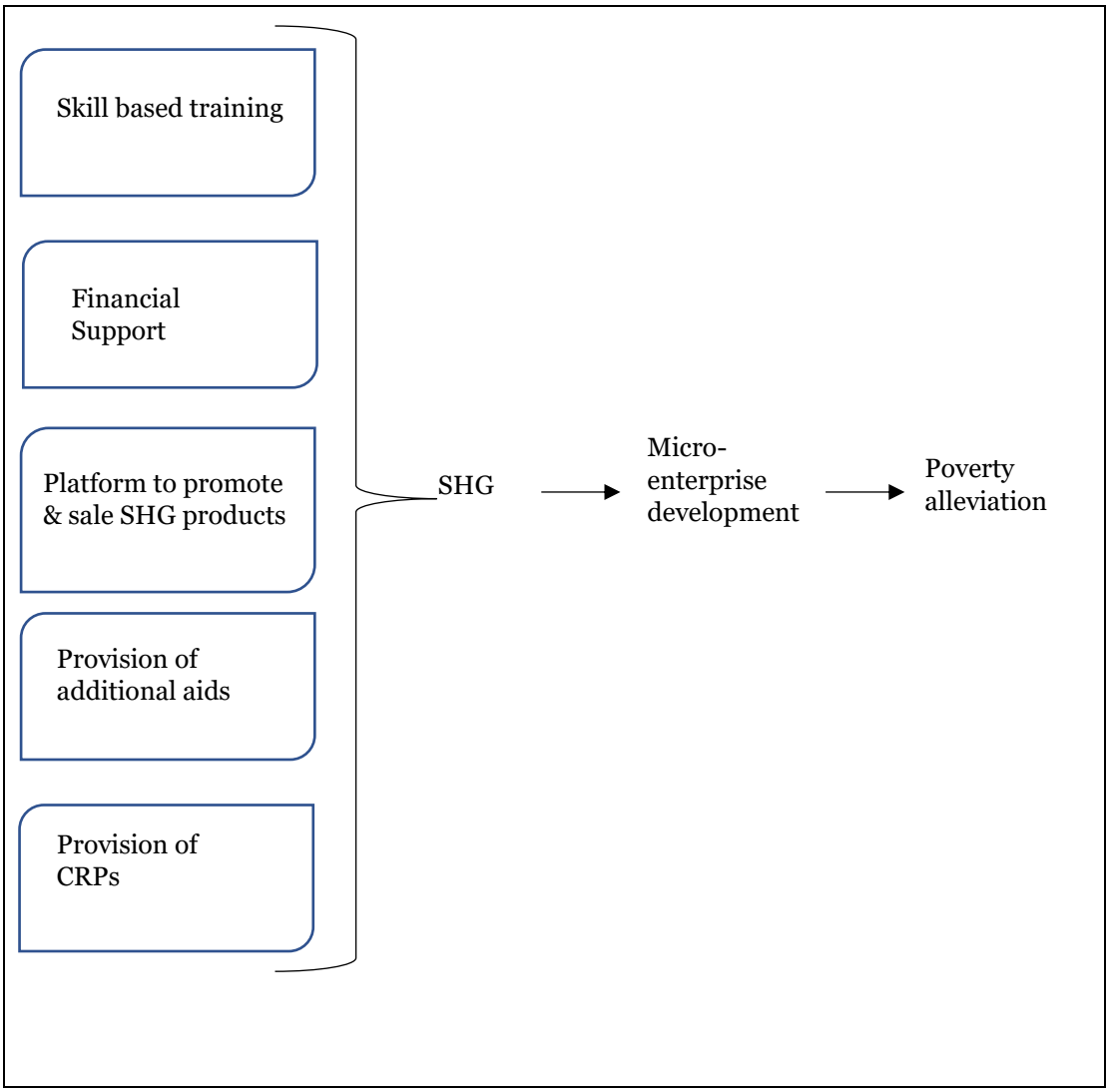
Sl. No	District	No. of SHGs	No. of Members	No. of WDS/ Federation	No. of PGs	No. of PO	No. of SHGs Audited
1	North	364	3615	106	24	0	227
2	East	1501	14553	245	60	0	894
3	South	1527	16010	59	16	4	0
4	West	1754	17490	65	111	3	0
	Total	**5146**	**51668**	**475**	**211**	**7**	**1121**

Source: (Government of Sikkim, 2020)

3.6 Institutional Support for Promoting Micro-entrepreneurship

Promotion of micro-entrepreneurship is one of the key drivers of stimulating self-employment among the women SHG members and plays a pivotal role in enhancing their living conditions. Encouraging rural women folk with low levels of literacy, social exposure, and confidence to take up rural-enterprises is, indeed, a massive task and necessitates a multi-pronged intervention from several agencies. Figure 3.3 provides a comprehensive list of the various channels through which the SHPIs provide support to the SHGs.

Figure 3.3: Institutional Support to SHGs



Source:Authors Conceptualisation

Clearly the support provided to SHGs through various agencies can be categorized into four major heads: skill support, financial support, marketing assistance, and a variety of hand holding exercises. A more detailed description of these support systems can be stated in the following subsections:

3.6.1 Skill Based Training Programme for Promotion of Micro-entrepreneurship

Provision of skill-based training is imperative for the rural women SHG members to venture into a micro-enterprise. Rural women folk in Sikkim are mostly engaged in household chores, cattle rearing, and crop production. Despite being active and agile, their activities are mostly centered around their households and the size of market-oriented production is extremely limited. Livelihood training programmes impart them professional skills in a variety of pursuits which are well embedded in the local cultural setup. SHG women are imparted skills on production, packaging, establishing forward and backward linkage, marketing, and basic financial management so as to enable them venture into a potentially economically viable micro-enterprise. A number of local NGOs organize such training programmes on topics as per the interest of the SHG members. Such training programmes are mostly conducted in close proximity to the participants' locality to ensure maximum participation. Most of the training programmes last for about five to fifteen days while few extend up to a month. In special cases, the trainees are taken to an urban center for exposure visits and advanced training. In such cases, however, the entire expenditure on logistics and transportation of the trainees are met by the concerned SHPI.

So far our target group have received training on animal husbandry (dairy, poultry, goatary, and piggery), market oriented crop production (cultivation of mushroom, turmeric, ginger, *dalle*—a local variety of chili, and organic farming), petty-manufacturing (broom binding, turmeric processing and marketing, knitting, bakery,

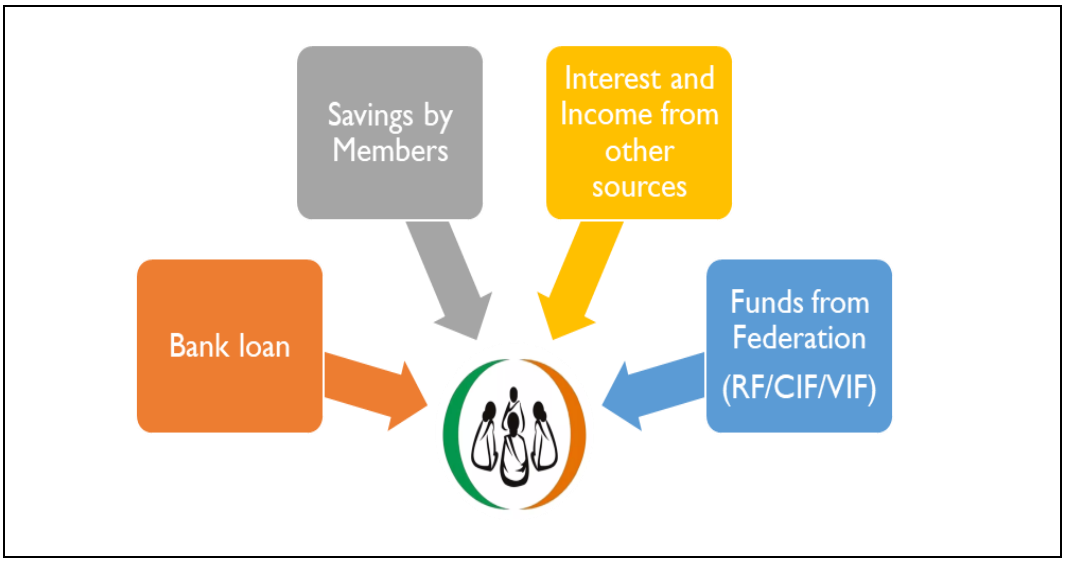
making pickles, bottom flower, bouquet making, candle making, jute bag, bamboo-handicraft, papad making etc.) and vocational training on multiple skills (beautician, marketing and planning, public speaking and anchoring etc.) (RDD, Government of Sikkim, 2019). Provision of training on diverse fields often required collaboration with line departments working within and outside the state. Additionally, intra and inter-state collaborations were made with State Institute of Rural Development and Panchayat Raj (SIRD&PR), Rural Self-Employment Training Institute (RSETI), National Dairy Development Board, Departments of Animal Husbandry, Livestock, Fisheries and Veterinary Services, Indian council of agricultural research for promoting a diverse range of livelihood activities (RDD, Government of Sikkim, 2019). Resource persons from Kudumbashree—a Kerala based programme on poverty reduction and strengthening the status of women in society—were invited to provide training on bookkeeping (Government of Sikkim, 2020).

3.6.2 Financial Support to SHGs

Overtime SHGs have become critical to financial upliftment of women folks. It not only helps smoothing the consumption needs but also induces the members to get engaged in productive activities by serving as a reliable source of finance. Financial support is a crucial prerequisite for venturing into any kind of economic activity. As a consequence, it becomes essential to study the various ways the SHGs acquire funds and outline the enabling role several institutions play in this regard. Figure 3.4 clearly shows the four major channels of sourcing funds. To begin with, once an SHG is formed, the savings by its constituent members acts as the primary source of funds to SHGs. The funds, thus accumulated, when swells up to form a sizable corpus over a period of time, is lent to the needy group members which enhances the group corpus by way of interest earnings. In Sikkim, the SHGs usually charge an interest rate within the range of 12 percent to 24

percent. A boost in saving and inter-loaning process, and thus income, can be observed if the group is disciplined in their regular activities. A negligence in adherence to this discipline often calls for a pecuniary penalty. The money thus earned further supplements the group corpus. Again, SHGs frequently engage themselves into productive activities and the income thus earned goes to its savings.

Figure 3.4: Source of SHGs Fund Procurement



Source- (GOI, 2017)

Moreover, SHGs find additional finance from SHPIs in the form of several funds—Revolving Fund (RF), Community Investment Fund (CIF), and Vulnerability Reduction Fund (VRF). These funds are extended with an intent to meet diverse needs of the SHGs. To elaborate, those SHGs who are able to successfully follow the principle of *Panchasutra* for six months are endowed with an amount of Rs. 10000–15000 as RF in order to boost the interloaning process.

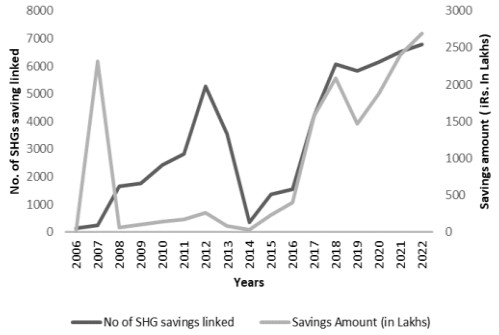
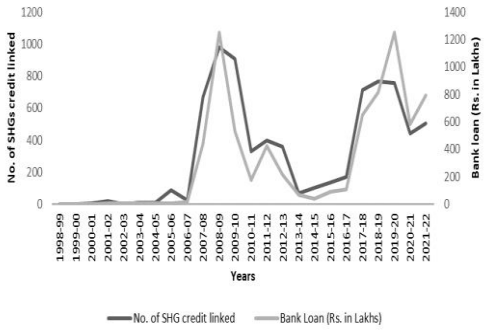
CIF, on the other hand, encourages original and creative livelihood generating activities among the SHG members. A lump-sum amount of Rs.40,000 to Rs.60,000 is provided to the SHGs as CIF who have a proven record of having followed 'group discipline' for

26 weeks or 6 months. However, the SHPIs handover this sum of money to the respective federation at the gram panchayat level. Finally, an amount of Rs.1500 to 3000 is handed over to village level organizations as VRF in order to deal with extreme impoverishment. Apart from SHG members, the recipient of VRF could be anyone from the respective village struggling to earn a basic livelihood.

Apart from these sources of funds, SHGs often get financial support from national level institutions. The institutions extend their support by launching pro-SHG programmes. A much-admired programme extending institutional finance to the SHGs is NABARD's SHG-BLP. Under this programme the SHGs get saving and credit linked to banks. To elaborate, once a SHG is able to successfully adhere to the principles of *'Panchasutra'* for two months, they become eligible to open a savings bank account in the group's name. Having a savings bank account manifests collective benefit to the group. In the first place, it paves a path for financially including the previously unbanked individuals. To continue with, it serves as a safe depository to the group's savings and promotes transparency within the group. Additionally, it serves as a conduit to several funds provided under different institutional schemes. Eventually, a smooth relation with the bank and successful adherence to *'Panchasutra'* for about six months qualifies the SHG for credit linkage. This facilitates the SHGs with collateral free loans up to four times their existing savings in their bank account. Usually, the interest rate levied on the loan amount ranges between 15 percent to 35 percent which is quite reasonable as compared to the exploitative rate charged by the local money lenders. Thus, it is evident that SHG-BLP builds a strong premise for financial stability of the target group with ease. This makes it popular throughout the nation and Sikkim is no exception.

Figure 3.5 and Figure 3.6 helps contemplate precisely the advancement of SHG-BLP

in Sikkim over the years. These figures, using data from NABARD, provides us with an insight on SHGs saving and credit linkage respectively. In these figures we have two axes, the primary one showing the number of SHGs whereas the secondary one shows the amount of money (in Lakhs) involved. Considering the fact that saving and credit linkage are related to each other we place both the figures side-by-side. In Sikkim, the process of linking SHGs to banks was initiated during the late 90s. Although state level data, for Sikkim, on credit linkage is available from its very inception, the same on savings linkage is available only from 2006 onwards. The available data on both savings and credit show an increasing trend overtime albeit with clear fluctuations in between.

Figure 3.5: SHGs Saving Linkage of Sikkim as on 31st March of Each Year	**Figure 3.6: SHG Credit Linkage in Sikkim**
	
Source: NABARD (2001-2022)	*Source: NABARD (2001-2022)*

Since the setting up of SHGs in Sikkim, it was in 1998-99 that the first SHG was credit linked and the amount of loan stood at Rupees ten thousand. In the subsequent year, however, no SHG got credit linked. Nevertheless, in 2000-01 four SHGs were credit linked and bank loans rose to one lakh while in 2001-02 eighteen SHGs got credit linked with further rise in total loans to 3.3 lakhs. The progress of SHG-credit linkage continued with a slow pace till the financial year 2006-07 after which it gained momentum in the years 2007 to 2009. In these two years about 1888 SHGs were credit

linked with the amount of loans rising up to Rupees 1781.69 Lakhs. This can be roughly linked with the overwhelming spike in the number of SHGs having savings-linkage and the corresponding amount of savings (Rupees 2315 Lakhs) in the year 2007. During this time the predominant programme supporting the formation and nurturing of SHGs in Sikkim was SGSY. However, a rapid decline in the savings linkage of SHGs was witnessed in the year 2008 accompanied by a corresponding fall in credit linkage in 2009-10 and 2010-11. This can be attributed to sluggish performance of SGSY with the passage of time. Nevertheless, this programme was reformulated into a more broad-based initiative called the National Rural Livelihood Mission (NRLM) and was launched across the nation in the year 2011. We observe a slow rise in saving linkage during 2008-2011. This was followed by a small upsurge in saving linkage and, as a consequence, credit linkage in the succeeding year—2012. In 2013 and 2014, however, SHG-BLP experienced a slump in terms of the number of SHGs linked and the amount of savings and credit attached with the linkage. Such an outcome can be attributed to the fact that despite being launched in the year 2011, the effective implementation of NRLM was achieved only from 2015 onwards. As a result, we observe a steady rise in both saving and credit linkage afterwards till 2019-20. With the prevalence of COVID-19 during the financial year 2020-21 a sharp decline in credit linkage was observed. However, upon the removal of COVID-19 induced restrictions in the year 2021-22 the credit linkage drives once again gained momentum and, as a consequence, about 502 SHGs were credit linked under NABARD's SHG-BLP programme while the amount of loan disbursed rose to Rupees 795.20 lakhs.

Furthermore, NABARD, in the year 2019-20 came up with a mobile application named *E-shakti* with the motive to ensure financial inclusion amongst the poor. This application closely monitors the group functioning and promotes transparency within

the group which ultimately eases the credit linkage process. However, currently this facility is operational in East Sikkim only and is expected to be launched across the entire state.

3.6.3 Provisions to Promote SHG Products

Apart from providing financial services and capacity building through different livelihood generating training programmes, SHPIs often provide additional support in the form of furnishing various kinds of marketing infrastructures for enhancing the sale of SHG produce. These include providing reserved stalls at *haat bazaars*—a local weekly market which receives a huge influx of buyers and sellers compared to usual markets. Such a provision besides improving the sales prospects also provides remunerative prices for the goods produced by women SHGs.

Moreover, once in a while the Government of Sikkim through the Rural Management Development Department under Sikkim Rural Livelihood Mission (SRLM) organizes SARAS (Sale of Articles of Rural Artisans Societies) *mela*—a trade fair where SHGs from Sikkim as well as other states readily participate. Each participating SHG is allotted a stall wherein the output produced by the group can be put to exhibition and sale (Government of Sikkim, 2020). Items prepared by the SHGs such as handicrafts (bottom flowers, bamboo-work, handbags, jute products), handloom products, weaved woolen garments prepared from sheep and yak wool (sweaters, caps, scarf, shawl etc.), organic products (wine, pickle, *churpi*—a locally popular milk-based snack, cheese, broom, *dalle*—a variety of local chili well known for its sharp flavour) are put up on display for sale.

Apart from this, separate stalls are given for products from Farmer Producer Organisation (FPO), Tribal Cooperative Marketing Development Federation of India (TRIFED) and even for regional products from brands such as Temi Tea and Sikkim

Supreme. Moreover, in order to ease the cash transaction process, provisions for mini-ATMs were made and even *Bank Sakhis* were placed for necessary assistance.

As a further step, on 4th December 2021, Government of Sikkim under SRLM initiative came up with an advanced digital approach to widen the market for SHG products. The digitization initiative brought the SHG products to online stores with the brand name—*Swayam Sikkim* (Government of Sikkim, 2022).

3.6.4 Provision for Additional Aids

Encouraging the economically marginalized to take up livelihood generating activities requires a multidimensional approach. Apart from the initiatives discussed above, some additional aids have been provided to make micro-entrepreneurship more lucrative for the SHG members. As per Government of Sikkim (2020), 116 needy SHG members with proficiency in sewing were provided sewing machines by the state government in the year 2019-20. Again, SHG members who were proficient in sewing skills were collectivized to form 28 sewing groups. This move met with a huge success when these sewing groups were awarded a contract worth Rs.48.45 Lakhs for cutting and tailoring around twenty thousand uniforms for school students by the state government in the year 2020.

Similarly, vegetable growing SHG members were collectivized together to form a Farmers Producer Group (PG). Selected members from PG were provided special training on growing vegetables by SRLM and were instructed to disseminate the acquired knowledge to their fellow members. Furthermore, formation of a collective provided benefits in the form of economies of scale, higher profits, and forward and backward linkages guarding the farmers against price fluctuations in the market (Government of Sikkim, 2020).

Additionally, the state government has made provision to furnish laptops to SHGs to

enhance digitization of SHG operations. According to a recent report a total of 5000 laptops were provided to 4815 SHGs and 185 VAA (Village Administrative Assistants) across all four districts of Sikkim (Government of Sikkim, 2020). Furthermore, under Aajeevika Grameen Express Yojana (AGEY) vehicles to be used as public transport are allotted to SHGs. This solves transportation problems in remote hilly areas while also serving as an additional source of income for the respective SHGs.

3.6.5 Provision for Community Resource Persons (CRP)

Provision has been made to train some selected members from a community and appoint them as Community Resource Persons (CRPs). A CRP is professionally trained in a particular field of endeavor and is supposed to assist the SHG members as and when required. For instance, *Krishi Sakhi* helps in cultivation of food crops, cash crops, and vegetables, *Pasu Sakhi* provides assistance with animal husbandry, *Bank Sakhi* is supposed to assist with financial activities, *Van Sakhi* helps with promoting Non-Timber Forest Produce (NTFP), Non-farm Livelihood Block Resource Person (LHBRP) serves as a facilitator in venturing into different non-farm micro-entrepreneurship activities, Institution Building and Capacity Building Block Resource Person (IBCBBRP) acts as a bridge connecting the SHGs and Ward Development Societies to the capacity building line departments, Social Inclusion and Social Development Block Resource Persons (SISDBRP) ensure that facilities provided by government and non-government organizations are realized by the target group.

3.7 Conclusion

Eradicating poverty of the vast masses requires a multifaceted approach which makes institutional intervention imperative. In this regard, a much-advocated strategy is to promote micro-entrepreneurship among the women folk—who are otherwise

homebound—so as to engage them into gainful economic activity. However, access to formal credit remained a major bottleneck on the part of the poor and marginalized section thwarting their efforts to start any form of rural enterprise. In spite of nationalization of banks, accessing formal loans still remained a daunting task for the majority of the poor due to elaborate documentation, delays in processing and transaction, and most importantly, collateral requirements—an asset which the poor are mostly deprived of at the first place. Under such a backdrop, the idea of micro-credit and self-help-groups (SHGs) gathered substantial momentum and was no less than a panacea in terms of removing barriers in access to formal finance for the poor, especially women. Provision of collateral free loan remained a novel feature of the microfinance movement. Accordingly, several empirical studies reported that the microfinance initiative was fairly successful in reducing the dependence of poor borrowers over the local money lenders or *Mahajans* on exploitative terms. Despite the ease in acquiring credit, the borrowed funds were mostly used for meeting consumption expenditure while diversification into newer economic activities was very limited. Taking this observation into account, institutions have reoriented their policies and focussed on promoting livelihood generation activities among the poor SHG women. Under such a backdrop, this study provides a comprehensive review of different forms of institutional support provided to SHGs. We find that institutions have taken a significant step to increase the outreach of formal banking services to the SHGs in the form of saving linkage and credit linkage. Different funds such as RF, CIF, and VRF have been provided to cater multiple needs of the members. In order to channelise credit and funds to productive use diverse capacity building training programmes have been arranged in the field of animal husbandry, organic farming, petty manufacturing and vocational training on multiple skills. Further, with the aim to promote SHG products,

they are equipped with reserved stalls in weekly *haat bazaars*. Once in a while, special fairs are organized where SHG products are set to display for sale. E-platforms have been launched to improve the visibility and sales of SHG products at the national scale. The state government extended its support by providing sewing machines, laptops, AGEY vehicles and raw materials to stimulate micro-enterprise adoption. Furthermore, to improve the viability of nascent micro-enterprises the state government provided special business contracts to the SHGs. Producer groups were formed to augment the scale of production. Additionally, selected SHG members were provided with specialized training and were placed as Community Resource Persons to disseminate technical knowhow across their peer groups.

CHAPTER 4

SOCIO-ECONOMIC STATUS OF THE SHG MEMBERS AND THE IMPACT OF LIVELIHOOD TRAINING ON THEIR ENTREPRENEURIAL SKILLS

4.1. Introduction

Women's participation in economic activities enhances their self-confidence, self-esteem, leadership skills, awareness, social acceptability as well as ensures a better living condition for their entire household (Paramanandam & Packirisamy, 2015). Engaging womenfolk into economic activities to stimulate financial independence—a critical prerequisite to women empowerment—has long been a key development goal, especially for the third world countries.

In developing countries, the traditional societal norms, have rendered rural women mostly homebound and engaged in household chores with limited freedom of spatial mobility. While lower levels of educational attainment have restricted their scope of securing formal employment; daily-wage work, on the other hand, is often looked upon with social stigma. Under such a backdrop, women-led rural microenterprises appear to serve as credible avenues of productive self-employment for rural women. Considering its vast welfare implications, the successive governments have launched several employment augmenting programmes like Integrated Rural Development Programme (IRDP) and Training of Rural Youth for Self-Employment (TRYSEM) in the years 1978 and 1979 respectively. Although these two programmes targeted both rural men and women, special programmes targeting women such as Development of Women and Children in Rural Areas (DWCRA) and Support to Training and Employment Programme for women (STEP) were also rolled out in the years 1982 and 1986 respectively. Apart from these programmes which targeted individuals, SHG-

Bank Linkage Programme (SHG-BLP) deployed by NABARD during the 1990s sought to extend formal financial services especially to women enrolled with SHGs for promoting self-employment amongst them. The subsequent programmes—SGSY, NRLM, and NERLP—besides providing financial support to the beneficiaries also endeavoured to equip women with suitable entrepreneurship skills through several capacity building training programmes.

The launch of several SHG based initiatives attracted significant academic attention over the years and consequently a substantial number of scholarly studies relating to various aspects of SHGs have emerged. A significant portion of the literature focuses on the role of the SHG movement in reducing the dependence of rural borrowers on informal moneylenders (Hoffmann et al., 2021), consumption smoothing (Deininger & Liu, 2013), alleviating poverty (Ghosh, 2012; Maity & Sarania, 2017), enabling rural households to augment income and employment (Banerjee & Ghosh, 2012; Panda, 2009) and thereby reduce economic vulnerability (Swain & Floro, 2012). Another set of studies have explored the role of SHGs on empowering rural women through improving their self-esteem, confidence, knowledge (Paramanandam & Packirisamy, 2015), autonomy (de Hoop et al., 2014; Mohapatra & Sahoo, 2016), ability to make choices regarding household assets and life goals (Mohapatra & Sahoo, 2016), mobility, improving command over family decision making (Banerjee & Ghosh, 2012), and household asset possession (Garikipati, 2008; Swain & Varghese, 2014). We even find studies tracing the impact of SHG participation on improvement of maternal health care (Saha et al., 2013), and infant and child health care (Gugerty et al., 2019). Apart from these studies which highlight the positive impact of the SHG initiative, there are a number of studies too which show mixed results (Anil & Bal, 2021; Basumatary et al., 2023; de Hoop et al., 2014; Sahu, 2015). Despite a substantial number of academic

discourses on the emancipatory role of SHGs, a key issue on SHG induced rural development relates to livelihood training programmes enabling women members to enhance entrepreneurial skills and take up self-employment. The number of studies devoted to assessing the status and efficacy of such training programmes over the entrepreneurial skills of the women members is seriously lacking.

Among a handful of studies that seek to investigate the impact of training on entrepreneurial skills of SHG members, the study by Sharma et al. (2012) has found a medium improvement in knowledge, skill, and attitude among majority of the SHG women who attended the training programme. Another study by Karlan and Valdivia (2011) conducted under the rural setting of Peru using randomized controlled trials found a positive impact of business training on business knowledge of the group members. In a study conducted in Pune with a small sample size of 155 SHG members, Banerjee and Borhade (2016) found that training had a positive impact on the entrepreneurial skills of the SHG members. The studies conducted in the Indian context, however, rely on small samples and crude methodology limiting the statistical validity of their findings. Furthermore, participation into livelihood training programme is susceptible to self-selection bias as a portion of the intended beneficiaries may self-select themselves into attending the programme while others may not. This chapter with its twin motive seeks to explore the socio-economic profile of the SHG members (which remains critical in decision regarding training participation) and evaluates the impact of livelihood training on entrepreneurship skills of the SHG members who chose to attend the programme. The novelty of our study is threefold: First, our study is based on a representative sample drawn from all the four districts of Sikkim—a landlocked Himalayan state located in the northeastern zone of India—where despite of having a considerable growth in the number of SHGs for the past two and a half decades has

received very little academic attention; Second, our study eliminates potential self-selection bias associated with livelihood training programme participation using propensity score matching method; Third, the robustness of our estimated results is ensured with the help of Rosenbaum bounds sensitivity analysis.

4.2. Conceptual Framework and Econometric Methodology

4.2.1 Livelihood Training Programmes

Since a majority of the rural women members fall short in education, skills, exposure, and confidence, the possibility that they would venture into a home-based business activity or a micro-enterprise all by themselves is limited. Indeed, a bulk of empirical studies have revealed that in majority of the cases credit appropriated via SHGs were used for consumption smoothing rather than being invested in a productive activity (Paramanandam & Packirisamy, 2015; Wickramasinghe & Fernando, 2017). As a consequence, orienting rural women towards productive economic activity becomes imperative for addressing the pervasive problem of rural poverty and vulnerability. This vision was realized with the launch of *Swarna Jayanti Gram Swarozgar Yojna* (SGSY) later reformulated into National Rural Livelihood Mission (NRLM) wherein an important tenet was to provide skill-based livelihood training to the SHG women so as to enable them start a home-based micro-enterprise.

Such training programmes are usually organized in the village community halls for easy access and ensuring a higher participation rate of the SHG members. The duration of the training programme depends upon the nature of the enterprise/activity and usually varies from five to 15 days while few last up to a month. In some cases, providing training in the rural center is not feasible because the activity involved requires a larger set up. Under such situations, the trainees are required to attend the training at an urban center. The associated transportation and logistics expenditure is borne by the

concerned SHPIs.

These programmes impart them practical skills in a variety of pursuits which are crafted to suit their local geographical setup. SHG women are imparted skills on basic financial management, risk management, production, packaging, establishing forward and backward linkages, marketing and other skills related to a particular line of activity. Apart from training, the SHGs are also provided additional incentives in the form of raw materials, hand-holding in setting up small manufacturing units, and marketing assistance from the SHPIs.

In Sikkim, during the period of our study, two programmes were found to be working towards development of SHGs and providing them livelihood training. These were NRLM—working in North and East Sikkim—and the World Bank sponsored North East Rural Livelihood Project (NERLP) in West and South Sikkim.

The officers of NRLM and NERLP usually conduct a meeting with the SHG members under their jurisdiction and invite their opinion as to the type of training most suited for the community. This makes training, essentially, a demand driven activity wherein the themes are crafted taking account of the interests, capabilities, existing resources, and geographical advantage. Since Sikkim's diverse landscape, fertile land and conducive climate provide a huge scope for cultivating a wide variety of cereals, horticultural crops, floriculture, and livestock; a majority of the trainings delivered to the SHG members tend to revolve around agriculture and allied activities. Our sample SHG members reported to have received training on animal husbandry: dairy, goatary, piggery, and poultry; production of cash crops: mushrooms, ginger, turmeric, spicy chilies, and organic farming; petty-manufacturing: broom binding, knitting, bakery, processing, packaging, and marketing of turmeric, home-made pickle business, bottom-flower, bouquet, candle making, jute bag, bamboo handicraft, snacks etc.; and other

vocational trainings like operating a beauty parlour, business marketing and planning, public speaking and event management, and anchoring etc. In addition to skill-based training, the trainees are also provided raw materials and other equipment to initiate the vocation they have been trained with.

For instance, SHG members of two selected villages were provided training on turmeric production; each SHG was granted 50 kilograms of turmeric seeds to be disbursed among the training attendees. One SHG was selected for training on turmeric processing and was allotted a turmeric processing plant. SHG women attending training on poultry farming were provided poultry chicks. Among those who participated in training on tailoring, few extremely poor trainees with good capabilities were identified and were provided sewing machines without any charge.

Delivering training on diverse vocations requires infrastructural support and credible resource persons with expertise. Therefore, SHPIs often organize such programmes in collaboration with apex skill providing agencies[i] from Sikkim as well as the neighbouring state of West Bengal. In fact, in one case it was found that SHPIs had gone to the extent of collaborating with *Kudumbashree*—an SHG promoting organization from the Southern state of Kerala (Government of Sikkim, 2020).

4.2.2. Entrepreneurship Skills and its Measurement

Despite a vast literature in the field of entrepreneurship, there exists no consensus regarding the definition of an entrepreneur. Entrepreneurship is a multidimensional concept and has been defined in diverse ways based on different types of entrepreneurial skills necessary for running a business venture successfully.

The earliest academic discourse in the field of entrepreneurship is attributed to Richard Cantillon who defines an entrepreneur as an economic agent who undertakes risks and faces uncertainties to earn profit while buying and selling commodities (Cantillon,

1755). Jean-Baptise Say added to Cantillon's definition and suggested that, apart from having risk-taking ability under unpredictable circumstances, an entrepreneur must be innovative, should have the quality of a good organiser and manager with the skill to assemble different factors of production (land, labour, and capital) and supervise the production process (Say, 1847). Again, around the 1920s Frank Knight, following Cantillon's definition, stressed on uncertainty. According to him an entrepreneur should be able to make business decisions in situations where outcomes are highly unpredictable (Knight, 1921). Penrose, around 1960 in her book "*The Theory of the Growth of the Firm*" came up with a list of characteristics of an entrepreneur which include self-assuredness, innovation, eagerness to find new resources for business, and possessing efficient managerial skills leading to expansion of the business (Penrose, 1959). Later, Joseph Alois Schumpeter, who is considered a pioneer of modern thinking on entrepreneurship (Campbell & Wilson, 1975), added to Say's concept of entrepreneur's innovativeness. According to him, an entrepreneur should be innovative in terms of introducing new goods and services, implementing futuristic techniques of production, identifying new markets for sale of finished products, discovering additional avenues for procuring raw materials, and should implement innovative business management strategies (Schumpeter, 1934). Harvey Leibenstein, around 1970, pointed out that an entrepreneur should be aware of obsolete ideas and technology and should be keen on replacing it with newer ones and thereby reduce the wastage of resources. In line with earlier proponents of entrepreneurship (Richard Cantillon, J.B. Say and Frank. H. Knight) Leibenstein also acknowledged the importance of decision making under uncertain situations as an attribute for a successful entrepreneur (Leibenstein, 1979). Israel Kirzner around 1975 defined entrepreneur as an individual who is continuously studying the market trends in search of new opportunities for

buying and selling resources which earn them profit (Kirzner, 1982). According to McClelland an entrepreneur should have self-awareness, should believe in their ideas and should have excellent persuasive power (McClelland, 1987). Similarly, contemporary studies in the domain also point out that an entrepreneur should have creative ideas and vision for future progress (Csikszentmihalyi, 1996; Locke, 2000), business management skills (Putta, 2014), interpersonal skills (Mattare, 2010), self-confidence (Chell & Tracey, 2005), passion (Boyd & Vozikis, 1994), persuasiveness (Jack & Anderson, 2002) and risk-taking ability (Miner & Raju, 2004). Among the extant literature in the domain of entrepreneurship we have followed the study by Lyons et al., (2019, 2020) as these studies have undertaken a meticulous scrutiny of the available literature and have provided a list of thirty skills[ii] grouped under four heads showcasing different aspects of entrepreneurship, specially under rural setup. The four heads are: "Business management skills," "Relationship management skills," "Organisational process management" and "Transformational management skills." As entrepreneurial skill is a qualitative variable, it cannot be measured in terms of abstract cardinal numbers. Thus, following recent studies (Lyons et al., 2019, 2020; Oosterbeek et al., 2010) we measure the thirty different constituents of entrepreneurship skills using five-point Likert scale[iii].When asked: "how do you rate yourself in terms of the listed entrepreneurial skills?", our respondents rated themselves with the values 1 to 5, where 1 signifies very low, 2 denotes low, 3 signifies medium, 4 indicates high, and finally, 5 corresponds to very high. Following Oosterbeek et al. (2010), we aggregate all the thirty ratings of each sample respondent by taking a simple arithmetic mean to obtain a single score termed as 'entrepreneurial skills' which is a continuous variable ranging from 1 to 5.

4.2.3. Econometric Methodology

In order to understand the socio-economic profile of the trained and untrained SHG members of Sikkim we use basic statistical tests like the chi-square test and independent sample t-test to evaluate the statistical significance of the observed differences between the parameters.

Again, with an objective to investigate the potential impact of livelihood training on formation of entrepreneurship skills—a continuous variable—we have employed multiple linear regression model which can be specified as:

$$Entrepreneurship\ skills = \alpha + \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \cdots \ldots \ldots \ldots \ldots + \beta_{14} X_{i11} + \mu_i$$

In the chosen model, out of all other regressors, we are mainly concerned about the binary variable which accounts for respondents' participation in livelihood training programme. A precise description of all the regressors employed in our model as well as the expected relationship of each with entrepreneurship skills is provided in Table 4.1.

Table 4.1: List of Independent Variables and their Expected Relationship with Entrepreneurship Skills

Dependent variable: Entrepreneurial Skills		
Variable	**Description**	**Expected Relationship**
Training Status (X_1)	A binary variable denoting participation in a livelihood training programme. Training Status =1, if the SHG member has attended any one of the training programmes; otherwise=0.	(+)
Respondent's Age group (X_2)	A variable denoting respondents' age group. Age has been categorized into five levels: less than 30, 31–40, 41–50, 51–60, and above 60.	(+)
Respondent's Education (X_3)	The variable accounts for a respondent's educational attainment. It consists of six distinct categories: Illiterate, Primary, Middle, High school, Senior Secondary, and graduate & above.	(+)

Table 4.1: List of Independent Variables and their Expected Relationship with Entrepreneurship Skills

Dependent variable: Entrepreneurial Skills		
Variable	**Description**	**Expected Relationship**
Caste (X_4)	A categorical variable with three levels signifying caste of the respondent: General/Other Backward Classes (OBCs), Scheduled Castes (SC) and Scheduled Tribes (ST).	(+)
Ethnic Group (X_5)	It is a categorical variable denoting the ethnic group of the respondent. It has five categories: Bhutia, Lepcha, Limboo, Nepali, and Sherpa.	(+)
Land ownership (X_6)	Whether the respondent's household owns ancestral land. If Yes =1; otherwise=0.	(+/-)
No. of dependents (X_7)	It is a discrete variable representing the number of dependent members in a respondent's household. Besides accounting for the usual dependent members with age in the range of 0 to 14 years and those above 65, it also includes those household members who are unemployed, either temporarily or permanently.	(+)
No. of earning members (X_8)	A discrete variable denoting the number of earning members in the respondent's household (excluding the respondent).	(+)
Family Type (X_9)	It is a binary variable that takes into account the family type—joint or nuclear—of the respondent. It takes a value '1' if the respondent belongs to a joint family, otherwise it takes a value '0'.	(+/-)
Occupation of Household head (X_{10})	A binary variable which takes the value '1', if the household head operates an enterprise; otherwise, it takes a value '0'	(+)
District Dummies (X_{11})	To account for spatial differences with respect to entrepreneurship skills we have used dummies to represent each of the four districts: East Sikkim, West Sikkim, North Sikkim, and South Sikkim.	(+)

4.3. Socio-economic Profile of SHG Members of Sikkim

Regardless of remarkable efforts put forward by the SHPIs for providing skill-based training to SHG members, participation in such programmes have remained modest. In spite of the provision of livelihood training as close as in their neighbourhood at no monetary cost at all, a significant number of women members were found to display no inclination towards such programmes. Such behaviour may be attributed to the socio-economic characteristics of the women members which has been explored in section 4.3.

Table 4.2 presents the socio-economic status for our full sample data as well as its two categories of trained and untrained SHG members.

Table 4.2: Socio-Economic Profile of the Trained and Untrained SHG Members of Sikkim

Variables (1)	All (2)	Untrained (3)	Trained (4)	χ^2 (5)	P-value (6)
Age categories					
<30	74 (17.79)	41 (21.58)	33 (14.60)	18.258	0.001
31-40	158 (37.98)	70 (36.84)	88 (38.94)		
41-50	109 (26.20)	36 (18.95)	73 (32.30)		
51-60	54 (12.98)	27 (14.21)	27 (11.95)		
>61	21 (5.05)	16 (8.42)	5 (2.21)		
Education					
Illiterate (can do signature only)	54 (12.98)	38 (20.00)	16 (7.08)	22.708	0.000
Primary (I-V)	104 (25.00)	51 (26.84)	53 (23.45)		
Middle (VI-VII)	36 (8.65)	9 (4.74)	27 (11.95)		
High school (VIII-X)	159 (38.22)	66 (34.74)	93 (41.15)		
Senior secondary (XI-XII)	48 (11.54)	18 (9.47)	30 (13.27)		
College and above	15 (3.61)	8 (4.21)	7 (3.10)		
Caste					
General/OBC	295 (70.91)	129 (67.89)	166 (73.45)	1.882	0.390
SC	12 (2.88)	7 (3.68)	5 (2.21)		

ST	109 (26.20)	54 (28.42)	55 (24.34)		
Ethnic Group					
Bhutia	33 (7.93)	20 (10.53)	13 (5.75)	4.356	0.360
Lepcha	18 (4.33)	9 (4.74)	9 (3.98)		
Limboo	13 (3.13)	7 (3.68)	6 (2.65)		
Nepali	338 (81.25)	149 (78.42)	189 (83.63)		
Sherpa	14 (3.37)	5 (2.63)	9 (3.98)		
Family Type					
Nuclear	230 (55.29)	115 (60.53)	115 (50.88)	3.881	0.049
Joint	186 (44.71)	75 (39.47)	111 (49.12)		
Land ownership					
No	170 (40.87)	94 (49.47)	76 (33.63)	10.724	0.001
Yes	246 (59.13)	96 (50.53)	150 (66.37)		
Occupation of Household Head (if HH is an entrepreneur)					
No	293 (70.43)	150 (78.95)	143 (63.27)	12.176	0.000
Yes	123 (29.57)	40 (21.05)	83 (36.73)		
District					
East Sikkim	104 (25.00)	48 (25.26)	56 (24.78)	9.562	0.023
West Sikkim	93 (22.36)	33 (17.37)	60 (26.55)		
North Sikkim	83 (19.95)	34 (17.89)	49 (21.68)		
South Sikkim	136 (32.69)	75 (39.47)	61 (26.99)		

Continuous variables								
	All		**Untrained**		**Trained**		**t-stat**	**p-value**
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**		
No. of dependents	2.49	1.20	2.43	1.13	2.54	1.26	-0.961	0.337
No. of earning members	1.53	0.91	1.54	0.98	1.52	0.85	0.164	0.870
Entrepreneurial skill	2.61	1.03	2.16	0.81	3.00	1.03	-9.063	0.000

Note: Figures in parentheses denote the respective percentages

Source: Survey data

A major portion (64.18 percent) of our sample SHG members belong to the age bracket 31-50 years. It is quite noticeable that a higher proportion of SHG members who reported to have received training fall in the age group of 31–50 compared to their untrained peers. We also note that the proportion of untrained members in the age

categories of '*less than 30*', '*51–60*', and '*more than 60*' is higher compared to the trained members ($\chi^2 = 18.258, p = 0.001$). The observed outcome is quite plausible as SHG members below 30 years of age were found to be more inclined towards childcare while those above 50 were susceptible to health hazards and lacked motivation to venture into newer vocations.

Acquisition of newer skills, in general, is expected to improve with increase in the level of education. We find that almost 38 percent of our sample respondents have obtained formal education up to high school. However, a comparison of the trained and untrained members on educational attainment indicates that a higher proportion of the members who had completed education up to middle, high-school, and senior secondary, were found to be trained. Conversely, a higher percentage of illiterate, those having primary education, and those having education up to college and above were found to be untrained. This is because the members with low level of education usually derive their livelihood out of wage labour in agriculture and non-agricultural sectors; their chances of attending training becomes limited as it would require them forgo their wage earnings. Also, those having higher education—graduation and above—were found to be employed in the urban pockets and thereby were unable to spare time for attending the training programmes.

Our sample was found to incorporate SHG members from almost all major caste and ethnic groups. However, most of our sample respondents belonged to the General/OBC category and Nepali ethnicity. A similar pattern is observed among the trained members. This observation, however, is not robust as the corresponding test statistics are insignificant.

Around 55 percent of the SHG members were from nuclear families while the remaining 45 percent were from joint families. A comparative examination across the

two categories shows that a higher share of SHG members from nuclear families were untrained while a higher share of their peers from joint families were trained (χ^2 = *3.881, p = 0.049*). This hints to a notion that unlike women from nuclear families, those from joint families perhaps receive more support from their household members who compensate for their absence while they are away for attending the training programmes.

Under rural settings, land ownership is a critical indicator of wealth. Out of the sample respondents who reported to own ancestral land, a significantly larger share was found to be trained. On the contrary, among those reporting no land ownership, a higher proportion of respondents were found to be untrained. Clearly, respondents opting for training were better off in terms of land ownership compared to those who reported to be untrained.

Having a household head who is engaged in an entrepreneurial venture is likely to endow an individual with requisite knowledge, skills, resources, and attitude to start an enterprise. About 29.57 percent of the sample respondents reported that their household head is engaged in an enterprise. A higher proportion of SHG members who reported to have an entrepreneur household head were found to be trained ($\chi 2 = 12.176, p = 0.00$).

Of the four districts in the state, the share of trained SHG members was found to be higher in West Sikkim and North Sikkim. On the contrary, in East and South Sikkim the share of untrained members was higher compared to the trained ones.

The average number of dependents and earning members in a respondent's household was found to be 2.49 and 1.53 respectively. As the corresponding t-values turn out to be statistically insignificant any significant difference between the trained and untrained respondents on these two parameters can be safely ruled out.

Nonetheless, the difference in entrepreneurship skills among the two groups emerges to be statistically significant. Clearly, trained members reported to have higher entrepreneurship skills vis-a-vis the untrained ones.

4.4. Regression Results

The results for the multiple linear regression model have been shown in Table 4.3. As expected, we find a statistically significant positive linkage between livelihood training participation and entrepreneurship skills. Additionally, our estimated model reveals key relationships between other regressors—taken as control variables—with entrepreneurship skills. It is found that respondents from the *Nepali* community have statistically lower entrepreneurial skills compared to their peers from the *Bhutia* community.

Respondents belonging to joint families were found to have statistically higher entrepreneurship skills compared to their counterparts with nuclear families. Similarly, respondents whose household heads are entrepreneurs were found to have statistically higher entrepreneurship skills vis-a-vis their peers whose household heads are engaged in other professions. A higher number of both earning members and dependents in a respondent's household is found to be statistically associated with lower acquisition of entrepreneurial skills.

Besides, a distinct spatial disparity in entrepreneurship skills is noted among the sample respondents. Respondents from West Sikkim are found to be faring better in terms of entrepreneurial skills as compared to the base category—*East Sikkim.*

It is worthwhile to note, however, that variables like respondent's age, education, caste, and ownership of ancestral land are found to have no statistically significant relationship with entrepreneurship skills.

Table 4.3: Impact of Training on Entrepreneurship Skills (Multiple Linear Regression)

Variables	Estimate	Std. error
(Intercept)	2.583 ***	0.247
Training (Yes=1)	0.596 ***	0.063
Respondent's Age group		
>60	(base)	
<30	-0.063	0.161
31-40	0.013	0.151
41-50	0.115	0.151
51-60	0.129	0.153
Respondent's Education		
Graduation and above	(base)	
Illiterate	-0.005	0.191
Primary (I-V)	-0.251	0.172
Middle (VI-VII)	-0.173	0.185
High School (VIII-X)	-0.207	0.166
Senior-Secondary (XI-XII)	-0.326	0.179
Caste		
Gen/OBC (ref)	(base)	
SC	-0.217	0.176
ST	-0.079	0.115
Ethnic Group		
Bhutia	(base)	
Lepcha	-0.244	0.176
Limboo	-0.292	0.202
Nepali	-0.363 *	0.153
Sherpa	-0.252	0.193
No. of earning members	-0.108 **	0.039
Family type (Joint=1)	0.195 *	0.080
No. of dependents	-0.107 ***	0.031
Land ownership (Yes=1)	0.063	0.071
Occupation of household head (entrepreneur=1)	1.516 ***	0.070
District		
East Sikkim	(base)	
West Sikkim	0.279 **	0.094
North Sikkim	-0.137	0.108
South Sikkim	0.086	0.090
Diagnostics		
No. of obs.	416	
Multiple R-squared	0.701	
Adjusted R-squared	0.682	
F-statistic:	38.11 ***	
****p<0.001; **p<0.01; *p<0.05*		

Source: Authors estimate based on primary data using R version 4.1.2

We refrain from a detailed discussion of the estimated model in Table 4.3 as our primary predictor—*participation into training*—happens to be a choice variable. In fact, the respondents have self-selected themselves to participate in the livelihood training programmes. This self-selection leads to non-random sample selection, which gives rise to biased conclusions (Cameron & Trivedi, 2005; Heckman, 1979). Such selection bias can be adequately addressed using Propensity Score Matching (PSM) method (Guo & Fraser, 2014). PSM assigns a propensity score *P(X)* to each respondent. Based on these scores, out of the untreated respondents, a suitable counterfactual is identified against each of the treated respondents and the parameter of interest is compared for evaluating the real impact of treatment. Since the treatment participation is a binary variable, we estimate *P(X)* using a logistic regression model. The covariates used in this model are respondent's age group, respondent's education, caste, ethnic group, family type, occupation of household head, land ownership, district to which respondents belong to, years of SHG-enrolment which means number of years a SHG member has remained associated with the SHG, number of children below age 14 in the respondent's family and number of earning members (except respondent) categorised into four levels. It is worthwhile to state that the covariates used are confounding in nature. The results of the regression are presented in Table 4.4. The results show that individual characteristics such as belonging to the mid-age category (41–50 years), attainment of formal schooling from primary to senior secondary, and belonging to Nepali ethnicity have a statistically significant positive impact on training participation. Also, household characteristics such as living in a joint family, household-head being an entrepreneur, and ownership of ancestral land makes a respondent significantly more likely to participate in training programmes.

Table 4.4: Estimation of Propensity Score Using Logit Model

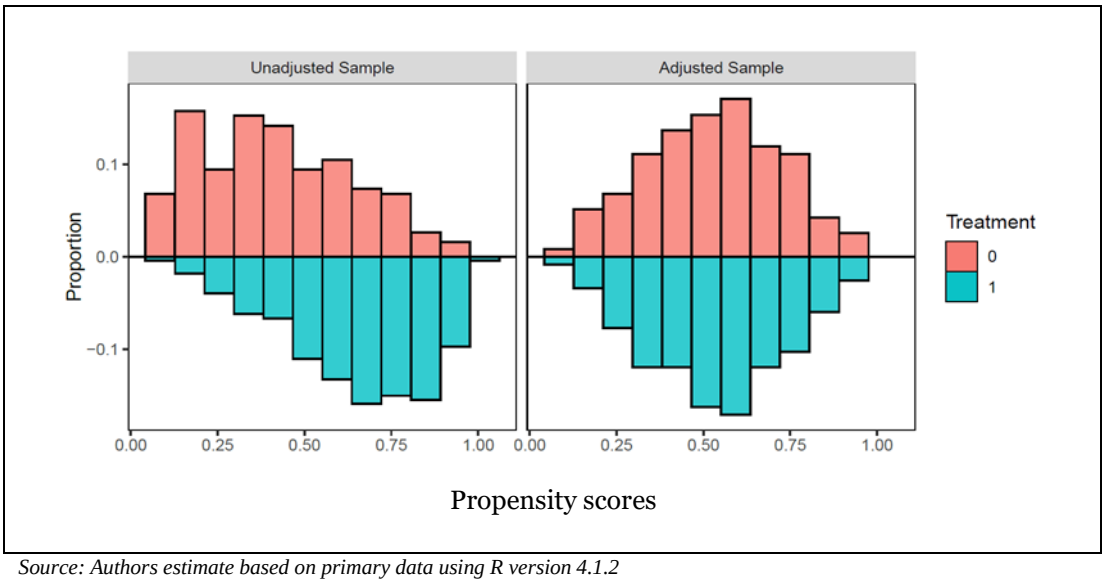
Dependent Variable: Training programme participation (T), T= 1, if respondent participated in training programme; Otherwise, T= 0.		
Variables	**Coefficient**	**Std. Error**
(Intercept)	-5.454 ***	1.254
Respondent's Age group		
>60	(base)	
<30	0.421	0.685
31–40	0.992	0.635
41–50	1.372 *	0.638
51–60	1.093	0.661
Respondent's Education		
Illiterate	(base)	
Primary (I–V)	0.947 *	0.432
Middle (VI–VII)	2.099 ***	0.585
High School (VIII–X)	1.075 *	0.437
Senior-Secondary (XI–XII)	1.397 **	0.521
Graduation and above	0.337	0.723
Caste		
Gen/OBC	(base)	
SC	-0.289	0.707
ST	0.397	0.475
Ethnic Group		
Bhutia	(base)	
Lepcha	0.454	0.666
Limboo	0.981	0.797
Nepali	1.614 **	0.610
Sherpa	1.227	0.754
No. of Children	-0.519 ***	0.155
No. of earning members except respondent		
No other member is earning	(base)	
1 – 2	1.310	0.757
3 – 4	1.168	0.857
>4	0.610	1.524
Family type (Joint=1)	0.973 ***	0.282
Occupation of household head (entrepreneur=1)	0.708 *	0.285
Land ownership (Yes=1)	0.743 **	0.276
Years of SHG-enrolment	0.062	0.054
District		
East Sikkim	(base)	
West Sikkim	0.807 *	0.381
North Sikkim	1.221 **	0.434
South Sikkim	-0.207	0.431
Diagnostics- No. of obs. = 416; AIC = 524.84; LR chi2 = 102.74***; McFadden's R^2 = 0.18; Log likelihood = -235.421		
****p<0.001; **p<0.01; *p<0.05*		

Source: Authors estimate based on primary data using R version 4.1.2

On the contrary, a respondent's likelihood of training participation declines with increase in the 'number of children.' Moreover, the respondents from West Sikkim and North Sikkim are found to be more likely to attend the training programmes. Finally, the variables: caste, number of earning members in the household, and years of SHG enrolment are found to be statistically insignificant in determining training participation.

The estimated logit model provides propensity scores *P(X)* to all the sample respondents which includes the treatment group (the respondents who participated in livelihood training programmes) and the control group (the respondents who opted out of such training). The treated cases were matched with the control ones using several matching methods. Out of all matching methods employed, two methods were found to provide a balanced distribution of *P(X)* for the two groups. The first matching method is one to one Nearest Neighbour matching (N.N matching) without replacement with Caliper = 0.06.

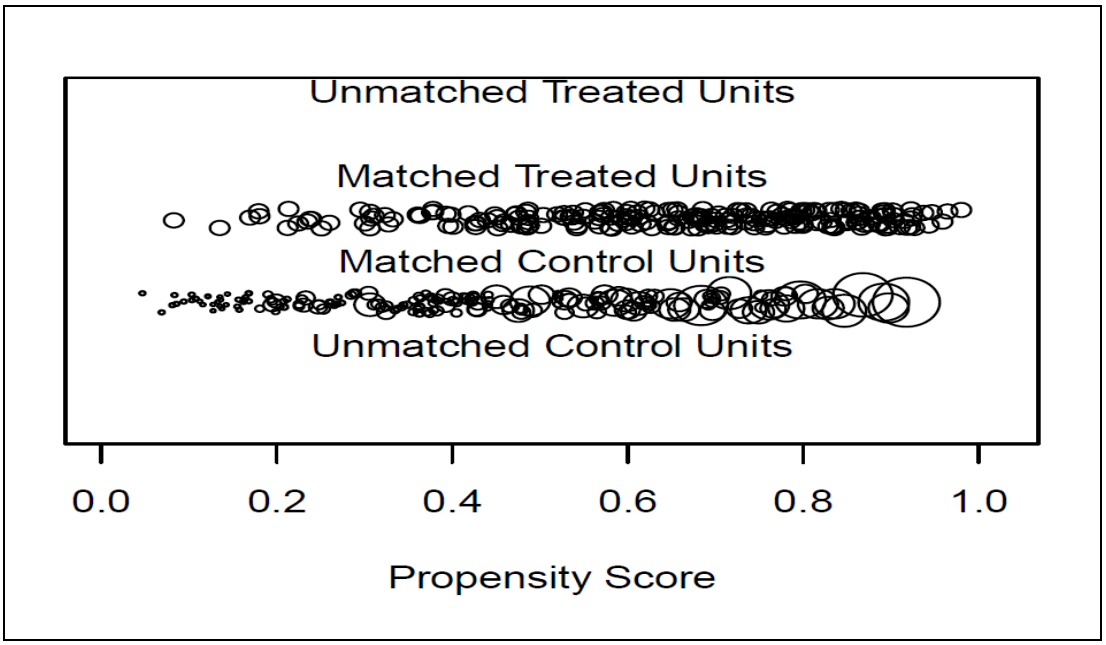
Figure 4.1: Mirror Histogram Representing the Propensity Scores Before and After Matching (1:1 Nearest Neighbour Matching Without Replacement and with Caliper = 0.06)



Source: Authors estimate based on primary data using R version 4.1.2

According to this matching method, every member from the treated group finds a match in the control group based on the least distance between the propensity scores, provided that the distance should not exceed the range of 0.06. The mirror histogram presented in Figure 4.1 shows the distribution of both unadjusted propensity scores (before matching) and adjusted propensity scores (after matching). The upper portion of the mirror histogram represents the distribution of propensity scores for the control group and lower one for the treatment group. It is evident from these mirror histograms that, before matching, the distribution of propensity scores between the treatment and control group is not balanced while after matching it is balanced and we find a proper overlap between the distributions.

Figure 4.2: Jitter Plot Representing the Propensity Scores After Matching (Full Matching)



Source: Authors estimate based on primary data using R version 4.1.2

The second method used to match the propensity scores of trained members with that of the untrained ones is Full matching method. The distribution of propensity scores using this matching method is presented with the help of a jitter plot shown in Figure 4.2. The jitter plot in Figure 4.2 exhibits a good match between the treated and control

groups. Additionally, as no unmatched cases are observed in both the groups, we do not lose any of our sample observations. Since suitable counterfactuals have been identified for the treated individuals, the subsequent step is to estimate the Average Treatment effect on the Treated (ATT).

Table 4.5: Estimates based on Propensity Score Matching Methods

Outcome variable: Entrepreneurship Skill

Explanatory variable: Participation of SHG member into Livelihood training programme

	Entrepreneurship skill		
Matching Algorithms	**ATT**	**S.E.**	**Observations**
1:1 N.N Caliper = 0.06	0.624***	0.122	234
Full Matching	0.648***	0.091	416

****p<0.001; **p<0.01; *p<0.05*

Source: Authors estimate based on primary data using R version 4.1.2

Table 4.5 presents the PSM estimates for evaluating the causal effect of training programme participation on entrepreneurship skills. The ATT shows a significant and positive association between training programme participation and entrepreneurship skills. However, robustness of this finding depends highly on its sensitivity to hidden biases or unobserved confounding (Guo & Fraser, 2014). In order to confirm its robustness, a sensitivity analysis is carried out following Rosenbaum bounds approach using the specification as (Guo & Fraser, 2014):

$$\frac{1}{\Gamma} \leq \frac{\frac{\pi_1}{1-\pi_1}}{\frac{\pi_0}{1-\pi_0}} \leq \Gamma$$

Given that $\Gamma \geq 1$ and both treatment and control group have the same covariates but do not have the same π.

π_i = Chances of getting treated, i= 0 for control and i = 1 for treated

The test results presented in Table 4.6 show different values of Gamma (Γ) which denote the odds of differential assignment to training programmes due to unobserved

factors. It is clearly observed that our result becomes sensitive to unobservables at about Γ= 2.4. This implies that the unobserved confounder must increase the odds of treatment by more than 2.3 times for our finding to be refuted. Since having a confounder with such a substantial impact is not possible, our outcome showing the impact of training on entrepreneurship skills is insensitive. Therefore, the claim that participation in livelihood training programmes improves entrepreneurial skills is indeed acceptable.

Table 4.6: Rosenbaum bounds- Entrepreneurship skill

Wilcoxon Signed Rank Test		
Γ	Lower bound	Upper bound
1	0	0.000
1.1	0	0.000
1.2	0	0.000
1.3	0	0.000
1.4	0	0.000
1.5	0	0.000
1.6	0	0.001
1.7	0	0.002
1.8	0	0.004
1.9	0	0.007
2	0	0.012
2.1	0	0.020
2.2	0	0.031
2.3	0	0.046
2.4	0	0.064
2.5	0	0.087
Note: Gamma is Odds of Differential Assignment to Treatment Due to Unobserved Factors		

Source: Authors estimate based on primary data using R version 4.1.2

4.5. Conclusion and Policy Implication

Over the past three decades SHGs have remained at the forefront of public policy on empowering rural women at the grassroots. Although the inceptive policies concerning SHGs were targeted towards forming, nurturing, and extending formal finance; the later initiatives focussed on fostering entrepreneurship skills among the SHG women. Consequently, several capacity building training programmes were organised for

enabling women members to take up income generating activities. Our study tries to evaluate the impact of livelihood training programmes on entrepreneurial skills of sample SHG members. Using a representative sample of 416 SHG members, collected through a multi-stage cluster sampling, we employ multiple linear regression model to test our hypothesis. The regression results show a significantly positive association between training programme participation and entrepreneurial skills. A close perusal of the control variables reveals that, living in a joint family, household head being an entrepreneur, and residing in West Sikkim contributes positively towards having higher level of entrepreneurial skills. On the other hand, belonging to '*Nepali'* ethnicity, having higher number of earning members, and belonging to a family with higher number of dependents contributed negatively towards entrepreneurship skills. However, these results were prone to potential self-selection bias as respondents belonging to age category 41–50, those with education below graduation, belonging to '*Nepali'* ethnicity, having less number of children, coming from joint family, having entrepreneurial background, in possession of ancestral land and belonging to North Sikkim or West Sikkim were found to be more inclined towards training programme participation. We employed propensity score matching method to address the issue of potential self-selection bias. The matching algorithm 1:1 N.N. matching method with Caliper = 0.06 and full matching method were implemented to randomise the data. The result of ATT on the matched data revealed that livelihood training programmes does contribute to entrepreneurial skill enhancement of the SHG members of Sikkim. This result was further subjected to Rosenbaum bounds sensitivity analysis for conforming its robustness. The result confirms that the positive treatment impact will not be ruled out due to unobserved biases. In line with the results, we suggest few policy measures. To begin with, SHPIs should strive towards increasing SHG participation among the

deprived women as it opens up access to multiple services which are otherwise inaccessible to them. Next, as the livelihood training programmes are found to enhance entrepreneurial skills, frequency of such programmes should be increased. Further, provisions should be made for video documentation of the training sessions and shared among the trainees for future reference. The trainees should be provided with a mentor to clear their doubts even after the programmes is over. Finally, SHPIs should come up with additional incentives such as, providing rewards to the outstanding trainees, delivering participation certificates, supplying resources for the start-ups which would make the training programmes attractive and encourage more SHG members to participate in such programmes.

---

[i] Intra and inter-state collaborations for providing training were made with State Institute of Rural Development and Panchayat Raj (SIRD&PR), Rural Self-Employment Training Institute (RSETI), National Dairy Development Board, Departments of Animal Husbandry, Livestock, Fisheries and Veterinary Services, Indian council of agricultural research for promoting a diverse range of livelihood activities (Government of Sikkim, 2019).

[ii] The list of thirty entrepreneurship skills given by Lyons et al.,(2019, 2020) is: know-how about the field of endeavour, having sound understanding of legal rules, managing the financial record, procuring investment for the enterprise, ability to advertise and sell the product, competency in managing day to day business processes, and ability to use technology for business enhancement grouped under the head "business management skills." Again, strength of connecting with people in the field of business, ability to use current partnership for mutual benefit, proper utilisation of resources, establishing and sustaining reputation, proficiency in building effective connections with community, ability to be responsible for the decisions, and ability to team up with others for business purpose grouped under the head "relationship management skills." Further, ability to communicate properly, workflow management skill, swift and sound decision making, resolving clashes constructively, disciplined and productive conduct grouped under "organisational management process". Finally, troubleshooting ability, perseverance, enthusiasm and charisma, adaptable nature, ability learn and deploy knowledge, creative thinking, implementation of new ideas, leadership skills, ability to overcome setbacks, resourcefulness, and self-realisation grouped under "transformational management skill"

[iii] Likert scale is basically a measure of attitudes designed to allow respondents to rate how strongly they agree or disagree with carefully constructed statements, ranging from very positive to very negative attitudes toward some object (Zikmund et al., 2010).

CHAPTER 5

FACTORS INFLUENCING GRADUATION OF SHG MEMBERS TO MICRO-ENTREPRENEURS

5.1 Introduction

The role of Self-Help Groups (SHGs) in channelizing formal financial services to the poor and marginalized communities and thereby reducing their dependence on exploitative usury is, indeed, praiseworthy (Hoffmann et al., 2021; Nair & Tankha, 2014). The SHG movement, besides improving financial inclusion, has been instrumental in reducing the depth of poverty (Ghosh, 2012; Sinha et al., 2012), enhancing women's agency both in home and outside (Desai & Joshi, 2014; Khanna et al., 2015), improving food security (Datta, 2015; Deininger & Liu, 2013), increasing skilled employment (Khanna et al., 2015) as well as fostering rural development (Panda, 2009). Although majority of the self-help groups are located in the low and lower-middle income countries of South Asia, other parts of the developing world like sub-Saharan Africa and Latin America too report presence of SHGs in significant numbers (Brody et al., 2015; Gugerty et al., 2019). The SHG movement has gained immense popularity over the years as an effective mechanism to address poverty through women empowerment by easing out access to formal finance and is actively supported by development agencies, provincial and national governments, and local NGOs (Jakimow, 2007). Recent studies (Bharti, 2019b; Mukherjee et al., 2019), however, assert that mere provision of micro-finance to the rural poor is not adequate to bring about sustained poverty alleviation. Empirical evidences reveal that funds accrued through SHGs are mainly used for financing consumption requirements instead of any productive activity that would potentially generate future stream of income

(Paramanandam & Packirisamy, 2015). In this context several studies (Banerjee & Borhade, 2016; Banerjee & Ghosh, 2012; Field et al., 2010) recommend that apart from micro-credit, the group members should also be provided with adequate training on suitable livelihood skills to enable them channelize their borrowed funds into productive activities by venturing into diverse forms of micro-enterprises. A survey of literature in the broad domain of women entrepreneurship have shown that involvement in entrepreneurial activities enhances women's employability, financial independence, intra-household bargaining power, and confidence. It has been further confirmed that women entrepreneurship adoption goes hand in hand with their empowerment (Mahajan & Bandyopadhyay, 2021; Paramanandam & Packirisamy, 2015)—a prerequisite for achieving a higher level of economic development (Duflo, 2012; Toma et al., 2014). Ample studies have shown that empowerment of women leads to: better educational attainment of children, improved decision making on health and survival of family, and most importantly, reduction of financial burden over the household (Doepke & Tertilt, 2019; Paramanandam & Packirisamy, 2015; The World Bank, 2002). Hence, empowering women folk by way of making them venture into viable micro-enterprises is expected to have the much-desired spill-over effects on the respective households and communities.

In India several livelihood generating training programs have been launched for SHG members; the outcome of such programmes have, however, been mixed. While one set of studies (Banerjee & Borhade, 2016; Banerjee & Ghosh, 2012; Sinha, 2004; Swain & Varghese, 2014) have unveiled positive impact of training on women entrepreneurship; another set of studies (Field et al., 2010; Karlan & Valdivia, 2011) have revealed that the impact of training on the same has remained modest as only a small fraction of the women SHG trainees ventured into micro-entrepreneurial activity

or up-scaled their ongoing activity. Such findings adequately illustrate that apart from provision of finance and training there are, indeed, several socio-economic and household level factors that possibly have an influence over micro-entrepreneurial activities by SHG women. Given the fact that more than 50 percent of households in rural India are engaged in self-employment activities (GOI, 2021) an identification of factors that promote rural enterprise is critical to development policy. Despite its clear significance in improving a lot of the women from poor and marginal communities, empirical studies focusing on factors influencing micro-entrepreneurship among the SHG women are scarce. Our study attempts to fill this gap in the academic literature by taking up the issue and finding the socio-economic factors influencing micro-entrepreneurship adoption and impact of livelihood training on number of micro-enterprises owned, in the context of the women SHG members of the northeastern state of Sikkim in India.

5.2 Factors Influencing Micro-Entrepreneurship Among Women SHG Members

Micro-entrepreneurial activities by the SHG members are expected to depend upon several household and individual level variables. A comprehensive list of such determinants, their description, as well as the expected relationship of each variable with the incidence of microenterprise adoption and having multiple micro-enterprises is briefly outlined in Table 5.1.

Table 5.1: List of Explanatory Variables and their Expected Relationship with the Probability of Adoption and Number of Microenterprises by the SHG Member

Variable	Description	Expected Relationship
Training Status (X_1)	It is a binary variable denoting the training status of SHG members. Training Status =1, if the SHG member has attended any	(+)

Table 5.1: List of Explanatory Variables and their Expected Relationship with the Probability of Adoption and Number of Microenterprises by the SHG Member

Variable	Description	Expected Relationship
	one of the training programmes provided by the SHPI(s), otherwise = 0.	
Landholding (X_2)	Total cultivable land owned (in acres) by the respondent's household	(+)
Loan (in 000'Rs.) (X_3)	Total amount of loan borrowed from SHG (in 000' Rs.)	(+)
Respondent's Age group (X_4)	It is a categorical variable denoting the age group of the respondent (in years) with five levels viz: less than 30, 31–40, 41–50, 51–60, and above 60.	(+)
Respondent's Education (X_5)	The variable captures the level of education attained by the respondent. It is a categorical variable denoting six levels of educational attainment: Illiterate, Primary, Middle, High school, Senior Secondary, and graduate & above.	(-)
Caste (X_6)	It is a categorical variable with three levels signifying caste of the respondent viz.: General/Other Backward Castes (OBCs), Scheduled Castes (SC) and Scheduled Tribes (ST).	(+)
Ethnic Group (X_7)	It is a categorical variable denoting the ethnic group to which the respondent belongs. It has five levels to denote the categories of Bhutia, Lepcha, Limboo, Nepali, and Sherpa.	(+)
No. of dependents (X_8)	It is a discrete variable representing the number of dependent members in a respondent's household. Besides accounting for the usual dependent members with age in the range of 0 to 14 years and those above 65, it also includes those household members who are unemployed, either temporarily or permanently.	(-)
No. of earning members (X_9)	It is a categorical variable denoting the number of earning members of the	(+)

Table 5.1: List of Explanatory Variables and their Expected Relationship with the Probability of Adoption and Number of Microenterprises by the SHG Member

Variable	Description	Expected Relationship
	respondent's household. It has three levels corresponding to the categories: 1 to 2, 3 to 4, and greater than 4.	
Years of SHG enrolment (X_{10})	It is a discrete variable denoting the number of years the individual has spent as a member of the SHG.	(+)
District Dummies (X_{11})	To account for spatial differences in adoption of microenterprises we have used dummies to represent each of the four districts: East Sikkim, West Sikkim, North Sikkim, and South Sikkim.	(+)

5.3 Model Specification

5.3.1 Model 1: Logistic Regression

In order to capture the factors influencing adoption of microenterprise by the SHG members, the study uses a multivariate logistic regression. Here the dependent variable is binary (adoption of microenterprise = 1; otherwise = 0) while the independent variables are a mix of continuous as well as categorical variables.

The multivariate logistic regression model is as follows-

$$P_i = Prob(Y_i = 1) = \frac{1}{1 + e^{-z_i}} \quad (1)$$

Where, P_i = Probability of an SHG member adopting a microenterprise ($Y_i=1$);

e = exponential constant

$$Z_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \cdots \ldots\ldots\ldots\ldots\ldots + \beta_{10} X_{10i} + \mu_i$$

Where, β_0 = intercept term, $\beta_1, \beta_{2\ldots}\ldots \beta_{10}$ = coefficients linked to the explanatory variables $X_1, X_{2\ldots}\ldots\ldots X_{10}$ respectively, μ_i= stochastic error term.

The probability that the SHG member does not take up a microenterprise ($Y_i=0$) can be written as,

$$Prob(Y_i = 0) = 1 - Prob(Y_i = 1) = \frac{1}{1 + e^{z_i}} \quad (2)$$

The ratio of (1) and (2) gives us the odds of the SHG member opting for a microenterprise.

$$\frac{Prob(Y_i = 1)}{Prob(Y_i = 0)} = \frac{P_i}{1 - P_i} = e^{Z_i} \quad (3)$$

Natural log of equation (3) gives the logit (L_i) which is a linear function of Z_i

$$L_i = \log\left(\frac{P_i}{1 - P_i}\right) = Z_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \cdots \ldots \ldots \ldots + \beta_{10} X_{10i} + \mu_i \quad (4)$$

The coefficients of equation (4) are estimated using maximum likelihood method (MLE) and their significance is tested with the Wald test.

5.3.2 Model 2: Count/Poisson Regression

While carrying out our field survey a significant proportion of SHG women reported to operate multiple enterprises. In fact, the number of micro-enterprises operated by them varied from zero to six. Therefore, in order to adequately capture the influence of the variables listed in Table 5.1 over the number of microenterprises operated by our respondents, we use count regression. Count or Poisson regression is the econometric model of choice when the response variable takes a discrete non-negative integer value as in our case. We can thus model the number of micro-enterprises (y_i) operated by women SHG members subject to the individual and household level attributes (x_i) using

the basic Poisson model (Cameron & Trivedi, 2010; Greene, 2012) as:

$$Prob(Y_i = y_i|x_i) = \frac{e^{-\gamma_i}\ \gamma_i^{y_i}}{y_i!}\ ,\ \ \gamma_i \in \mathbb{R}^+, y_i$$

$$= 0,1,2, \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots (1)$$

In equation 1, $\gamma_i = E(y_i|x_i) = Var(y_i|x_i)$ and the mean can be defined as $\gamma_i = exp(x'_i\ \beta)$ where $\boldsymbol{x_i}$ is a set of household and individual specific variables for the *i*-th individual; while β is a set of parameters to be estimated. The partial effects of our model is given by:

$$\frac{\partial E(y_i|x_i)}{\partial x_i} = \gamma_i\ \beta$$

5.4 Descriptive Statistics

Table 5.2 shows the descriptive statistics of the information collected from the sample SHG members. Column 1 shows the variable names while columns 2, 3 and 4 show the summary statistics for the complete sample, for members without micro-enterprises, and for members with microenterprises respectively. It was found that out of 416 sample respondents, about 54.33 percent had attended at least one of the livelihood training programmes offered by the SHPIs while the remaining 45.67 percent reported not attending any of such programmes. A closer perusal of the data reveals that, out of the members found to be operating microenterprises, a majority, to the extent of 62 percent, had pursued the livelihood training program. On the contrary, a major chunk of the respondents having no microenterprises, about 63.71 percent, were untrained. This trend is suggestive of a positive correlation between training and enterprise adoption.

An examination of the age distribution reveals that, among the members who operated microenterprises, about 71 percent were aged in the interval of 31 to 50.

Table 5.2: Descriptive Statistics

Variables	All	SHG members with		χ^2	p-value
		ME=0	ME=1		
(1)	(2)	(3)	(4)	(5)	(6)
Training Status					
Untrained	190 (45.67)	79 (63.71)	111 (38.01)	23.161	.000
Trained	226 (54.33)	45 (36.29)	181 (61.99)		
Respondent's Age group					
<30	74 (17.79)	37 (29.84)	37 (12.67)	27.606	.000
31-40	158 (37.98)	41 (33.06)	117 (40.07)		
41-50	109 (26.20)	20 (16.13)	89 (30.48)		
51-60	54 (12.98)	15 (12.10)	39 (13.36)		
>60	21 (5.05)	11 (8.87)	10 (3.42)		
Respondent's Education					
Illiterate	54 (12.98)	19 (15.32)	35 (11.99)	5.157	.397
Primary (I-V)	104 (25.00)	35 (28.23)	69 (23.63)		
Middle (VI-VII)	36 (8.65)	6 (4.84)	30 (10.27)		
High school (VIII-X)	159 (38.22)	47 (37.90)	112 (38.36)		
Senior secondary (XI-XII)	48 (11.54)	14 (11.29)	34 (11.64)		
College and above	15 (3.61)	3 (2.42)	12 (4.11)		
Caste					
General/OBC	295 (70.91)	82 (66.13)	213 (72.95)	3.449	.178
SC	12 (2.88)	6 (4.84)	6 (2.05)		
ST	109 (26.20)	36 (29.03)	73 (25.00)		
Ethnic Group					
Bhutia	33 (7.93)	10 (8.06)	23 (7.88)	11.767	.019
Lepcha	18 (4.33)	1 (0.81)	17 (5.82)		
Limboo	13 (3.13)	6 (4.84)	7 (2.40)		
Nepali	338 (81.25)	99 (79.84)	239 (81.85)		
Sherpa	14 (3.37)	8 (6.45)	6 (2.05)		
Number of earning members					
1-2	285 (68.51)	95 (76.61)	190 (65.07)	6.392	.041

3-4	116 (27.88)		24 (19.35)		92 (31.51)			
>5	15 (3.61)		5 (4.03)		10 (3.42)			
Continuous Variables								
	Total		**No ME**		**ME**		**t-stat**	**p-value**
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**		
Landholding (in acres)	0.60	0.82	0.375	0.67	0.70	0.85	-3.76	.000
Loan	35515.2	36335.4	25987.90	30371.98	39561.14	37918.9	-3.53	.00
No. of dependents	2.49	1.20	2.60	1.24	2.44	1.18	1.21	.23
Years of SHG enrolment	5.39	3.02	5.40	2.96	5.39	3.02	.071	.609

Note: Figures in parentheses denote the percentage of column total

Source: Survey data

On the other hand, across those without a microenterprise, a major proportion of the members, constituting about 63 percent, fell in the age category of 'less than 30' and '31 to 40'. As far as educational attainment is concerned, almost half of the respondents were found to have studied up to 'high school' or 'senior secondary school'. A breakup of the caste group of the respondents revealed that about 71 percent of the sample members belonged to the 'General/OBC category', followed by the 'Scheduled Tribes (ST)' which constituted another 26 percent, while the remaining 3 percent of the members belonged to the 'Scheduled Caste (SC)' category. The distribution of the sample respondents across ethnic groups exhibits that, most of the members (81.25 percent) belonged to the *Nepali* community while the percentages of other groups namely *Bhutia, Lepcha, Limboo,* and *Sherpa* were respectively 7.93, 4.33, 3.13, and 3.37 percent. Close to 68 percent of the sample respondents reported having 1 to 2 earning members in the household, while the remaining 28 percent and 3.61 percent reported having 3 to 4 and 5 earning members respectively. On an average, the sample respondents were found to have 0.60 acres of cultivable land. Women members with microenterprises were found to possess significantly more cultivable land compared to

those without microenterprises. A similar trend was observed in the case of funds loaned out of the SHG. Members with microenterprises were found to have, on an average, borrowed a larger amount compared to those who did not operate any such enterprise. Finally, no statistically significant difference was observed in the case of number of dependents and years of enrolment with SHGs across the two categories of members.

5.5 Results from Regression Analysis

In order to identify the key determinants of microenterprise adoption among the self-help group members we have conducted a multivariate logistic regression (model 1) taking the adoption of microenterprise as the dependent variable where 1 denotes adoption while 0 denotes its absence. The econometric estimate of the model is presented in Table 5.3, where along with the estimated logit coefficients we have reported the corresponding Average Marginal Effect (AME) of each of the explanatory variables. Additionally, in order to understand whether the livelihood training programmes have any influence over micro-entrepreneurship we have conducted a count (poisson) regression using the number of micro-enterprises as dependent variable (model 2) while the set of independent variables include attendance of livelihood training programme as a dummy variable as well as the same set of variables used in model 1 as controls. We do not include the variable *training* in model 1 as few of the SHG members reported to operate micro-enterprises even before the livelihood training programmes were officially rolled out. In model 2, however, the variable 'training' is taken into account as it is likely to have a strong influence over the number of microenterprises operated by the members.

As shown in both the models, the coefficients linked to the variables *'acreage of land ownership'* and '*loan'* emerge to be positively statistically significant suggesting that

increase in land ownership and borrowed funds improves the probability of a member to take up a microenterprise and also have a higher number of microenterprises. This observation is quite plausible as under rural settings landholding is an indicator of wealth and as such higher levels of land ownership reflects a higher capacity to invest into enterprises as well as a higher resilience against financial risks. On the other hand, the positive role of borrowed funds in promoting micro-enterprises is quite obvious as in most of the cases the funds borrowed out of SHGs serves as the start-up capital. Results show that SHG members belonging to age categories 31–40; 41–50 and 51–60 are significantly more likely to venture into a microenterprise, compared to the base category—'*above 60*'. Although statistically insignificant, the sign of coefficients linked to age in model 2 agrees with their corresponding coefficients in model 1 showing respondents below age 60 to be more likely to have multiple micro-enterprises. This might be because women above age 60 are usually risk averse and susceptible to health issues which limits their entrepreneurial activities.

Results show that respondents having education up to senior-secondary level are more likely to opt for a micro-enterprise and have a higher number of micro-enterprises compared to the base category—'*Graduation and above.'* This is because respondents with higher education may opt for formal employment with stable income. The coefficients related to educational attainment are, however, insignificant in both the models.

In model 1, the coefficients for the variables '*caste*' and '*ethnic group*' are insignificant. This shows that there is no barrier in taking up a microenterprise based on caste and ethnicity in the study area. Again, in model 2, caste categories still remain insignificant showing no caste-based disparity in having multiple microenterprises.

Table 5.3: Regression Estimates on Factors Affecting Micro-Entrepreneurship among Self-Help Group Members

	Model 1			**Model 2**	
	Logit Regression			**Count Regression**	
	DV: ME=1, if the respondent owns a micro-enterprise; Otherwise=0			**DV: No. of micro-enterprises**	
Variables	**Coefficients**	**S.E.**	**Margins**	**Coefficient**	**S.E.**
Intercept	0.79	0.95		0.0736	0.3655
Training (Yes=1)				0.4536***	0.1061
Landholdings (in acres)	0.58**	0.22	0.08**	0.1081*	0.0568
Loan (in '000 Rs.)	0.02***	0.00	0.00***	0.0040***	0.0014
Respondent's Age group					
Above 60	(base)			(base)	
Less than 30	1.25	0.73	0.20	0.17	0.29
31-40	2.22**	0.69	0.36***	0.19	0.26
41-50	2.70***	0.71	0.42***	0.35	0.26
51-60	1.94**	0.71	0.32***	0.37	0.27
Respondent's Education					
Graduation and above	(base)			(base)	
Illiterate	0.45	1.07	0.07	0.34	0.30
Primary (I-V)	0.16	1.02	0.02	0.19	0.26
Middle (VI-VII)	0.72	1.12	0.10	0.09	0.27
High School (VIII-X)	0.15	0.99	0.02	0.17	0.25
Senior-Secondary (XI-XII)	0.25	1.05	0.04	0.20	0.28
Caste					
Gen/OBC (ref)	(base)			(base)	
SC	-0.84	0.71	-0.13	-0.3887	0.3901
ST	-0.06	0.46	-0.01	-0.0011	0.2126
Ethnic Group					
Bhutia	(base)			(base)	
Lepcha	1.12	1.24	0.13	-0.0751	0.2501
Limboo	-1.22	0.99	-0.19	-0.7338**	0.3505
Nepali	-0.25	0.64	-0.04	-0.4030	0.2590
Sherpa	-0.75	0.83	-0.11	-0.9055**	0.4012
No of dependent members	-0.34**	0.12	-0.05**	-0.0298	0.0406
No. of earning members					
1-2	(base)			(base)	
3-4	0.86*	0.36	0.12**	0.2396**	0.1137
>4	-0.83	0.74	-0.13	-0.2581	0.2793
Years of SHG-enrolment	0.10	0.06	0.01	0.0500**	0.0193
District					
East Sikkim	(base)			(base)	
West Sikkim	1.19*	0.59	0.10*	0.1395	0.1344
North Sikkim	-1.35**	0.43	-0.21**	-0.6956***	0.1795
South Sikkim	-1.93***	0.47	-0.32***	-0.6778***	0.1754
Diagnostics					
No of obs.	416			416	
AIC:419.18 BIC:519.95				Null Deviance:447.09; Residual Deviance:314.04; AIC:1045.5	
Pseudo R-squared:0.40				Test for Over-dispersion: z-value = -7.0692; p-value=1	

****p<0.001; **p<0.01; *p<0.05*

Source: Authors estimate using R version 4.1.2

However, as far as ethnicity is concerned the coefficients for the categories *Limboo* and *Sherpa* are found to be negatively significant indicating that members from these two communities are less likely to have a higher number of microenterprises compared to the base category—the *Bhutias*. This might be because *Bhutias* are the early settlers in Sikkim and therefore are well endowed in terms of economic resources, vis-à-vis the *Limboos* and *Sherpas,* which allows them to take up multiple micro-enterprises.

Model 1 clearly shows that an increase in the number of dependent members in respondents' households significantly reduces her probability of starting a microenterprise. Although the corresponding coefficient in model 2 is statistically insignificant, its negative sign is in support of the inference made in model 1. The observed negative relation is plausible since attending to dependent members like children and old or infirm individuals in a household takes away substantial time on the part of women reducing their chances of taking up entrepreneurial activities.

It is evident from both the models that respondents with 3 to 4 earning members in their household are statistically significantly more likely to start a micro-enterprise and have a higher number of micro-enterprises as compared to their peers with 1 to 2 earning members. This might be because having 3 to 4 earning members in a household enhances economic security of the respondent as they can depend on their family in case of a potential economic turmoil which promotes their risk-taking behaviour.

Quite plausibly the number of years of enrolment of a member in the concerned SHG is found to have a positive influence over the probability of her opting for a microenterprise as observed in model 1. The same holds true in model 2 as well. The statistically significant coefficient of the variable clearly highlights that more years spent with an SHG corresponds to a higher number of microenterprises.

Finally, our study notes a striking spatial disparity in adoption of microenterprise. The

propensity to adopt a microenterprise was observed to be higher among the SHG members of West Sikkim vis-à-vis those of the East Sikkim. On the other hand, the propensity to adopt a microenterprise is significantly lower among the members of both North and South Sikkim. The estimated coefficients in model 2 are found to be in conformity with the outcome of model 1. This might be because in West Sikkim, the SHPI was found to provide handholding support to the SHGs in establishing marketing linkages. In North and South districts, however, such linkages were limited.

Finally, the estimated coefficient of the training variable in model 2 is found to be positive and highly statistically significant confirming that provision of livelihood training to the SHG members indeed has a positive influence over the number of microenterprises. This is in conformity with our expectations since the main objective behind providing such skill-based training is to promote the spirit of entrepreneurship among the self-help group members.

Table 5.4: Estimates Based on Propensity Score Matching Methods

Outcome variable: Number of microenterprises

Explanatory variable: Participation in livelihood training programmes

Matching Algorithm	ATT	S.E.	Covariate Adjusted Estimates	S.E.	Observations
1:1 N. N	0.417 ***	0.118	0.338**	0.120	260
Full Matching	0.548***	0.098	0.344**	0.108	416

****p<0.001; **p<0.01; *p<0.05*

Source: Authors estimate based on primary data using R version 4.1.2

This result may, however, encounter the problem of endogeneity as the participants self-select themselves into such training programmes. We use Propensity Score Matching technique as a solution to this problem. Two matching algorithms have been applied namely 'One to One Nearest Neighbour Matching (N.N) with Caliper = 0.2' and 'Full Matching.' Additionally, its robustness is checked by Covariate Adjustment Estimator. The results as presented in Table 5.4 obtained from both matching methods

and covariate adjusted estimates confirm to that obtained from Poisson regression that: participation into livelihood training programme does indeed promote having higher number of microenterprises.

5.6 Conclusion and Policy Implications

Under a backdrop of constrained access to formal credit for the rural poor (Dev, 2006), the role of humble institutions like the SHG in meeting their credit needs and thereby reducing their dependence on informal moneylenders is highly commendable. In fact, as per the latest report by NABARD (2021) India's SHG-BLP has been able to connect with 138 million households through more than 11.2 million SHGs. Over the last decade there has been a thrust on providing livelihood training programmes and handholding support to the SHG members so as to enable them venture into a wide spectrum of self-employment activities through micro-enterprises. Our study serves twin objectives. First it tries to identify the household and individual level factors that influence an SHG member's decision to venture into microenterprises. Second it tries to verify whether taking up the livelihood training programmes has any positive influence on the member's micro-entrepreneurial activity. Using primary data from a sample of 416 SHG members drawn from the four districts of Sikkim we test our hypotheses employing both logit and count regressions. The statistical summary obtained out of logit regression confirms that size of cultivable landholdings, volume of funds borrowed out of SHG, and number of years of enrolment in an SHG has a positive influence on the probability of the member venturing into microenterprises. It is observed that, compared to above 60 age group, women in the age brackets of 31 to 60 are more likely to start a micro-enterprise. The same trend is noted in case of women with 3 to 4 earning members who are more likely to start a microenterprise compared to the other categories. The propensity of women member taking up micro-enterprise

apparently seems to be unaffected by caste and ethnic groups but is negatively impacted with increase in the number of dependent members. The estimated coefficients of the count regression in model 2 are mostly in conformity with the same in model 1 except in case of ethnic groups showing that the members from the *Limboo* and *Sherpa* community are likely to have a lower number of microenterprises compared to the same from *Bhutia* community. The high statistical significance of the coefficient of the training variable clearly outlines the importance of livelihood training programme in acting as an enabler in setting up higher number of microenterprises. This argument is confirmed more robustly by employing Propensity Score Matching and covariate adjusted estimates. The policy implications following from our study is fairly straight forward. First and foremost, the government agencies as well as the concerned NGOs should enhance their initiative to mobilize more and more members from poor and vulnerable communities into SHGs. This will ease their access to affordable credit and encourage them take up self-employment activities. Secondly, since it was observed that funds borrowed from SHG acted as an enabler in starting a microenterprise; efforts should be taken by government agencies to reduce the rate of interest on the loans advanced for entrepreneurial activities. This would reduce the cost of the start-up capital on the part of the borrowers and thereby motivate them in diversifying their vocations. Thirdly and most importantly since the livelihood training programmes are found to be strongly enabling women members in diversifying into multiple number of microenterprises; the SHPIs should upscale their training programmes and conduct it more often.

CHAPTER 6

A COMPARATIVE STUDY ON THE TYPES AND PERFORMANCE OF MICRO-ENTERPRISES ADMINISTERED BY THE TRAINED AND UNTRAINED SHG MEMBERS OF SIKKIM

6.1 Introduction

Over the years, Self Help Groups (SHGs) have successfully emerged as alternative social institutions for channelizing formal credit to the poor and marginalized communities who remained chronically unbanked in spite of several policy strides undertaken by the government. Self Help Groups (SHGs) are small collectives of 10 to 20 members belonging to homogeneous socio-economic backgrounds who contribute a minimum mutually agreed fixed amount on a weekly or fortnightly basis to eventually build upon a corpus out of which small amounts of credit is advanced to its member(s) for consumption or income generating activities. The loaning decisions and the corresponding rate of interest are fixed through participatory decision making (Ghosh, 2012; Jain & Tripathy, 2011). After three to four months of an SHG's conception, subject to its satisfactory pursuit of the set of prescribed norms[iv], it is provided a revolving fund by the governing institutions so as to meet the direct credit requirements of its members and also as a means to enhance its group corpus which would, in turn, leverage its borrowing limit from formal banks at a later stage. A fairly successful performance of an SHG for about 9 to 12 months of its formation qualifies it for credit linkage with a nearby bank enabling it to avail formal loans from the latter. This further enhances its group corpus and lending capacity to its members. The core institutional design underpinning the operation of SHGs brings about a 'win-win' scenario both for the poor borrowers and the formal lending institutions. While the poor are able to access

collateral free-formal loans at competitive rates of interest; banks, on the other hand, are able to lend at a much lower transaction cost and ensure higher repayment rates due to joint liability of borrowed funds. The replacement of collateral security by social capital is indeed the most innovative aspect behind the success of SHGs (Chen et al., 2007). Among the most notable contributions of the SHG movement is the fact that it has been able to emancipate the poor and the vulnerable sections from the perils of exploitative usury to a significant extent (Hoffmann et al., 2021). Furthermore, empirical studies have shown that the SHG movement has been able to reduce the depth of poverty (Ghosh, 2012; Sinha et al., 2012); promote women empowerment (Desai & Joshi, 2014; Khanna et al., 2015); enhance food security (Datta, 2015; Deininger & Liu, 2013); increase skilled employment (Khanna et al., 2015) as well as aid in rural development (Panda, 2009). That the SHG initiative seeks to address rural poverty through women empowerment is one it's most novel ideas and has helped it gain immense popularity and active support across national and provincial governments, development agencies and local NGOs (Jakimow, 2007).

Nevertheless, recent studies have highlighted that borrowings accrued via SHGs are mainly used for consumption activities instead of any productive venture that would potentially generate future stream of returns (Paramanandam & Packirisamy, 2015). Subsequently, a number of studies (Banerjee & Borhade, 2016; Siddhartha et al., 2019) have advocated that, apart from microcredit, the SHG members should also be provided with adequate training on suitable livelihood skills through a number of capacity building programmes so as to enable them productively invest their borrowings into a number of microenterprises. The idea of imparting livelihood training to the SHG members is, however, not new and had been a critical component of the *Swarna Jayanti Gram Swarozgar Yojna* (SGSY) launched under a joint patronage of the state and

national governments in the year 1999. After a few years, a number of operational inefficiencies in the functioning of SGSY led to its restructuring into a more holistic and broad-based programme—the National Rural Livelihoods Mission (NRLM) in the year 2011. Stabilizing and augmenting the livelihood options of the rural poor through provision of resources and skills suited to revitalizing their existing vocations as well as enabling them tap newer more remunerative opportunities is the key focus of the NRLM. In this context the provision of capacity building programmes to women SHG members aimed at enabling them become self-employed through venturing into suitable microenterprise is an area of special interest and perhaps a much-desired pathway for the poor to graduate out of poverty. Few credible studies which have tried to explore the impact of livelihood training programmes on the entrepreneurial performance of the SHG members have reported a mixed outcome—with some (Banerjee & Borhade, 2016; Banerjee & Ghosh, 2012; Siddhartha et al., 2019; Sinha, 2004; Swain & Varghese, 2014) claiming a positive impact while others (Field et al., 2010; Karlan & Valdivia, 2011; Solomon, 2004) asserting that the impact was moderate.

With self-employment activities engaging more than 50 percent of the rural households in India (GOI, 2021); the mission for promoting women led microenterprises through provision of both credit and skill training is indeed noteworthy. In spite of its significant potential in enhancing the livelihoods of the poor and vulnerable section residing at the bottom of the social pyramid, the number of empirical studies exploring the status, pattern and performance of microenterprises adopted by the women SHG members is limited. Also, the lack of consensus with respect to the efficacy of the livelihood training programme also merits due investigation using field level empirical data. Our study aims to fill this gap in the existing body of knowledge by offering a comprehensive understanding of the status and varieties of microenterprises operated

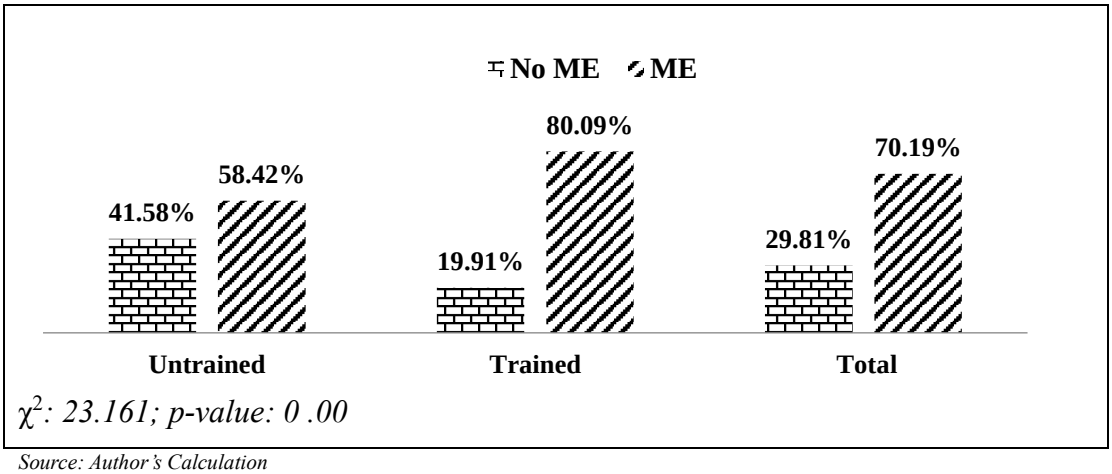
by the women SHG members as well as the efficacy of livelihood training programme in enhancing the performance of microenterprises operated by the women SHG micro-entrepreneurs in the northeastern state of Sikkim. Moreover, our study also gives adequate scope to identify the difficulties and rigidities inhibiting SHG women to venture into microenterprises.

6.2 Nature and Pattern of Microenterprises

6.2.1 Status of Micro-Enterprise Possession by SHG Members of Sikkim

Figure 6.1 shows the status of adoption of microenterprises by the sample SHG members of Sikkim. Out of the entire sample of 416 SHG members, about 70.19 percent reported of operating one or more microenterprises while the remaining 29.81 percent reported of not operating any microenterprise.

Figure 6.1: Status of Micro-Enterprise Possession by SHG Members of Sikkim



Source: Author's Calculation

However, when the entire sample is divided across trained and untrained members, it is clearly found that a higher proportion of trained members (80.09 percent) own and operate microenterprises compared to the untrained members (58.42 percent). One possible explanation for this apparent distinction between the trained and the untrained members might be because the training programmes provide skill intensive guidance to the programme attendees as well as help them establish market linkages for their

ventures which enhance the viability of the opted microenterprises. In some cases, the trainees are also provided with raw materials for operating microenterprise as an incentive. For example, during our field visit in one of the sample villages we found that all the SHG groups attending a livelihood training programme on turmeric cultivation were provided 50 kilograms of turmeric seeds to encourage them take up turmeric cultivation.

6.2.2 Distribution of Microenterprises Across Trained and Untrained SHG Members

Most often the members are observed to own and operate multiple microenterprises at once. Table 6.1 provides an insight on the distribution of microenterprises possessed by the overall sample as well as across the trained and untrained microentrepreneurs.

Table 6.1: Distribution of Microenterprises Across Trained and Untrained SHG Members

No. of ME	Untrained		Trained		Total	
	No. of respondents	No. of ME	No. of respondents	No. of ME	No. of respondents	No. of ME
1	74 (66.67)	74 (48.05)	93 (51.38)	93 (29.34)	167 (57.19)	167 (35.46)
2	31 (27.93)	62 (40.26)	53 (29.28)	106 (33.44)	84 (28.77)	168 (35.67)
3	6 (5.41)	18 (11.69)	26 (14.36)	78 (24.61)	32 (10.96)	96 (20.38)
4	0 (0.00)	0 (0.00)	6 (3.31)	24 (7.57)	6 (2.05)	24 (5.1)
5	0 (0.00)	0 (0.00)	2 (1.10)	10 (3.15)	2 (0.68)	10 (2.12)
6	0 (0.00)	0 (0.00)	1 (0.55)	6 (1.89)	1 (0.34)	6 (1.27)
Grand Total	111	154	181	317	292	471

Note: Values in parenthesis represent percentage of column total
Source: Primary Survey

We find that a total of 292 SHG members administered 471 microenterprises in aggregate, 67.30 percent and 32.69 percent of the units are owned by the trained and the untrained members respectively. On an average, the trained members are found to operate a higher number of units (1.75) compared to the untrained ones (1.38). In fact,

the data clearly shows that while most of the untrained and trained respondents own one to three microenterprises; about five percent of the trained members are found to operate more than three microenterprises.

6.2.3 Distribution of Microenterprises Operated by SHG Members Across Sectors of Economic Activity

Table 6.2 shows the distribution of microenterprises operated by SHG members across the broad sectors of their economic activity.

Table 6.2: Distribution of Microenterprises Operated by SHG Members Across Sectors of Economic Activity

Sector	Untrained	Trained	Total	χ^2	p-value
Primary	124 (80.52)	224 (70.66)	348 (73.89)	52.702	0.00
Secondary	5 (3.25)	47 (14.83)	52 (11.04)		
Tertiary	25 (16.23)	46 (14.51)	71 (15.07)		
All	154 (100.00)	317 (100.00)	471 (100.00)		

Note: Values in parenthesis represent percentage of column total
Source: Author's Calculation

It is observed that a majority of the microenterprises—close to three quarters of the entire sample—operated by the SHG members fall within the domain of the primary sector whereas about 11.04 percent and 15.07 percent of the operated units can be categorised into the secondary and the tertiary sectors respectively. This outcome might be because our sample of SHG members were mainly drawn from rural areas where agriculture, animal husbandry, and other allied activities continue to be the mainstay of the rural economy. Although in this regard, we observe a similar pattern across the trained and the untrained members; the trained members are found to operate a greater number of units pertaining to the secondary activities vis-à-vis the untrained peers.

6.2.4 Source of Knowledge for Starting up a Microenterprise

Source of idea and knowledge plays a key role in the establishment of the unit. Table

6.3 lists the relevant sources reported by the sample SHG members.

Table 6.3: Source of Knowledge for Starting up a Microenterprise

Source	Untrained	Trained	Total
SHG training	-	66 (20.82)	66 (14.01)
SHG training & Self	-	31 (9.78)	31 (6.58)
SHG training & Friends	-	7 (2.21)	7 (1.49)
SHG training & Family	-	19 (5.99)	19 (4.03)
Self	75 (48.70)	106 (33.44)	181 (38.43)
Self & Friends	12 (7.79)	13 (4.10)	25 (5.31)
Self & Family	5 (3.25)	15 (4.73)	20 (4.25)
Friends	17 (11.04)	21 (6.62)	38 (8.07)
Friends & Family	6 (3.90)	4 (1.26)	10 (2.12)
Family	39 (25.32)	35 (11.04)	74 (15.71)
Grand Total	**154**	**317**	**471**

Note: Values in parenthesis represent percentage of column total

Source: Primary Survey

Among the trained members, about 21 percent of the respondents acknowledge the training received from the SHPIs as the main source of knowledge for setting up a microenterprise. On the other hand nearly 18 percent of the trained respondents reported of having acquired the necessary idea and knowledge from ‘themselves’, ‘friends’ and ‘family’ along with training. Among the untrained members, however, 48.70 percent reported of having taken up microenterprise on the basis of their own ideas and knowledge while about 25.32 percent and 11.04 percent reported to have received inspiration from family and friends respectively.

6.2.5 Types of Micro-enterprise(s) Operated by SHG Members

As provision of microcredit alone was deemed insufficient to pull the poor and marginalized communities out of poverty (Mukherjee et al., 2019), a number of studies advocated the provision of livelihood skills so as to make the SHG members venture

into locally feasible income generating activities which would guarantee future stream of earnings. Subsequently, a number of 'capacity building programmes' were conceived by the Self-Help Group Promoting Institutions (SHPIs) and were provided to the members of SHGs in the form of livelihood training programmes. The idea was to orient the active SHG members into livelihoods and vocations which are economically feasible in their localities and ultimately enable them venture into and successfully operate microenterprises either individually or in groups. The start-up fund for such enterprises was to be provided in the form of microcredit via SHGs. Table 6.4 shows the types of micro-enterprises opted by SHG members of Sikkim.

Table 6.4: Types of Micro-enterprise(s) Operated by SHG Members

Type of Micro-enterprise	Untrained	Trained	Total	χ^2	p-value
Animal husbandry	86 (55.84)	134 (42.27)	220 (46.71)	8.631	0.035
Agribusiness	41 (26.62)	121 (38.17)	162 (34.39)		
Network marketing	2 (1.30)	7 (2.21)	9 (1.91)		
Petty business	25 (16.23)	55 (17.35)	80 (16.99)		
Grand Total	**154**	**317**	**471**		

Note: Values in parenthesis represent percentage of column total
Source: Author's Calculation

The table shows that more than four-fifths of the members have ventured into animal husbandry and agribusiness; petty business is opted by about 17 percent of the members while a handful of members, less than two percent, have ventured into network marketing. The pattern of microenterprise distribution is almost similar across the trained and untrained members. Clearly the group members have invariably opted for traditional enterprises which are historically dominant in the countryside. Animal husbandry includes dairy, goatary, piggery and poultry. Agribusiness consists of cultivation, processing, sale of commercial crops like: cardamom, vegetables, ginger, mushroom, turmeric, and broom binding. Petty business incudes small units like beauty parlour, candy shop, canteen, butcher shop, cloth and utensil shop, apparel store,

dressing tourists with traditional clothes, grocery shop, knitting, pickle making, tailoring and tea stall. Finally, network marketing considers marketing of various consumer goods from Oriflame, Tupperware and Vestige.

6.2.6 Reasons for not Having any Microenterprise by the SHG Members

Near about 30 percent of the sample SHG members did not operate any microenterprise. Quite understandably, out of the 124 members not operating any such unit, the proportion of untrained members was higher compared to the trained ones. The reasons advanced by these group of respondents for their inability to venture out has been outlined in Table 6.5.

Table 6.5: Reasons for not Having any Microenterprise by the SHG Members

Reasons	**Untrained**	**Trained**	**Total**	χ^2	**p-value**
Unable to mobilize time due to household chores	12 (15.19)	15 (33.33)	27 (21.77)	16.17	0.024
Business Failure	19 (24.05)	6 (13.33)	25 (20.16)		
Employed as Wage labourer	14 (17.72)	7 (15.56)	21 (16.94)		
Taking care of new-born	11 (13.92)	8 (17.78)	19 (15.32)		
Employed in private sector	9 (11.39)	4 (8.89)	13 (10.48)		
Employed in government service	5 (6.33)	-	5 (4.03)		
Old age	9 (11.39)	2 (4.44)	11 (8.87)		
Lack of space for commercial activity	-	3 (6.67)	3 (2.42)		
Grand Total	**79**	**45**	**124**		

Note: Values in parenthesis represent percentage of column total

Source: Author's Calculation

About 37.09 percent of the members reported that they were unable to mobilize adequate time for undertaking any self-employment activity as they had to manage household chores or take care of new-born children. Another 31.45 percent stated that they were already employed in the public or private sector or on a daily wage basis, while about one-fifth of them reported lack of confidence in opening up an enterprise due to failure of their previous business. Close to nine percent of the respondents

reported ‘old age’ as the main deterrent for taking up a business venture while about two percent of these members asserted that they did not have any room or space for commercial activity.

Across the two categories of members, it was observed that amongst the untrained ones the most dominant reason for opting out was business failure in the past (24.05 percent) while among the trained members it was hectic household chores (33.33 percent).

6.3 A Comparative Study on the Performance of Micro-Enterprises by the Trained and Untrained SHG Microentrepreneurs of Sikkim

So far in the previous chapters, we have systematically discussed various aspects related to microenterprise development showcasing the contribution of livelihood training programmes. We started with discussing the role of institutions in promoting micro-entrepreneurship among the women SHG members in the study area. Subsequently, we investigated the socio-economic profiles of the entire sample respondents as well as provided a clear insight into the observed differences between the two group of the sample SHG members—those who chose to participate in the livelihood training programme and those who opted themselves out of it. Further, along with different socio-economic factors, we investigated the enabling role of livelihood training programmes on enhancing the entrepreneurial skills and promoting entrepreneurial activities among the sample respondents. Furthermore, having provided a comprehensive account for different types of micro-enterprises opted by the two categories of SHG members in this chapter, we now move forward to provide a comparative account of performance of the micro-enterprises opted by the trained and untrained micro-entrepreneurs. In this regard, firstly, we use descriptive statistics, which provides us with a precise summary of different aspects related to the performance of micro-enterprises. These include a summary on source of starting

capital, tenure of micro-enterprise operation, distribution strategy of the finished products, and earnings of SHG members from microenterprises. Secondly, we draw meaningful conclusions regarding the performance of micro-enterprises for the two categories of SHG members using inferential statistics.

6.3.1 Source of Starting Capital

Source of starting capital is critical to performance of any business venture as in it instils a sense of financial security to the entrepreneur which helps them take calculated risks, which is necessary for entrepreneurship. From Table 6.6 it is clearly visible that most of the micro-enterprises were self-financed (50.32%). Around 34 percent of them used borrowed capital from the SHG or Ward Development Society (WDS). Comparatively, a lower proportion (10.40%) were financed partly by the microentrepreneur themselves and partly by SHG/WDS borrowings.

Table 6.6: Source of Starting Capital for Micro-entrepreneurial Venture

Source	Trained	Untrained	Total
Self-financed	164 (51.74)	73 (47.40)	237 (50.32)
SHG/WDS	111 (35.02)	53 (34.42)	164 (34.82)
Self-financed+ SHG/WDS	30 (9.46)	19 (12.34)	49 (10.40)
Loan from family	10 (3.15)	4 (2.60)	14 (2.97)
Money lender	1 (0.32)	4 (2.60)	5 (1.06)
SHG+Family	1 (0.32)	1 (0.65)	2 (0.42)
Grand Total	**317**	**154**	**471**

Note: Values in parenthesis represent percentage of column total
Source: Primary Survey

Apart from these sources the least chosen sources of finance were—borrowing from family members (2.97%), money lender (1.06%), and family together with SHG (0.42%). A closer perusal of the data reveal that trained SHG members have preference for self-finance (51.74%), Finance from SHG/WDS (35.02%), and loan from family

(3.15%) as their source of starting capital as compared to their untrained counterparts. On the other hand, untrained SHG members have preferred for Self-finance together with loan from SHG/WDS (12.34%), loan from money lender (2.60%) and loan from SHG together with family members (0.65%) as their source for starting capital in comparison to trained ones.

6.3. 2 Number of Years of Having Operated the Microenterprises by the SHG Members

A longer tenure of micro-enterprise operation is often indicative of its resilience to economic turmoil and market competition. It also signifies the ability to earn a threshold level of profit to ensure its survivability.

Table 6.7: No. of Years of Having Operated the Microenterprises by the SHG Members

Years	Untrained	Trained	Total
1-3	83 (53.90)	193 (60.88)	276 (58.60)
4-6	32 (20.78)	67 (21.14)	99 (21.02)
7-9	3 (1.95)	12 (3.79)	15 (3.18)
10-12	9 (5.84)	19 (5.99)	28 (5.94)
13-15	5 (3.25)	8 (2.52)	13 (2.76)
>15	22 (14.29)	18 (5.68)	40 (8.49)
Grand Total	**154**	**317**	**471**

Note: Values in parenthesis represent percentage of column total

Source: Primary Survey

Table 6.7 shows that an overwhelming majority of the microenterprises—near about 60 percent—operated by the SHG members are about one to three years old while another 21 percent are four to six years old which hints to the fact that microenterprise adoption is gradually gaining popularity amongst the women members of SHG. The age distribution of microenterprises operated across the trained and the untrained members are fairly similar. It may, however, be noted that a higher share of the older enterprises,

aged more 15 years, are operated by the untrained members. A closer perusal of the data reveals that such old enterprises are mainly traditional in nature and were started by the women even before they were enrolled into the SHGs. Such enterprises were operated mostly by the older women members who have very less motivation to attend the livelihood generation programmes offered by the SHPIs.

6.3. 3 Distributional Strategies of Finished Products

Choice of deliberate distributional strategy makes an enterprise cost-effective and helps it gain comparative advantage over other similar enterprises. Table 6.8 shows the distributional strategy of different micro-enterprises undertaken by trained and untrained SHG members of Sikkim.

Table 6.8: Distributional Strategy of Finished Products of Trained and Untrained SHG members of Sikkim

Strategy	Trained	Untrained	Total
Forward Linkage	102 (32.18)	46 (29.87)	148 (31.42)
Local shopkeepers	81 (25.55)	30 (19.48)	111 (23.57)
Self-owned Petty Shop	48 (15.14)	25 (16.23)	73 (15.50)
Friends and relatives	34 (10.73)	18 (11.69)	52 (11.04)
Haat Bajar	23 (7.26)	14 (9.09)	37 (7.86)
Door step selling	12 (3.79)	18 (11.69)	30 (6.37)
Government organised mela	10 (3.15)	1 (0.65)	11 (2.34)
Network Marketing	7 (2.21)	2 (1.30)	9 (1.91)
Grand Total	**317**	**154**	**471**

Note: Values in parenthesis represent percentage of column total
Source: Primary Survey

Data shows that the most popular distributional strategy is forward linkage which is followed by selling to local shopkeepers, after that comes distribution through self-owned petty shops, selling to friends and relatives, selling in weekly "*haat bajars*" (market), door step selling, retailing in government organised mela and the least

preferred choice—network marketing. A comparative study of the two category of micro-entrepreneurs shows that, higher percentage of trained members have chosen to retail their products through forward linkage, local shopkeepers, government organised *mela* and network marketing. On the other hand, higher percentage of untrained members opted for self-owned petty shops, selling to friends and relatives, local *'haat bazars,'* and door step selling.

6.3.4 Earnings of SHG Members from Microenterprises

Table 6.9 shows a comparative account of the average earnings of the trained and untrained members out of their respective microenterprises.

Table 6.9: Mean Earnings of SHG Members from Microenterprises

Income	Untrained	Trained	Total	t-stat	P-Value
Mean Income from ME (S.D)	Rs.65013.55 (Rs.95500.004)	Rs.78804.81 (Rs.87058.855)	Rs.72505.92 (Rs.91159.729)	**-1.540**	**.943**

Source: Author's Calculation

Although, on an average the trained respondents are found to have higher earnings compared to the untrained counterparts, the statistical insignificance of the t-statistic clearly rules out the possibility of differential earnings across the two groups at the population level. This, however, may not always imply that the untrained individuals perform at par with the trained ones and as such training has very little to do with the earning potential of the trained respondents. One plausible explanation of the apparent indifference in average earnings might be because of the fact that most of the enterprises ventured into by the trained respondents are relatively new vis-à-vis those of the untrained ones and hence are likely to be under gestation period during which the profitability is generally low. Moreover, after attaining more years of maturity the enterprises are able to better exploit the forward and backward linkages as well as the scale economies making them more profitable.

6.3.5 Econometric Analysis of the Performance of Micro-enterprises by Trained and Untrained SHG Microentrepreneurs

After having discussed about the types of micro-enterprises and performance related descriptive statistics, now we move forward to analyse the performance of micro-enterprises opted by trained and untrained SHG microentrepreneurs. In other words, we try to find the impact of livelihood training participation on performance of micro-enterprise.

There exists a substantial body of literature discussing the performance across a wide array of entrepreneurial ventures using suitable parameters. In our study, the kind of microenterprises we came across in our sample are primarily survivalist in nature in the sense that they are operated with the sole motive of earning a living and not profiteering or accumulation. Taking a cue from contemporary studies (Bharti, 2014; Goswami et al., 2019; Manimekalai & Rajeswari, 2001; Shaw, 2004),we have defined a micro-enterprise as a self-employment activity—mostly informal—related to petty business, agriculture[v], and allied activities pursued mainly by rural women to supplement household income. As the size of the enterprise is minuscule the use of paid workforce is negligible and the owner herself manages almost all the associated chores. Under the circumstance where entrepreneurial ventures are not of uniform nature, choosing a proper performance parameter is crucial. Thus, following similar studies (Chirwa, 2008; Harpriya et al., 2022) in the domain, we used profit margin ($revenue - cost/revenue$) as a parameter to measure performance of micro-enterprise. Profit margin forms a standard and universally applicable parameter across various enterprises which provides us with robust results leading to credible conclusions.

Since profit margin (dependent variable) is a continuous variable which is bounded within the range of 0 to 1, we have applied the beta regression model to find the

difference between performance of micro-enterprises of trained and untrained SHG members. The model is estimated using the following regression equation:

$$Profit\ margin = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \cdots \ldots\ldots\ldots\ldots\ldots + \beta_{10} X_{11i} + \mu_i \ldots\ldots\ldots (i)$$

A detailed description of the explanatory variables mentioned in equation *(i)* and its expected relation with the performance of micro-enterprises is given in Table 6.10

Table 6.10: List of Explanatory Variables and their Expected Relationship with the Profit Margin Earned by the SHG Micro-entrepreneurs

Variable	Description	Expected Relationship
Training Status (X_1)	It is a binary variable denoting the training status of SHG members. Training Status=1, if the SHG member has attended any one of the training programmes provided by the SHPI(s), otherwise=0.	(+)
Respondent's Age group (X_2)	It is a categorical variable denoting the age group of the respondent (in years) with five levels viz: less than 30, 31–40, 41–50, 51–60, and above 60.	(+)
Respondent's Education (X_3)	The variable captures the level of education attained by the respondent. It is a categorical variable denoting six levels of educational attainment: Illiterate, Primary, Middle, High school, Senior Secondary, and graduate & above.	(+)
Caste (X_4)	It is a categorical variable with three levels signifying caste of the respondent viz.: General/Other Backward Castes (OBCs), Scheduled Castes (SC) and Scheduled Tribes (ST).	(+/-)
Ethnic Group (X_5)	It is a categorical variable denoting the ethnic group to which the respondent belongs. It has five levels to denote the categories of Bhutia, Lepcha, Limboo, Nepali, and Sherpa.	(+/-)
No. of earning members (X_6)	It is a discrete variable denoting the number of earning members of the respondent's household except the respondent	(+)

Table 6.10: List of Explanatory Variables and their Expected Relationship with the Profit Margin Earned by the SHG Micro-entrepreneurs

Variable	Description	Expected Relationship
Landholding (X_7)	A binary variable which takes the value 1 if the respondent's household owns an ancestral land and 0 other wise	(+)
Years of SHG enrolment (X_8)	It is a discrete variable denoting the number of years the individual has spent as a member of the SHG.	(+)
No. of children (X_9)	It is a discrete variable representing the number of members in a respondent's household up to age 14 years.	(+)
Family size (X_{10})	It is a discrete variable representing the total number of members in a respondent's household.	(+)
District Dummies (X_{11})	To account for spatial differences in adoption of microenterprises we have used dummies to represent each of the four districts: East Sikkim, West Sikkim, North Sikkim, and South Sikkim.	(+)

6.3.6 Regression Results

In order to determine whether there is any significant difference in performance of microenterprises owned by trained and untrained SHG micro-entrepreneurs we conducted a beta regression with a sample of 292 respondents. Table 6.11 presents the coefficients together with the respective average marginal effects of the estimated beta regression. The result shows that the coefficient related to the variable training is positive and significant. This signifies that the trained microentrepreneurs are performing better in terms of earning profit margin as compared to their untrained counterparts.

Table 6.11: Impact of Training on Profit Margin Earned by SHG Microentrepreneurs (Estimates Based on Beta Regression)

Variables	Coefficient	S.E.	Marginal effect	p-value
(Intercept)	-2.041 ***	0.134		
Training (Yes=1)	0.213 ***	0.032	0.024	0.000
Respondent's Age group				
41-50	**Base**			
<30	0.073	0.051	0.009	0.158
31-40	0.006	0.035	0.001	0.866
51-60	-0.021	0.055	-0.002	0.696
>60	-0.041	0.089	-0.005	0.645
Respondents Education				
Graduation and above	**Base**			
Illiterate	0.150	0.093	0.018	0.099
Primary (I-V)	0.007	0.083	0.001	0.935
Middle (VI-VII)	0.025	0.087	0.003	0.769
High School (VIII-X)	0.033	0.080	0.004	0.675
Senior-Secondary (XI-XII)	-0.018	0.086	-0.002	0.835
Caste				
Gen/OBC (ref)	**Base**			
SC	-0.102	0.108	-0.011	0.327
ST	-0.019	0.061	-0.002	0.753
Ethnic Group				
Bhutia	**Base**			
Lepcha	-0.212 **	0.080	-0.027	0.008
Limboo	-0.188	0.108	-0.024	0.072
Nepali	-0.232 **	0.077	-0.029	0.004
Sherpa	-0.233 *	0.115	-0.029	0.035
No. of earning members	-0.002	0.030	0.0002	0.952
Land ownership (Yes=1)	0.080 *	0.036	0.009	0.024
Years of SHG-enrolment	0.018 **	0.006	0.002	0.003
No. of Children	-0.017	0.024	-0.002	0.498
Family size	0.005	0.018	0.001	0.759
District				
North Sikkim	**Base**			
East Sikkim	0.125 *	0.056	0.014	0.024
West Sikkim	0.048	0.053	0.005	0.357
South Sikkim	0.053	0.056	0.006	0.345
Diagnostics				
No. of obs.: 292				
Phi coefficient: 148.195 ***				
Pseudo R-squared: 0.2929		Log-likelihood: 635.5		
****p<0.001; **p<0.01; *p<0.05*				

Source: Authors estimate based on primary data using R version 4.1.2

Apart from training status, our model consists of few control variables which accounts for variability in socio-economic status on the performance of micro-enterprises run by the two categories of micro-entrepreneurs. The result shows that the SHG microentrepreneurs belonging to Bhutia ethnicity are earning significantly higher profit margins as compared to Lepchas, Nepalis, and Sherpas. This result is in line with that in the previous chapters.

Again, we find that possession of ancestral land has a significant and positive impact on profit margin. This result is quite plausible as the land serves as an asset which can be leveraged for financing when needed, ensuring a sense of financial security. This promotes the strategic risk-taking behaviour among the entrepreneurs.

A positively significant coefficient related to "*year of SHG enrolment*" suggests a positive association between prolonged SHG membership and the performance of micro-enterprises. This can be attributed to the diverse facilities—broadly discussed in chapter 3—that an individual receives overtime as an SHG member.

As far as spatial disparity is concerned, we found that as compared to SHG micro-entrepreneurs from North Sikkim, those from east Sikkim were found to be earning a higher profit margin. Apart from these, variables such as respondents age, educational attainment, caste, number of children and family size are found to have statistically insignificant coefficients suggesting no reliable evidence on its impact on SHG micro-entrepreneurs' performance. Nevertheless, we refrain from detailed discussion of this model as our major predictor variable—training participation—happens to be choice variable where the SHG members self-selected themselves to participate in the livelihood training programmes. This self-selection leads to non-random sample selection, which gives rise to biased conclusions (Cameron & Trivedi, 2005; Heckman, 1979). Such selection bias can be adequately addressed using Propensity Score

Matching (PSM) method (Guo & Fraser, 2014).

Table 6.12: Estimates Based on Propensity Score Matching Methods

Outcome variable- Profit margin from micro-enterprises of respondents,			
Explanatory variable- Participation of SHG member into Livelihood training programme			
Matching Algorithms	**ATT**	**S.E.**	**Observations**
1:1 N.N Caliper = 0.05	0.162 ***	0.039	158
Full Matching	0.215 ***	0.030	292
****p<0.001; **p<0.01; *p<0.05*			

Source: Authors estimate based on primary data using R version 4.1.2

Table 6.12 presents the result of the PSM where ATT has been obtained using two matching algorithms—one to one nearest neighbourhood matching without replacement with caliper = 0.05 and full matching method. The result suggests that there is positive and significant relation between training participation and performance of micro-enterprise. In other words, trained participants earned significantly higher percent of profit margin as compared to the untrained ones.

Table 6.13: Rosenbaum bounds- Profit margin from Microenterprises

Wilcoxon Signed Rank Test		
Gamma	Lower bound	Upper bound
1	0.00	0.0001
1.1	0.00	0.0005
1.2	0.00	0.00
1.3	0.00	0.0035
1.4	0.00	0.0075
1.5	0.00	0.0143
1.6	0.00	0.0247
1.7	0.00	0.0395
1.8	0.00	0.0592
1.9	0.00	0.0841
2	0.00	0.1142
2.1	0.00	0.1491
2.2	0.00	0.1882
2.3	0.00	0.2309

Note: Gamma is Odds of Differential Assignment to Treatment Due to Unobserved Factors

Source: Authors estimate based on primary data using R version 4.1.2

However, the result of sensitivity analysis presented in Table 6.13 suggests that the above conclusions drawn are highly sensitive to unobserved biases.

6.4 Conclusion and Policy Recommendation

Our study tries to explore the nature and pattern of SHG steered livelihood generation activities in the north-eastern state of Sikkim using primary survey data collected from a sample of 416 women SHG members. We also examine the efficacy of 'training' or 'capacity building programmes,' provided by various Self-help group promoting institutions (SHPIs), in enhancing the performance of entrepreneurial ventures operated by the women at the grass root level. We find that more than two-thirds of the sample SHG members were operating micro-enterprises while near about 30 percent operated no such enterprise due to personal constraints. Among those who operated microenterprises, even though the dominant trend was to own and operate a single micro-enterprise; a considerable fraction of about 43 percent operated multiple microenterprises simultaneously. As our sample members were from rural settings, majority of the operated microenterprises—close to three quarters of the entire sample—were primary sector activities while the remaining enterprises can be categorised as secondary and tertiary activities. That microenterprise adoption is gradually gaining popularity amongst the women SHG members in Sikkim can be inferred from the fact that three out of five enterprises are about one to three years old. A breakup of the collected data across the type of micro-enterprises shows that majority of the group members have opted for agro-enterprises which are traditionally dominant in the countryside, although diversification towards newer vocations like petty business, network marketing, rural tourism etc. was also noticed. It was also observed that SHGs have played a vital role in financing the micro-enterprises.

Our study also provides a number of insights as regards to the efficacy of livelihood training programmes provided by the SHPIs. It is found that compared to the untrained members the proportion of trained members owning and operating microenterprises is

higher. On an average, the trained members are found to operate a higher number of units (1.75) compared to the untrained ones (1.38). Moreover, it can be observed that the micro-enterprises owned by the trained members are newer compared to their untrained peers which indicates that the former are relatively newer entrants in the activity.

It is observed that on an average the trained members report higher annual earnings from their enterprises compared to the untrained ones. Although the observation holds good for our sample, the statistical insignificance of the t-statistics indicates that the observation might be coincidental and, as such, cannot be generalized at the level of population. Again, the results of beta regression shows that the micro-enterprises operated by trained members were earning better profit margin as compared to their untrained counterparts. This result is even validated by estimates of the propensity score matching method. However, the result of Rosenbaum bounds sensitivity analysis shows that the PSM estimates are sensitive to unobserved biases and thus strong conclusion cannot be drawn. This might be because the enterprises operated by the trained respondents are relatively newer compared to those operated by their untrained peers and hence are at a lower stage of their gestation period, relatively less mature in terms of establishing market linkages and exploiting scale economies.

On the basis of our findings, we would like to prescribe few policy recommendations. First, since credit sourced via SHGs is the major source of start-up capital for starting a microenterprise; the concerned agencies should take efforts to reduce the interest rates for entrepreneurial ventures. This would reduce the debt servicing burden and thereby enhance earnings. Second, it was observed that ‘business failure in the past’ is one of the major reasons cited for not taking up an enterprise. In such cases we recommend that microenterprises should be operated at the level of groups which would increase

the scale of production, reduce average costs, and can be priced competitively to reduce business failure. Third, for the micro-enterprises at the nascent stage the concerned SHPIs should upscale their initiatives in establishing effective forward and backward linkages. Such initiatives would reduce the cost of obtaining the raw materials as well as enhance the marketability of products making those units economically viable. Fourthly, since marketing of produce is crucial for making such units profitable, state agencies should increase the frequency of '*Sabala Melas'* or fair organized for sale of SHG products. Efforts should also be made to allot some space for the sale of SHG products in the weekly markets across the rural districts.

[iv] The prescribed norm requires the SHGs'adherence to the *'Panchasutras'*: Regular meetings; Regular savings; Regular inter-loaning; Timely repayment; and up-to-date books of accounts, for availing funds.

[v] It's worthwhile to clarify here that by agriculture we refer to only those cash crops which were encouraged by the self-help group promoting institutions (SHPI), instead of traditional agriculture, which is not included in our definition.

CHAPTER 7

CONCLUSION AND POLICY IMPLICATIONS

7.1 Findings

With the objective to address the multifaceted problem of poverty, successive governments launched several programmes keeping SHGs at forefront. SHGs are saving based mutually cohesive collectives of individuals, mostly women, belonging to socio-economically disadvantaged backgrounds. Although in the initial period, the primary motivation behind mobilizing the rural poor into SHGs was to remove the barriers to low-cost formal credit and reduce their dependence on exploitative informal sources; over a period of time, the SHG movement incorporated livelihood generation as one of its key objectives. This transition is clearly manifested in the SHG based programmes launched overtime. During the formative years, the policies on SHGs (SHG-BLP) prioritized its formation, nurturing, and extending formal financial services to the poor. The later launched policies (SGSY, NRLM, NERLP, and DAY-NRLM), on the other hand, apart from augmenting the financial support, emphasized on providing skill-based trainings to promote micro-entrepreneurial activities among the poor women members so as to make them economically self-reliant. The livelihood training programmes are demand based and tailored as per the requirement of rural women for promoting self-employment activities among them. With the continued proliferation of such capacity building livelihood training programmes and unwavering government support in favour of its widespread propagation, it becomes imperative to study its efficacy and impact over micro-entrepreneurial activities as well as other closely related dimensions among the poor women SHG members.

Our study, based on a representative sample of 416 SHG women from all four districts

of Sikkim, investigates the enabling role of training programmes on microenterprise development through multiple dimensions. We start with examining the role of institutions in promoting micro-entrepreneurship among the women SHG members. We find that government and non-government institutions promoting SHGs have taken a significant step to increase the outreach of formal banking services to the SHGs in the form of saving linkage and credit linkage. Different funds such as RF, CIF, and VRF have been provided to cater multiple needs of the members. In order to channelize credit and funds to productive use, diverse capacity building training programmes have been arranged in the field of animal husbandry, organic farming, petty manufacturing and vocational training on multiple skills. Further, with the aim to promote SHG products, they are equipped with reserved stalls in weekly *haat bazaars*. Special fairs are organized where SHG products are set to display for sale. E-platforms have been launched to improve the visibility and sales of SHG products at the national scale. The state government extended its support by providing sewing machines, laptops, AGEY vehicles and raw materials to stimulate micro-enterprise adoption. Furthermore, to improve the viability of nascent micro-enterprises the state government provided special business contracts to the SHGs. Producer groups were formed to augment the scale of production. Additionally, selected SHG members were provided with specialized training and were placed as Community Resource Persons to disseminate technical knowhow across their peer groups.

Examining the socio-economic background of the SHG members is crucial for understanding the role of training on micro-enterprise development. A close perusal of the socio-economic profile of the SHG women revealed that most of them were aged between 31-40 years, possessed high school level of education (VIII-X), belonged to General/OBC caste, and were ethnically identified as "*Nepali.*" A significant number

of the SHG members lived in nuclear family households, and possessed ancestral land. Their household heads were mostly employed in non-entrepreneurial livelihood activities. On an average, the number of dependent members was found to be higher compared to the number of earning members in each household belonging to the surveyed SHG members.

Using chi-square test and independent sample t-test, we find significant difference in the socio-economic profile of the two groups of the sample SHG members—those who chose to participate in the livelihood training programme and those who opted themselves out of it—across dimensions such as age, educational attainment, type of family, land ownership, occupation of household head and geographical location. Predominantly, the trained members were aged between 31 and 50 years, had medium level of education (class VI–XII), they mostly resided in joint families. They were found to own ancestral land, and their household heads were largely engaged in entrepreneurial activities. Also, the trained members came largely from North Sikkim and West Sikkim. On the other hand, their untrained companions were either younger than 30 or older than 50, their literacy level was either very poor (illiterate or primary) or they had attained high level of education (college and above), they mostly resided in nuclear families, and most of them did not possess ancestral land. Their household heads were mostly employed in non-entrepreneurial activities. They were mostly located in East and South Districts of Sikkim. However, we do not observe any significant difference between trained and untrained SHG members in terms of caste, ethnicity, number of dependent members in the households, and number of earning members.

Further, using a logistic regression model, we find an intricate association between the socio-economic background of the SHG members and their probability to participate in

the training programmes. The results show that SHG women aged between 41 and 50 years, and having educational qualification up to senior secondary level were more likely to participate in the training programmes. Compared to other ethnicities, SHG members belonging to '*Nepali'* ethnicity showed higher inclination towards training programmes. Again, having fewer children, and residing in a joint family household contributed positively towards training participation. SHG members possessing ancestral land and coming from entrepreneurial family backgrounds were found to be more inclined towards training participation. We found SHG members from North Sikkim and West Sikkim to be more inclined towards receiving training vis-a-vis other two districts reflecting the importance of geographical location on training participation.

Again, using a binary logistic regression model, we find a complex interrelation between socio-economic characteristics of SHG members and their probability to graduate to a microentrepreneur. The results show that size of cultivable landholdings, volume of funds borrowed out of SHG, and number of years of enrollment in an SHG has a positive influence on the probability of the member venturing into microenterprises. It is observed that, compared to "*above 60*" age group, women in the age brackets of 31 to 60 are more likely to start a micro-enterprise. Similarly, women with 3 to 4 earning members are more likely to start a microenterprise compared to the other categories. The propensity of women members taking up micro-enterprise apparently seems to be unaffected by caste and ethnic groups but is negatively impacted with increase in the number of dependent members.

Likewise, the result of the count regression model also shows a similar trend in relationship between socio-economic background and likelihood of venturing into multiple micro-enterprises. However, we observe an exception in case of ethnic groups,

showing that the members from the *Limboo* and *Sherpa* community are likely to have a lower number of microenterprises compared to those from *Bhutia* community.

While investigating the role of training programmes we encountered the problem of self-selection bias. In order to eliminate this problem, we used the PSM method and the resulting estimates suggested that the SHG members who participated in the training programmes exhibited improved entrepreneurial skills, and were more likely to venture into multiple micro-enterprises.

Moving ahead we observe that, out of the entire sample of 416 SHG members, about 70.19 percent were operating one or more micro-enterprises. However, when the entire sample was divided across trained and untrained members, we clearly found that a higher proportion of trained members (80.09 percent) owned and operated microenterprises compared to the untrained members (58.42 percent). We even found the SHG members operating multiple micro-enterprises. The highest number of microenterprises being run by an untrained member was three while the same was six for the trained members.

These micro-enterprises were found to be related to the primary, secondary, and tertiary sectors of the economy. The study area being rural in nature, around three quarters of the micro-enterprises fell within the domain of the primary sector. Although in this regard, we observe a similar pattern across the trained and the untrained members; the trained members were found to be operating a greater number of units pertaining to the secondary activities vis-à-vis the untrained peers.

Further, our study shows that more than four-fifths of the members have ventured into animal husbandry and agribusiness; petty business is opted by about 17 percent of the members while a handful of members, less than two percent, have ventured into network marketing. The pattern of microenterprise distribution is almost similar across

the trained and untrained members. Clearly, the group members have invariably opted for traditional enterprises which are historically dominant in the countryside. With regard to animal husbandry, we found dairy, goatary, piggery and poultry to be prevalent. Agribusiness involved cultivation, processing, and sale of commercial crops like: cardamom, vegetables, ginger, mushroom, turmeric, and broom binding. Petty business included small units like beauty parlour, candy shop, canteen, butcher shop, cloth and utensil shop, apparel store, dressing tourists with traditional clothes, grocery shop, knitting, pickle making, tailoring and tea stall. Finally, network marketing considered the marketing of various consumer goods from Oriflame, Tupperware and Vestige.

Most of the micro-enterprises run by the SHG members were self-financed (50.32%). Around 34 percent of them used borrowed capital from the SHG or Ward Development Society (WDS). Comparatively, a lower proportion (10.40%) were financed partly by the microentrepreneur themselves and partly by SHG/WDS borrowings. Apart from these sources the least chosen sources of finance were— borrowing from family members (2.97%), money lenders (1.06%), and family together with SHG (0.42%).

Overwhelming majority of the microenterprises—near about 60 percent—operated by the SHG members were about one to three years old while another 21 percent were four to six years old which hints to the fact that microenterprise adoption is gradually gaining popularity amongst the women members of SHG. The age distribution of microenterprises operated across the trained and the untrained members was fairly similar. It may, however, be noted that a higher share of the older enterprises, aged more than 15 years, were operated by the untrained members.

We also found that the most popular distributional strategy used by the micro-entrepreneurs was forward linkage which was followed by selling to local shopkeepers,

after that came distribution through self-owned petty shops, selling to friends and relatives, selling in weekly "*haat bajars*" (market), doorstep selling, retailing in government organised mela and the least preferred choice—network marketing. A comparative study of the two category of micro-entrepreneurs shows that, higher percentage of trained members have chosen to retail their products through forward linkage, local shopkeepers, government organised *mela* and network marketing. On the other hand, higher percentage of untrained members opted for self-owned petty shops, selling to friends and relatives, local *'haat bazars,'* and doorstep selling.

As far as the impact of training on performance of micro-enterprises is concerned, we found, using PSM method, that the trained SHG members earned a significantly higher amount of profit margin compared to their untrained peers. However, this result was found to be weak because of its sensitivity to unobservables, thus limiting its generalizability.

Furthermore, near about 30 percent of the sample SHG members did not operate any microenterprise. We found that, out of the 124 members not operating any economic unit, the proportion of untrained members was higher compared to the trained ones. The respondents listed several reasons for not venturing into micro entrepreneurial activities. About 37.09 percent of the members reported that they were unable to mobilize adequate time for undertaking any self-employment activity as they had to manage household chores or take care of new-born children. Another 31.45 percent stated that they were already employed in the public or private sector or on a daily wage basis, while about one-fifth of them reported lack of confidence in opening up an enterprise due to failure of their previous business. Close to nine percent of the respondents reported 'old age' as the main deterrent for taking up a business venture while about two percent of these members asserted that they did not have any room or

space for commercial activity. Across the two categories of members, it was observed that amongst the untrained ones the most dominant reason for opting out was business failure in the past (24.05 percent) while among the trained members it was hectic household chores (33.33 percent).

7.2 Policy Implications

The policy implications following from our study is fairly straightforward. Participation into SHGs opens up access to multiple services which are otherwise inaccessible to the poor. Acknowledging the incentives—skill support, financial support, marketing assistance, and a variety of hand holding exercises—given by government agencies as well as the concerned NGOs to the SHG members for promoting micro entrepreneurial activities among them, we suggest SHPIs to implement strategies to collectivize more and more members from poor and vulnerable communities into SHGs.

Considering the significant and positive impact of livelihood training programmes on entrepreneurial skills and its enabling role in diversifying into multiple microenterprises, we suggest that SHPIs should upscale their training programmes and conduct it more often. Further, provisions should be made for video documentation of the training sessions and shared among the trainees for future reference. The trainees should be provided with a mentor to provide hand holding even after the programme is over.

We found that not all SHG members were participating in training programmes; SHPIs should come up with additional incentives such as, providing rewards to the outstanding trainees, delivering participation certificates, supplying resources for the start-ups which would make the training programmes attractive and encourage more SHG members to participate in such programmes.

Since it was observed that funds borrowed from SHG acted as an enabler in starting a

microenterprise; efforts should be taken by government agencies to reduce the rate of interest on the loans advanced for entrepreneurial activities. This would reduce the cost of the start-up capital on the part of the borrowers and thereby motivate them in diversifying their vocations.

It was observed that 'business failure in the past' is one of the major reasons cited for not taking up an enterprise. In such cases we recommend that microenterprises should be operated at the level of groups which would increase the scale of production, reduce average costs, and can be priced competitively to reduce business failure. For the micro-enterprises at the nascent stage the concerned SHPIs should upscale their initiatives in establishing effective forward and backward linkages. Such initiatives would reduce the cost of obtaining the raw materials as well as enhance the marketability of products making those units economically viable. Since marketing of produce is crucial for making such units profitable, state agencies should increase the frequency of '*Sabala Melas'* or fairs organized for sale of SHG products. Efforts should also be made to allot some space for the sale of SHG products in the weekly markets across the rural districts.

7.3 Limitation of the Study and Area of Future Research

In order to assess the impact of training programmes we used a cross-sectional data set, applied propensity score matching method to estimate results and subjected these results to Rosenbaum bounds sensitivity analysis to study its responsiveness to unobservables. However, using a cross-sectional dataset for an impact evaluation study entails certain limitations. It provides us insights about the sample at a specific point of time only. A more comprehensive way to study causal effects of training participation is to use a longitudinal dataset and employ the Difference-in-Difference method. It provides better insights about the same sample over multiple time periods. Thus, there exists scope for a longitudinal study to examine the impact of training.

While comparing the performance of microenterprises run by the trained and untrained SHG members, we found the Average Treatment effect on the Treated (ATT) estimates to be significant and positive. This implied that the microenterprises run by trained SHG members perform better as compared to those run by their untrained peers. However, the results of Rosenbaum bounds sensitivity analysis suggest ATT estimates to be weak because of its responsiveness to unobservables which limits the generalization of the results. This leaves scope for future studies to include a larger range of confounding variables and truly understand the relationship between the training programme participation and the performance of microenterprises.

References

Alemu, S. H., Van Kempen, L., & Ruben, R. (2018). Women empowerment through self-help groups: The bittersweet fruits of collective apple cultivation in highland Ethiopia. *Journal of Human Development and Capabilities*, *19*(3), 308–330. https://doi.org/10.1080/19452829.2018.1454407

Anil, K., & Bal, R. (2021). Impact of microfinance on socio-economic status of women entrepreneurs in developing countries: A sentiment analysis. *International Journal of Business and Globalisation*, *1*(1). https://doi.org/10.1504/IJBG.2021 .10042809

Ayele, G. T. (2015). Microfinance institutions in Ethiopia, Kenya and Uganda: Loan outreach to the poor and the quest for financial viability. *African Development Review*, *27*(2), 117–129. https://doi.org/10.1111/1467-8268.12128

Banerjee, A., Duflo, E., Glennerster, R., & Kinnan, C. (2015). The miracle of microfinance? Evidence from a randomized evaluation. *American Economic Journal: Applied Economics*, *7*(1), 22–53. https://doi.org/10.1257/app.2013053 3

Banerjee, M. M. (1998). Micro-enterprise development: A response to poverty. *Journal of Community Practice*, *5*(1–2), 63–83. https://doi.org/10.1300/J125v05n01_05

Banerjee, P., & Borhade, S. N. (2016). A study on importance of training programmes and its impact on SHG members with special reference to Pune city. *International Journal of Management*, *7*(3), 1–8.

Banerjee, T., & Ghosh, C. (2012). What factors play a role in empowering women? A study of shg members from India. *Gender, Technology and Development*, *16*(3), 329–355. https://doi.org/10.1177/0971852412459431

Basumatary, H., Chhetri, P. C., & Raj S. N., R. (2023). Hitting the target, missing the point? Microcredit and women empowerment in rural India. *Journal of Poverty*, *27*(3), 217–234. https://doi.org/10.1080/10875549.2021.2023722

Bera, S. (2014). Dependence of households on the micro-credit programme and the women's financial contribution: An evaluation with application of the propensity score matching method. *Vidyasagar University Journal of Economics*, *18*, 132–150. http://inet.vidyasagar.ac.in:8080/jspui/handle/123456789/1550

Bera, S. (2008). Programme design and impact assessments: "Success" of microfinance in perspective. *Economic and Political Weekly*, *43*(32), 77–85. https://www.jstor.org/stable/40277833

Bharti, N. (2014). Promoting micro-enterprise through SHG: A case study of MAVIM. *Journal of Rural Development*, *33*(4), 437–457. https://doi.org/10.25175/jrd.v33i4.114421

Bharti, N. (2019). Microenterprise development through organisational interventions: A comparative study of holistic and building human capital approach in India. *International Journal Business and Globalisation*, *22*(2),154–171. 10.1504/IJBG. 2019.098732

Bhatt, A., & Bhatt, S. (2016). Microfinancing with SEWA Bank: Bringing women to the mainstream economy. *Amity Business Review*, *17*(1), 42–61.

Boyd, N. G., & Vozikis, G. S. (1994). The influence of self-efficacy on the development of entrepreneurial intentions and actions. *Entrepreneurship Theory and Practice*, *18*(4), 63–77. https://doi.org/10.1177/104225879401800404

Brody, C., Hoop, T. de, Vojtkova, M., Warnock, R., Dunbar, M., Murthy, P., & Dworkin, S. L. (2016). Can self-help group programs improve women's empowerment? A systematic review. *Journal of Development Effectiveness*, *9*(1), 15–40. https://doi.org/10.1080/19439342.2016.1206607

Brody, C., Hoop, T., Vojtkova, M., Warnock, R., Dunbar, M., Murthy, P., & Dworkin, S. L. (2015). Economic self-help group programs for improving women's empowerment: A systematic review. *Campbell Systematic Reviews*, *11*(1), 1–182. https://doi.org/10.4073/csr.2015.19

Cameron, A. C., & Trivedi, P. K. (2005). *Microeconometrics: Methods and applications*. Cambridge University Press.

Cameron, A. C., & Trivedi, P. K. (2010). *Microeconometrics using Stata* (Revised). Stata Press.

Campbell, R. H., & Wilson, R. G. (1975). *Entrepreneurship in Britain 1750-1939*. Adam and Charles Black.

Cantillon, R. (1755). *Essai sur la Nature du Commerce en général*.

Carvalho, D. G. de G., Resende, L. M. M. de, Pontes, J., Gomes de Carvalho, H., & Mendes Betim, L. (2021). Innovation and Management in MSMEs: A Literature Review of Highly Cited Papers. *SAGE Open*, *11*(4).1–22. https:// doi.org/10.1177/215 82440211052555

Chell, E., & Tracey, P. (2005). Relationship building in small firms: The development of a model. *Human Relations*, *58*(5), 577–616. https://doi.org/10.1177/00187 26705055964

Chen, M., Jhabvala, R., Kanbur, R., & Richards, C. (2007). *Membership Based Organizations of the Poor*. Routledge. https://doi.org/10.4324/97802 03934074

Chirwa, E. W. (2008). Effects of gender on the performance of micro and small enterprises in Malawi. *Development Southern Africa*, *25*(3), 347–362. https:// doi.org /10.1080/03768350802212139

Csikszentmihalyi, M. (1996). *Creativity: Flow and the psychology of discovery and invention*. Harper Collins.

Datta, S. K., & Singh, K. (2014). Determinants of income generation and financial performance through self-help groups. *Journal of Social Service Research*, *40*(1), 97–110. https://doi.org/10.1080/01488376.2013.845129

Datta, U. (2015). Socio-economic impacts of JEEViKA: A large-scale self-help group project in Bihar, India. *World Development*, *68*, 1–18. https://doi.org/10.1016/j.world dev .2014.11.013

de Hoop, T., van Kempen, L., Linssen, R., & van Eerdewijk, A. (2014). Women's Autonomy and Subjective Well-Being: How Gender Norms Shape the Impact of Self-Help Groups in Odisha, India. *Feminist Economics*, *20*(3), 103–135. https://doi.org /10. 1080/13545701.2014.893388

Deininger, K., & Liu, Y. (2013). Economic and social impacts of an innovative self-help group model in India. *World Development*, *43*, 149–163. https:/doiorg/ 10.1016/j.worlddev.2012.09.019

Desai, R. M., & Joshi, S. (2014). Collective action and community development: Evidence from self-help groups in rural India. *The World Bank Economic Review*, *28*(3), 492–524. https://doi.org/10.1093/wber/lht024

Dev, S. M. (2006). Financial Inclusion: Issues and Challenges. *Economic and Political Weekly*, *41*(41), 4310–4313. http://www.jstor.org/stable/4418799.

Doepke, M., & Tertilt, M. (2019). Does female empowerment promote economic development? *Journal of Economic Growth*, *24*(4), 309–343. https://doi.org/10. 1007/s10887-019-09172-4

Duflo, E. (2012). Women empowerment and economic development. *Journal of Economic Literature*, *50*(4), 1051–1079. https://doi.org/10.1257/jel.50.4.1051

Dutta, R., & Sundaram, K. P. M. (2004). *Indian economy*. S. Chand and Company.

Dwivedi, N. T., & Dwivedi, A. K. (2022). Understanding impact of microcredit on socio-economic status of women micro-entrepreneurs. *International Journal of Business and Globalisation*, *30*(2), 262–278. https://doi.org/10.1504/IJBG.2022. 122668

Field, E., Jayachandran, S., & Pande, R. (2010). Do traditional institutions constrain female entrepreneurship? A field experiment on business training in India. *American Economic Review*, *100*(2), 125–129. https://doi.org/10.1257/aer. 100.2.125

Garikipati, S. (2008). The impact of lending to women on household vulnerability and women's empowerment: Evidence from india. *World Development*, *36*(12), 2620–2642. https://doi.org/10.1016/j.worlddev.2007.11.008

Ghosh, M. (2012). Micro-finance and rural poverty in India SHG–bank linkage programme. *Journal of Rural Development*, *31*(3), 347–363. https://doi.org/10.25175 /jrd.v31i3.114537

GOI. (2011). *Primary Census Abstract (PCA); District Census Handbook, Census of India 2011*. Directorate of Census Operations Sikkim. https://censusindia.gov .in/2011census/dchb/1100_PART_A_DCHB_SIKKIM.PDF

GOI. (2017). *A handbook on SHG - Bank linkage*. Ministry of Rural Development.

GOI. (2019). *Report of the technical group on population projections*. National Commission on Population Ministry of Health & Family Welfare, Nirman Bhawan, New Delhi. https://nhm.gov.in/New_Updates_2018/Report_ Population_Projection_20 19.pdf

GOI. (2021). *Annual Report:Periodic Labour Force Survey (PLFS) July 2019-June 2020* (Annual Report, PLFS 2019-20; p. 43). Ministry of Statistics and Programme Implementation,National Statistical Office. https://www.mospi.gov.in/documents/ 213904/301563/Annual_Report_PLFS_2019_20m1627036454797.pdf/18afb74a-3980-ab83-0431-1e84321f75af

Goswami, K., Hazarika, B., & Handique, K. (2019). Socio-cultural motivation in women's entrepreneurship: Exploring the handloom industry in Assam. *Asian Journal of Women's Studies*, *25*(3), 317–351. https://doi.org/10.1080/1225 9276.2019.1637391

Government of Sikkim. (2013). *Sikkim statistics, Government of Sikkim,*. available at: https://sikkim.gov.in/KnowSikkim/statistics/sikkim-statistics (accessed 16 January 2022)

Government of Sikkim, (2014). *Annual Report 2013-14* (pp. 1–149). Rural management and Development Department. https://rmdd.sikkim.gov.in/wp-content /uploads/2017/02/Annual_Report_2013-14.pdf

Government of Sikkim. (2019). *Annual Report 2018-19* (pp. 1–70). Rural Management and Development Department. https://rmdd.sikkim.gov.in/wp-content/uploads/ 2020/ 03/Annual-Repore-2018-2019.pdf

Government of Sikkim. (2020). *Annual Report 2019-20* (pp. 1–139). Rural management and Development Department. https://rmdd.sikkim.gov.in/wp-content/uploads/2021/01/RDD-Annual-Report-2019-20.pdf

Government of Sikkim. (2022). *Ministry of rural development government of India appreciates the Sikkim rural livelihood mission initiative on "e marketing of shg products"* Government of Sikkim. https://sikkim.gov.in/media/news-ann ouncement/ newsinfo?name=Ministry+of+Rural+Development+Government+of+India+appreciat es+the+Sikkim+Rural+Livelihood+Mission+initiative+on+%E2%80%9Ce+marketin g+of+SHG+products%E2%80%9D

Greene, W. H. (2012). *Econometric analysis* (7th ed). Prentice Hall.

Gugerty, M. K., Biscaye, P., & Leigh Anderson, C. (2019). Delivering development? Evidence on self-help groups as development intermediaries in South Asia and Africa. *Development Policy Review*, *37*(1), 129–151. https://doi.org/10.1111/ dpr.12381

Guo, S., & Fraser, M. W. (2014). *Propensity score analysis: Statistical methods and applications* (Second edition). SAGE.

Harpriya, Sharma, R. K., & Sah, A. N. (2022). Impact of demographic factors on the financial performance of women-owned micro-enterprises in India. *International Journal of Finance & Economics*, *27*(1), 6–17. https://doi.org/ 10.1002/ijfe.2133

Hasalkar, S., Rao, S., & Badiger, C. (2005). Entrepreneurship qualities of members of self help groups in Dharwad district of Karnataka state. *Journal of Social Sciences*, *11*(3), 229–231. https://doi.org/10.1080/09718923.2005.11892517

Heckman, J. J. (1979). Sample Selection Bias as a Specification Error. *Econometrica*, *47*(1), 153–161. https://doi.org/10.2307/1912352

Hemtanon, W., & Gan, C. (2021). Impact of microfinance programs in Thailand. *Agricultural Finance Review*, *81*(5), 702–718. https://doi.org/10.1108/AFR-02-2020-0026

Hoffmann, V., Rao, V., Surendra, V., & Datta, U. (2021). Relief from usury: Impact of a self-help group lending program in rural India. *Journal of Development Economics*, *148*, 1–20. https://doi.org/10.1016/j.jdeveco.2020.102567

Holmstrom, B., & Tirole, J. (1997). Financial intermediation, loanable funds, and the real sector. *The Quarterly Journal of Economics*, *112*(3), 663–691. https://doi.org/10.1162/003355397555316

Jack, S. L., & Anderson, A. R. (2002). The effects of embeddedness on the entrepreneurial process. *Journal of Business Venturing*, *17*(5), 467–487. https://doi.org/10.1016/S0883-9026(01)00076-3

Jain, S. K., & Tripathy, K. K. (2011). Micro-finance and rural enterprises: An analysis of operational performance and constraints in the SHG-bank linkage program in India. *Eurasian Economic Review*, *1*(1), 29–50. https://doi.org/10.14208 /BF03353823

Jakimow, T. (2007). The Rationale of Self-help in Development Interventions: A Case Study of a Self-help Group Programme in Tamil Nadu. *Journal of South Asian Development*, *2*(1), 107–124. https://doi.org/10.1177/097317410600200105

Joshi, G. (2019). An analysis of women's self-help groups' involvement in microfinance program in India. *Rajagiri Management Journal*, *13*(2), 2–11. https://doi.org/10.1108/RAMJ-08-2019-0002

Kalyani, W., & Chandralekha, K. (2002). Association between socio-economic demographic profile and involvement of women entrepreneurs in their enterprise management. *The Journal of Entrepreneurship*, *11*(2), 219–248. https://doi.org /10.1177/097135570201100204

Karlan, D., & Valdivia, M. (2011). Teaching entrepreneurship: Impact of business training on microfinance clients and institutions. *Review of Economics and Statistics*, *93*(2), 510–527. https://doi.org/10.1162/REST_a_00074

Khanna, M., Kochhar, N., & Palaniswamy, N. (2015). A retrospective impact evaluation of the Tamil Nadu empowerment and poverty alleviation (pudhu vaazhvu) project. *The Journal of Development Studies*, *51*(9), 1210–1223. https://doi.org/10.1080/00220388. 2015.1028538

Kirzner, I. M. (1982). *The theory of entrepreneurship in economic growth Encyclopedia of entrepreneurship*. Englewood Cliffs, N.J.: Prentice-Hall.

Knight, F. H. (1921). *Risk, Uncertainty and Profit*. New York: Kelley & Millman, Inc.

Kumar, N., & Sensarma, R. (2017). Efficiency of microfinance institutions in India: A stochastic distance function approach. *Journal of Emerging Market Finance*, *16*(2), 151–168. https://doi.org/10.1177/0972652717712372

Leibenstein, H. (1979). *The general X-efficiency paradigm and the role of the entrepreneur. Time, uncertainty and disequilibrium*. MA: Lexington Books.

Locke, E. E. (2000). *The prime movers: Traits of the great wealth creators*. AMACOM.

Lyons, T. S., Lyons, J. S., & Jolley, G. J. (2019). The readiness inventory for successful entrepreneurship (rise): A tool for university engagement in entrepreneurial learning. *Economic Development in Higher Education*, *2*, 1–8.

Lyons, T. S., Lyons, J. S., & Jolley, G. J. (2020). Entrepreneurial skill-building in rural ecosystems: A framework for applying the Readiness Inventory for Successful Entrepreneurship (RISE). *Journal of Entrepreneurship and Public Policy*, *9*(1), 112–136. https://doi.org/10.1108/JEPP-09-2019-0075

Mahajan, R., & Bandyopadhyay, K. R. (2021). Women entrepreneurship and sustainable development: Select case studies from the sustainable energy sector. *Journal of Enterprising Communities: People and Places in the Global Economy*, *15*(1), 42–75. https://doi.org/10.1108/JEC-11-2020-0184

Maity, S., & Sarania, R. (2017). Does microfinance alleviate poverty and inequality? Studying self-help groups in Bodoland, Assam. *Development in Practice*, *27*(7), 1006–1019. https://doi.org/10.1080/09614524.2017.1355353

Manimekalai, M., & Rajeswari, G. (2001). Nature and performance of informal self-help groups—A case from Tamil Nadu. *Indian Journal of Agricultural Economics*, *56*(3), 453–454.

Mattare, M. (2010). Use of self 101: The case for teaching personal development in the entrepreneurship curriculum. *New England Journal of Entrepreneurship*, *13*(1), 17–28. https://doi.org/10.1108/NEJE-13-01-2010-B002

McClelland, D. C. (1987). Characteristics of successful entrepreneurs. *Journal of Creative Behavior*, *21*(3), 219–233.

Miner, J. B., & Raju, N. S. (2004). Risk Propensity Differences Between Managers and Entrepreneurs and Between Low- and High-Growth Entrepreneurs: A Reply in a More Conservative Vein. *Journal of Applied Psychology*, *89*(1), 3–13. https:// doi.org/ 10.1037/0021-9010.89.1.3

Mohapatra, S., & Sahoo, B. K. (2016). Determinants of participation in self-help-groups (SHG) and its impact on women empowerment. *Indian Growth and Development Review*, *9*(1), 53–78. https://doi.org/10.1108/IGDR-04-2015-0016

Mukherjee, S., Mallik, S. S., & Thakur, D. (2019). Tracking financial inclusion in India: A study of SHG initiatives. *Indian Journal of Human Development*, *13*(1), 32–46. https://doi.org/10.1177/0973703019839807

Mukhia, R. (2016). *Womens' empowerment through Self Help Groups in Sikkim: A sociological study*. Sikkim University.

NABARD. (2001). *NABARD and microfinance 2000-01*. https://www.nabard.org/auth/writereaddata/tender/3107173113SMFI%202000-01.pdf

NABARD. (2002). *NABARD & microfinance 2001-2002*. https://www.nabard.org/auth/writereaddata/tender/3107173158SMFI%202001-02.pdf

NABARD. (2003). *Progress of SHG-Bank linkage in India 2002-2003*. https://www.nabard.org/auth/writereaddata/tender/3107173237SMFI%202002-03.pdf

NABARD. (2004). *Progress of SHG-Bank linkage in India 2003-2004*. https://www.nabard.org/auth/writereaddata/tender/3107173324SMFI%202003-04.pdf

NABARD. (2005). *Progress of SHG-Bank linkage in India 2004-2005*. https://www.nabard.org/auth/writereaddata/tender/3107173403SMFI%202004-05.pdf

NABARD. (2006). *Progress of SHG-Bank linkage in India 2005-2006*. https://www.nabard.org/auth/writereaddata/tender/3107173444SMFI%202005-06H.pdf

NABARD. (2007). *Status of microfinance in India 2006-07*. https://www.nabard.org/auth/writereaddata/tender/3107173521SMFI%202006-07.pdf

NABARD. (2008). *MICROFINANCE IN iNDIA 2007-08*. https://www.nabard.org/auth/writereaddata/tender/3107173636SMFI%202007-08.pdf

NABARD. (2009). *Status of microfinance in India 2008-09*. https://www.nabard.org/auth/writereaddata/tender/3107173706SMFI%202008-09.pdf

NABARD. (2010). *Status of microfinance in India 2009-10*. https://www.nabard.org/auth/writereaddata/tender/3107173739SMFI%202009-10%20Eng.pdf

NABARD. (2011). *Status of microfinance in India 2010-11*. https://www.nabard.org/auth/writereaddata/tender/3107173809SMFI%202010-11.pdf

NABARD. (2012). *Status of microfinance in India 2011-12*. https://www.nabard.org/auth/writereaddata/tender/3107172233SMFI2012.pdf

NABARD. (2013). *Status of microfinance in India 2012-13*. https://www.nabard.org/auth/writereaddata/tender/3107172325Status_of_Microfinance_in_India_2012-13.pdf

NABARD. (2014). *Status of microfinance in India 2013-14*. https://www.nabard.org/auth/writereaddata/tender/3107172406SMFI_2013_14h.pdf

NABARD. (2015). *Status of microfinance in India 2014-15*. https://www.nabard.org/auth/writereaddata/tender/3107172451SMFI-2015r.pdf

NABARD. (2016). *Status of microfinance in India 2015-16*. https://www.nabard.org/auth/writereaddata/tender/1409165809Status%20of%20Microfinance%20in%20India%20-%202015-16.pdf

NABARD. (2017). *Status of microfinance in India 2016-17*. https://www.nabard.org/auth/writereaddata/tender/1307174808Status%20of%20Microfinance%20in%20India%202016-17.pdf

NABARD. (2018). *Status of microfinance in India 2017-18*. https://www.nabard.org/auth/writereaddata/tender/SMFI%202017-18.pdf

NABARD. (2019). *Status of microfinance in India 2018-19*. https://www.nabard.org/auth/writereaddata/tender/1207192354SMFI%202018-19.pdf

NABARD. (2020). *Status of microfinance in India 2019-20*. https://www.nabard.org/auth/writereaddata/tender/NABARD%20SMFI%202019-20_compressed.pdf

NABARD. (2021). *Status of microfinance in India 2020-21*. https://www.nabard.org/auth/writereaddata/tender/SoMFI-2020-21.pdf

NABARD. (2022). *Status of microfinance in India 2021-22*. NABARD. https://www.nabard.org/auth/writereaddata/tender/somfi-2021-22.pdf

Nair, T. S., & Tankha, A. (2014). *Microfinance India: State of the sector report 2013*. SAGE Publications.

Nayak, A. K. (2018). Indian women in grassroots socio-political institutions: Impact of microfinance through self-help groups. *International Journal of Indian Culture and Business Management*, *17*(4), 383–402. https://doi.org/10.1504/IJICBM. 2018.095672

Oosterbeek, H., van Praag, M., & Ijsselstein, A. (2010). The impact of entrepreneurship education on entrepreneurship skills and motivation. *European Economic Review*, *54*(3), 442–454. https://doi.org/10.1016/j.euroecorev.2009.08.002

Panda, D. K. (2009). Assessing the impact of participation in women self-help group-based microfinance: Non-experimental evidences from rural households in India. *International Journal of Rural Management*, *5*(2), 197–215. https://doi.org/10.11 77/ 097300521000500204

Panda, D. K. (2016). Trust, social capital, and intermediation roles in microfinance and microenterprise development. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, *27*(3), 1242–1265. https://doi.org/10.1007/s11 266-015-9678-8

Paramanandam, D. A., & Packirisamy, P. (2015). An empirical study on the impact of micro enterprises on women empowerment. *Journal of Enterprising Communities: People and Places in the Global Economy*, *9*(4), 298–314. https://doi.org/10.1108/JEC-08-2014-0017

Penrose, E. T. (1959). *The Theory of the Growth of the Firm.* Oxford University Press.

Pratibha, Bhayana, S., & Neeraj. (2021). Entrepreneurship activities to develop socioeconomic status of self-help groups in the Bhiwani District of Haryana. *International Journal of Business and Globalisation*, *29*(3), 428–442. https://doi.org/10.1504/IJBG.2021.118685

Putta, S. S. (2014). Improving entrepreneurs' management skills through entrepreneurship training. *Journal of Commerce & Management Thought*, *5*(3), 459-474. http://dx.doi.org/10.5958/0976-478X.2014.00334.6

Raghunathan, K., Kannan, S., & Quisumbing, A. R. (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. https ://doi.org/10.1111/agec .12510

RBI. (2019). *Report of the expert committee on micro, small and medium enterprises* (p. 01). Reserve Bank of India. https://rbidocs.rbi.org.in/rdocs/Publication Report/Pdfs/ MSMES24062019465CF8CB30594AC29A7A010E8A2A034C.PDF

Rhyne, E., & Otero, M. (1992). Financial services for microenterprises: Principles and institutions. *World Development*, *20*(11), 1561–1571. https://doi.org/10.1016/0305-750X(92)90014-M

Rural development department, Government of Sikkim. (2019). *Sikkim rural livelihood mission*. https://rmdd.sikkim.gov.in/wp-content/uploads/2019/09/SRLM-HCM -PRES ENTATION-28-Aug-Final.pptx

Saha, S., Annear, P., & Pathak, S. (2013). The effect of Self-Help Groups on access to maternal health services: Evidence from rural India. *International Journal for Equity in Health*, *12*(1), 1–9. https://doi.org/10.1186/1475-9276-12-36

Sahu, G. B. (2015). How effective is a self-help group led microfinance programme in empowering women? Evidence from rural India. *Journal of Asian and African Studies*, *50*(5), 542–558. https://doi.org/10.1177/0021909614548239

Satyasai, K. J. S., Sahoo, B. B., & Badajena, S. N. (2014). Self-help groups as drivers of entrepreneurship: Evidence from Karnataka and Odisha states. *Agricultural Economics Research Review*, *27*(conf), 123–133. https://doi.org/10.5958/0974-0279.2014 .00014.7

Say, J. B. (1847). *A Treatise on Political Economy*. Grigg, Elliot & Co.

Schumpeter, J. A. (1934). *The theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle.* Harvard University Press.

Sharma, A., Roy, B., & Chakravorty, D. (2012). Potential of self help groups as an entrepreneur: A case study from Uttar Dinajpur district of West Bengal. *Journal of Social Sciences*, *30*(1), 83–87. https://doi.org/10.1080/09718923.2012.11892 985

Shaw, J. (2004). Microenterprise occupation and poverty reduction in microfinance programs: Evidence from Sri Lanka. *World Development*, *32*(7), 1247–1264. https: //doi.org/10.1016/j.worlddev.2004.01.009

Siddhartha, T., Nambirajan, T., & Ganeshkumar, C. (2019). Production and retailing of self help group products. *Global Business and Economics Review*, *21*(6), 814–835. https:/ /doi.org/10.1504/GBER.2019.102590

Sinha, A., Parida, P. C., & Baurah, P. (2012). The impact of NABARD's self help group-bank linkage programme on poverty and empowerment in India. *Contemporary South Asia*, *20*(4), 487–510. https://doi.org/10.1080/09584935.2012737306

Sinha, P. (2004). Impact of training on first generation entrepreneurs in Tripura. *Indian Journal of Industrial Relations*, *39*(4), 489–504.

Solomon, G. (2004). *Entrepreneurship and the impact of entrepreneurial orientation training on SMMEs in the South African context: A longitudinal approach*. University of the Western Cape.

Suprabha, K. R. (2014). Empowerment of self help groups (SHGs) towards microenterprise development. *Procedia Economics and Finance*, *11*, 410–422. https://doi.org/10.1016/S2212-5671(14)00208-1

Swain, B. R., & Varghese, A. (2014). Evaluating the impact of training in self-help groups in India. *The European Journal of Development Research*, *26*(5), 870–885. https://doi.org/10.1057/ejdr.2014.17

Swain, B. R., & Wallentin, F. Y. (2012). Factors empowering women in Indian self-help group programs. *International Review of Applied Economics*, *26*(4), 425–444. https://doi.org/10.1080/02692171.2011.595398

Swain, B. R., & Wallentin, F. Y. (2016). The impact of microfinance on factors empowering women: Differences in regional and delivery mechanisms in India's SHG programme. *The Journal of Development Studies*, *53*(5), 684–699. https://doi.org/10.1080/00220388.2016.1205732

Swain, R. B. (2012). Differential impact of microfinance delivery mechanism on vulnerability. *Applied Economics Letters*, *19*(8), 721–724. https://doi.org/10.1080/13504851.2011.597716

Swain, R. B., & Floro, M. (2012). Assessing the effect of microfinance on vulnerability and poverty among low income households. *Journal of Development Studies*, *48*(5), 605–618. https://doi.org/10.1080/00220388.2011.615917

Swain, R. B., & Varghese, A. (2010). Being patient with microfinance: The impact of training on Indian self help groups. *Working Paper, No. 2010:22, Uppsala University, Department of Economics, Uppsala,*. http://nbn-resolving.de/urn:nbn:se:uu:diva-138914

Swain, R. B., & Varghese, A. (2013). Delivery mechanisms and impact of microfinance training in indian self-help groups. *Journal of International Development*, *25*(1), 11–21. https://doi.org/10.1002/jid.1817

The World Bank. (2002). *Integrating gender into the World Bank's work: A strategy for action*. The World Bank.

Toma, S.G., Grigore, A.-M., & Marinescu, P. (2014). Economic development and entrepreneurship. *Procedia Economics and Finance*, *8*, 436–443. https:/doi.org/10.1016/S2212-5671(14)00111-7

Tripathy, K. K., & Jain, S. K. (2011). Income impact of micro-enterprise finance: An empirical study on government initiatives in rural India. *International Journal of Rural Management*, *7*(1–2), 5–26. https://doi.org/10.1177/0973005212459824

Wickramasinghe, V., & Fernando, D. (2017). Use of microcredit for household income and consumption smoothing by low income communities. *International Journal of Consumer Studies*, *41*(6), 647–658. https://doi.org/10.1111/ijcs.12378

Yunus, M. (2007). *Creating a world without poverty: Social business and the future of capitalism* (1. ed). PublicAffairs.

Zikmund, W. G., Babin, B. J., Jon C. Carr, & Mitch Griffin. (2010). *Business research methods* (8th ed.). South-Western Cengage Learning.

Appendix A

MICRO-ENTERPRISE DEVELOPMENT THROUGH TRAINING OF SELF-HELP GROUPS IN SIKKIM

Interview Schedule

Respondents Id- Date:

Section 1: Area Details

1	District		3	G.P	
2	Block		4	Village	

Section 2: Household Details

5	Name of Head of Household				10	Caste	GEN	OBC	SC	ST
6	Gender of Head of Household	M	F	T	11	Ethnic Group				
7	Name of informant				12	Religion				
8	Gender of informant	M	F	T	13	Name of SHG				
						Year of joining				
9	Contact No.				14	Training Status	Trained		Untrained	
14.1	Reason for not attending training									

Section 2.1: Asset Holdings and Living Conditions			
15	Do you own the house you live in	Yes	1
		No	2
16	Type of house	Kaccha	1
		Pucca	2
		Semi-Pucca	3
17	Type of roof of the house	Tin	1
		Concrete	2
		Other	98
		Specify:	
18	Type of floor of the house	Kaccha	1
		Pucca	2
		Semi-Pucca	3
19	No. of rooms in the house		
20	Is there a separate kitchen in the house	Yes	1
		No	2

21	Do you own the following assets?	Number
	Plough	
	Land holding	
	Vehicle	
	TV	
	Utensils (Brass)	
	Pressure Cooker	
	Music system	
	Cable connection	
	Do you watch news	
	Watch	
	Mobile phone	
	Others	
Specify:		

No.	Question	Answer		Code
22	What is the main fuel used for cooking? Specify	Polluting	Firewood chip	1
			Coke/Coal	2
			Dung cake	3
			Hay /dried leaves	4
			Gas	5

		Non-Polluting	Kerosene	6
			Other source	98
		Specify:		
23	What is source of potable water?		Tap in house	1
			Govt. provided public tap	2
			Spring (*Dhara)*	3
			Stream (*Kholsa*)	4
			Pond	5
			Community tank	6
			Private tank	7
			Other source	98
		Specify:		
24	What is the major source of lighting?		Electricity	1
			Others	98
		Specify:		
25	Is there a toilet in the house?		Yes	1
			No	2
26	Is there provision for water in the toilet?		Yes	1
			No	2
27	What kind of toilet is there in the house?		Sewer Latrine	1
			Pit latrine	2
			Septic Tank	3
			Temporary latrine	4

		Other	98
		Specify:	
28	Drainage facilities	No drainage	1
		Open kaccha drainage	2
		Open Pucca drainage	3
		Covered kuccha drainage	4
		Covered pucca drainage	5

Member ID	Name	Relation with H/Hold Head	Gender M/F	Age in Years	Years of Schooling	Marital Status		Occupation		
								Main	Subsidiary	
									First	Secondary
1						Y	N			
2						Y	N			
3						Y	N			
4						Y	N			
5						Y	N			
6						Y	N			
7						Y	N			

8						Y	N			
9						Y	N			
10						Y	N			

Section:3 Livestock Ownership

Animal Type	Cow (Desi)	Cow (hybrid)	Female Buffalo	Bullock/Draught Animals	Calf	Female-Goat	Sheep	Ducks	Poultry Hens	Pork	Other
No. Owned											
Used for Consumption/ business											

Section:4 Training Programme Details (For trained only)

1	Whether undergone for any SHG training programme.	Yes		No		
2	If yes, then training is provided by	Government Institution				
		Non-Government institution				
3	Which government institution provided training?	SRLM	RSETI	NERLP	NABARD	other
4	In which year you took training?					

5	You took training for which entrepreneurship programme?			
6	Number of training programme attended?			
7	What is the duration of training?			
8	Do you feel that the duration of training was adequate?			
9	If no what should be the duration?			
10	Who helped to formulate your SHG?			
11	Whether credit facility is provided by training institution?			
12	Whether assistance in saving linkage is provided by training institution?			
13	What are the methods used for training?	Lecture	Group discussion	Brain storming
		Practice	Visits to successful units	case studies
14	Do you feel that different training methods listed above to be relevant and of good quality?			
15	Whether adequate information was given before starting the program?			
16	Whether selection of training programme was done on basis of demand?			
17	Whether any guidance services were provided after the training?			
18	Did the program encourage the exchange of the information and expression of idea?			
19	Did the programme cover the topics which you needed?			
20	Was the objective of attaining the program achieved?			
21	Please rate the following	Write 1 for good, 2 for average and 3 for poor		

21.1	Training room			
21.2	Seating arrangement			
21.3	Times Schedule			
21.4	Punctuality			
21.5	Clarity of objective			
21.6	Training workbook			
21.7	Food			
21.8	Trainers			
21.9	Others (please specify)			
22	Who is the resource persons invited for training?	Successful entrepreneur	Market Expert	Bankers
		NGO staff	Industrial expert	Others
23	Whether the trainers had sufficient knowledge?			
24	Whether the trainers communicated well?			
25	In which language training was given?			
26	Whether the trainers were open, sincere and fair to all?			

Section:5 Entrepreneurship Skills		Very bad (1)	Bad (2)	Indifferent (3)	Good (4)	Very good (5)
1	To what extent you rank your technical knowhow in the field of endeavour?					
2	To what extent you rank your knowledge of legal rules?					
3	To what extent you rank your ability to manage financial record?					
4	To what extent you rank your ability to procure investment for the enterprise?					

5	To what extent you rank your ability to advertise and sell the product?					
6	To what extent you rank your competency in managing day to day business processes?					
7	To what extent you rank your ability to use technology for business enhancement?					
8	To what extent you rank your strength of connecting with people in the field of business?					
9	To what extent you rank your ability to use current partnership for mutual benefit?					
10	To what extent you rank your ability to utilise resources?					
11	How much do you rank yourself for establishing and sustaining reputation?					
12	To what extent you rank your proficiency in building effective connections with community?					
13	To what extent you rank your ability to be responsible for the decisions?					
14	To what extent you rank your ability to team up with others for business purpose?					
15	To what extent you rank your ability to communicate?					
16	To what extent you rank your workflow management skill?					
17	To what extent you rank your decision-making ability?					
18	To what extent you rank your ability to resolve clashes constructively?					
19	To what extent you rank your disciplined and productive conduct?					
20	To what extent you rank your troubleshooting ability?					
21	To what extent you rank your perseverance ability?					
22	Rate your enthusiasm and charisma.					

23	To what extent you rank your adaptable nature?					
24	To what extent you rank your ability learn and deploy knowledge?					
25	To what extent you rank your creative thinking ability?					
26	To what extent you rank your ability to implement new ideas?					
27	To what extent you rank your leadership skills?					
28	To what extent you rank your ability to overcome setbacks?					
29	To what extent you rank your resourcefulness?					
30	To what extent you rank your self-realisation?					

Section:6 Details of Microenterprise

1	What are the activities that you were doing before training?				
2	Do you operate any microenterprise?	Yes		No	
3	If No, reason for not opting for micro-enterprise activity?	Financial problem	lack of skills	Lack of apartment to open enterprise	shortage of raw materials
		no market to sell finished products	family's restriction	no time	others
4	Which microenterprise activity you have opted for?				
5	Scale of production (Output)				
6	Sale amount				
7	Per unit price				

	What was the reason behind opting for micro-enterprise?	Financial support	Time pass	own interest	others
8	From where did you get inspiration to get involved in the above-mentioned micro-enterprise?	SHG training programme	Peers' success	Family business	others
9	From where did you gather knowledge which is necessary for above mentioned micro-enterprise?	SHG training	Own knowledge	Friends provided knowledge	Family provided knowledge
		others			
10	How much capital you have invested for microenterprise?				
11	What was the source of starting capital?	Own capital	loan from SHG	loan from government institution	loan from NGO
		money lenders	loan from family members	others	
12	If loan is taken from government institution then which government institution is it?				

LOAN

13	What is the amount of loan taken?						
14	How many times you have taken loan?						
15	What is the total loan amount?						
16	Please indicate your last loan amount?						
17	How much is rate of interest?						
18	Are you regularly paying installment and interest?						
18.1	Reason for taking loan						
19	**Inputs used for microenterprise**						
20	Fixed Inputs	21	Fixed cost	22	Source of finance	23	Longevity

24	Variable inputs	25	Variable Cost	26	Amount brought per month	27	Source of finance

28	Distance between the micro-enterprise and market from where the fixed inputs has been brought				
29	Distance between the micro-enterprise and market from where the variable inputs has been brought				
30	Do you have positive or negative working capital (cash, inventory, account receivable, account payable, portion of dept due over one year)				
31	What is satisfaction level related to your micro-enterprise	Very bad	Bad	Good	very good
32	Cash flow (Sale on cash or credit)	Weekly	fortnightly	monthly	other
33	Distance of micro-enterprise from market where finished products are sold				
34	Do you need any transport facility to carry goods from production unit to market?	Yes		No	
35	If yes what is the cost?				
36	Number of labour used?	Family members		Non-family members	
37	How much is their wage?				

38	The micro-enterprise opted by you is seasonal or runs throughout the year?		
39	Does your product have any brand name?		
40	Who is the owner of the enterprise?	Single owner	Group
41	If it is group ownership, then how many partners are there?		
42	What is your monthly profit?		
43	Amount of monthly savings		
44	Is there any growth in number of customers?	Yes	No
45	Aim of your enterprise?	Output maximization	Profit maximization
46	Are you receiving any subsidy?		

Section:7 Details Regarding SHG Activities

1	Did you attend regular meetings?	Yes	No
2	Have you done regular savings?	Yes	No
3	Are you engaged in regular inter loaning?	Yes	No
4	Do you repay your loan on time?	Yes	No
5	Are your account books up-to-date?	Yes	No
6	Whether you have linked your credit with bank?	Yes	No
7	Whether you have linked your saving with bank?	Yes	No
8	From where does SHG gets money to give loan?		

List of Publications and Presentations

List of Publications

1. A paper titled "**Factors influencing micro-entrepreneurship among women SHG members of Sikkim: A propensity score matching approach**" published in *International Journal of Social Economics* on 17th October 2023, Vol. ahead of print, *No. ahead of print*, ISSN:0306-8293, DOI: https://doi.org/10.1108/IJSE-01-2023-0070 (Scopus indexed)

2. A paper titled **"Micro-enterprise adoption among women self help group members of Sikkim: An exploratory study"** published in *Jharkhand Journal of Development and Management Studies* in September, 2022, Vol. *20*, *No. (3)*, pp. 9433–9451, ISSN: 0973-8444. (UGC-Care List)

3. A paper titled **"Agro-enterprise development through self help groups: Empirical insights from Sikkim"** published in December 2023 in *Indian Journal of Hill Farming*, Vol.*36, No.* (2), pp.132–139, ISSN: 0970-6429. (UGC-Care List)

4. A paper titled **"Forecasting India's Total Exports: An Application of Univariate Arima Model"** published in December 2018 in *Journal of International Economics*, Vol.*9, No.* (2), pp. 60–68, ISSN: *0976-0792.* (Peer Reviewed)

List of Presentations

1. A paper titled "Factors Influencing Graduation of Women SHG Members to Micro-entrepreneurs" was presented in International Conference on Economics to Earthonomics: Shifting Paradigms, Policy Paralysis, and Worsening Sustainability, March 9-11, 2022. Organised by Department of Economics, Bhagat Phool Singh Women University, Sonepat, India (First State Women University in North India)

2. A paper titled Determinants of "Micro-Entrepreneurship Among Women SHG Members: Insights from an Empirical Study in Sikkim" was presented in 5th International Conference on Sustainable Development Goals: Harnessing Innovation, Technology and Society 5.0" on 31st March 2022–1st April 2022, Organised by- Amity School of Economics Amity University, Uttar Pradesh, Noida

3. A paper titled "Factors Influencing Participation of Women SHG Members in Livelihood Training Program" was presented in Two Day National Seminar on "Socio-Economic Development of Women through Self-Help Groups in India" 28th–29th March 2022, Sponsored by ICSSR-SRC Organized by Faculty of Social Sciences, Babu Jagjivan Ram Government Degree College, Narayanaguda, Hyderabad.

4. A paper titled "Impact of Microfinance on Gross State Domestic Product with Reference to North Eastern States of India: A Panel Data Analysis" has been presented in 56th Annual Conference of The Indian Econometric Society (TIES) during 08–10 January 2020, organized by School of Economics, Madurai Kamraj University, Tamil Nadu, India.