CHAPTER 1

Introduction

1.1 Introduction

Micro finance is a vital tool to cater to income and level of living of the people both in urban and rural area. Experiments and experiences of Micro finance are shared by many authors in general and Prof. Mohammad Yunus in particular in Bangladesh. Microfinance has touched upon several activities of human life particularly in developing countries of Asia and Africa. An effort is made in the present research to show its role, functioning, progress and impact. For this, the present work is divided into seven chapters. The first chapter is divided into four parts: the first one is to examine the background and conceptual clarity and basic philosophy on Micro finance, whereas the second one to show objectives, scope, limitations and hypotheses of the study. The third part of this chapter shows methodology applied to measure financial effectiveness and last section deals with chapter outline of the study.

Section-I

1.1.1 Background of the Study

The growth and progress of any Nation cannot be confined with respect to its economic, social and technology advancement but somehow it also considers standard of living of the people in a country. Progress of Nation will occur with the active participation and involvement of the people in decision making process. People relish quality of life when they are provided various facilities like banking, education, healthy social environment, good employment opportunities, proper medical care, basic needs facilities in
terms of food, clothing and housing (roti, kapda aur makan) etc. Poverty has global presence and varied genesis and scope. It does not mean only income poverty but it also covers lack of human self-respect produced by exposure to social and cultural differences. India is a country where still 21.9% people are considered poor. As such, finance is lubricants of economic growth process. Financial inclusion and Micro finance play a catalytic role for income and employment generation with addition to value addition in economic system. In this regard, an experiments and experiences of Micro finance is noteworthy, considering a case of Bangladesh. Hence, engineering of Micro finance economic activities is followed by Ithopia, Nigeria, Indonesia and other developing countries. This research specifically addresses Micro finance as a source of inclusive finance for farmers, small artisans and other economics activities for urban and rural areas in India in general and Gujarat in particular. An attempt is made here to view impact of Microfinance in Gandhinagar, Mehsana, Sabarkantha and Ahmedabad districts in terms of poverty eradication.

Banking structure of India is considered as one of the largest banking system in the world, could not attract majority of the poor in India. 70% of total populations living in rural areas exhibited only 30% bank deposits. Government took many initiatives by establishing regional rural bank and co-operative banks to cater the financial requirements of the rural poor. But that initiative did not succeeded (Lakshmanan, 2008)\(^1\). Due to global influence of poverty, India highlighted a link between accessibility to finance and poverty reduction despite of various plans initiated by the governments after independence. Therefore, improvements in finance accessibility to the rural people, most of them are living in rural areas encouraged the establishment of rural co-operative banks in 1950’s. It is followed by Nationalization of commercial bank, which took place in 1969 (Basu and Srivastava, 2005)\(^2\). Financial infrastructure were developed, when Government of India adopted Nationalisation strategy. Consequently, establishment of many banks could possible especially nationalisation of the Imperial Bank of India in 1955, 14 major commercial banks in 1969 and another 6 commercial banks in 1980. Besides, the establishment of Regional Rural bank Banks (RRBs) in 1975 also supported in the development of wide financial infrastructure for spreading the banking services in remote areas. Distribution of banking services in the form of extending credit to rural people involved various commercial banks, regional rural banks and co-operative banks (NABARD)\(^3\).
This fact cannot be challenged that speedy development in the form of establishment of bank branches happened after 1969, when India initiated the Nationalization of its banking area. Nationalization of banks programme was started to meet many objectives, which included the change of specific banking to mass banking and to figure out those areas, which were ignored by them such as agriculture and small scale industries (Singh, 2005). Imai, Arun, and Annim (2010) highlighted that formal financial institutions failed to meet the financial credit need of the rural people in India in spite of large banking system. There are various reasons for this negligence by the banks. However, these loan are not advantageous for banks due to lack of economies of scale. Therefore, a need was felt to introduce an innovative programme and delivery mechanism that must be flexible in nature, offer without any security and essentially cater to credit needs of the poor people. However, similar views were also observed by Ingale, Ingale, and Soumya (2013), who mentioned that even with impressive growth in the banking institutions capabilities to reach the poor, the rural poor people besides the formal source of credit remained dependent on another source of credit in informal way of in the past. Formal banks have also encountered several hitches in extending credit smoothly to many borrowers, whose financial needs are considerably less, made frequently and their incapacity to offer any security. Moreover, clumsy process and views of banks create a gap in fulfilling the financial requirements of the rural poor people having tiny and skilled based plan of earning.

1.1.2 Conceptual Clarity and Basic Philosophy of Micro Finance:

Microfinance is the gateway in order to develop the abilities of the poor people, who were perceived as unbankable by the formal banks and various financial institutions. Poor people will also be capable if they are provided financial literacy, which will enable them for self-economic activities along with different financial services such as saving, credit and insurance. Usually, the credit extended by microfinance institutions caters to population having low income. Microfinance institutions facilitate the poor people by extending credit to meet their different purposes, such as to fulfill the basic necessities of life and for starting business activities. Sometimes, Micro credit is also considered as an option against the credit provided by money lenders.
Armendariz de Aghion and Morduch (2005)\(^7\) stated that Microfinance is considered as a collection of banking practices built around small loans (typically without collateral) and accepting tiny savings deposits”.

Mohammad Yunus is pioneer to express proper engineering in economic activities in Bangladesh. He is a leader of World Bank to “BRAC” (Bangladesh Rural Advancement Committee) which is considered as the best NGO in the world. The BRAC has reshaped several economic activities including employment to poor society in Bangladesh in addition to several rural activities. Though, microfinance institutions focus primarily on reducing poverty through improved access to credit and financial services. They are also considered as a better alternative for poor people to meet their financial needs for the maintenance of their lives.

The United Nations (UN) declared the year 2005 “The UN Year of Micro-credit”. In the year 2006, Mr. Mohammed Yunus and the Grameen Bank Bangladesh, were awarded the Nobel Peace Prize “for their efforts to create economic and social development from below”. The United Nations (UN) has agreed on 8 Millennium Development Goals (MDGs). Microfinance is expected to have positive effect on 6 out of 8 MDGs viz. Eradication extreme poverty and hunger; Achieve universal primary education; Promote gender equality and Women empowerment; Reduce child mortality; Improve maternal health and Combat HIV/AIDS, malaria, and other diseases (IIBF)\(^8\).

In India, Microfinance formally started with the nationalization of Commercial Banks in 1969. Later on, it got strengthened after establishment of Regional Rural Bank (RRBs) in 1975 and gained impetus on introduction of Integrated Rural Development Program (IRDP) and other poverty alleviation program in 1980, which centered on individuals and not on group. These revealed many deficiencies like gender inequalities, lack of mutual trust, high transaction cost, etc. Thus, to make it more effective, group approach towards microfinance was conceived and its delivery through NGOs and other voluntary groups started. The earliest step in microfinance in India by NGOs may be traced back to the initiative by Self Employed Women's Association (SEWA) at Ahmadabad rendering banking services to hawkers, vendors, etc. Since then a large number of NGOs entered microfinance market sponsoring loan to poor and encouraged. In India, pioneering effort was formally started by National Bank for Agriculture and Rural Development (NABARD) SHG Bank Linkage in 1991-92. The latest type of microfinance industries in
India are Self Help Groups (SHGs). SHGs are fastest growing and most cost effective microfinance initiative in the world. The services of Microfinance in India are distributed through two different channels: (a) Microfinance Institutions viz either functioning in NGOs form or Non- Banking Financing Companies (NBFCs); and (b) Self- Help Group – Bank linkage.

The concept of microfinance has emerged as revolution for the economic and social development of rural people in India. It is helpful in poverty eradication, economic empowerment for women and inclusive growth. Ghosh (2012)\(^9\) indicated fast boost in the number of both the form of MFIs i.e. profit and non-profit was as a matter of fact quickly followed by crises in copious of the same economically developing country that were erstwhile seen as the close places accomplishment, in the usual way of doing thing of roughly financial bubbles that burst. As a result, many microfinance institutions were collapsed in different countries like Bolivia, Morocco, Pakistan, Mexico, Nicaragua, India and Bosnia. Latifee (2006)\(^{10}\) highlighted that percentage outreach of MFIs to the poor household is not so impressive in spite of tremendously growth of microfinance across the globe in terms of number of MFIs and its outreach. It is observed 38% in Asia, 8.5% in Africa and the Middle East, 11.6% in Latin America and the Caribbean and 1.7% in Europe. It suggested that many more people should come under the umbrella of microfinance services and avail the benefit by removing the vicious circle of poverty. Asia is the continent of origin land of the largest location of MFIs and MFI outreach. Millions of poor people remained unserved by the formal and informal financial institutions despite of the functional of many microfinance institutions among popular countries like China, India, Indonesia and Pakistan in Asia. In India, microfinance outreach to the poor people is observed about 10 to 12 per cent with the involvement of SHGs, NGO MFIs, NBFC, Commercial Banks and Co-operatives. The growth of microfinance has remained slow in Asian countries except Bangladesh. In India comparatively, nearly three-fourths of the microfinance customers are found mostly in four southern states, namely Andhra Pradesh, Tamil Nadu, Karnataka and Kerala. Microfinance sector have not served significantly the other states of India including Northern and North states.

Andhra Pradesh is known as the motherland of Indian microfinance, but five of India's largest microfinance institutions (SKS, BASIX, Spandana, Share and Asmitha) were not only headquartered in AP but also a substantial exposure to the state . There was a major ideological clash between for-profit MFIs and the state SHG program. The first tension
arose in 2006, when the government crushed two large MFIs - Share and Spandana and closed about 50 branches in the Krishna district of AP. The accusations against these MFIs were that they were charging usurious interest rates, following unethical practices in the recovery and poaching of SHG clients sponsored by the state (Sriram, 2012).11

A committee led by Y.H. Malegam is made by Reserve Bank of India (RBI)12 in 2011 to study the various issues and concerns in Microfinance sector. To bring transparency in the system, the committee has suggested 90 percent of MFIs total assets should be in the form of qualifying assets. Qualifying assets shall mean a loan which should be given to borrower, whose annual income does not cross Rs.50,000 and the amount of loan should not go beyond Rs.25,000. The committee also suggested to incorporate the margin limit for outstanding loan portfolio of MFIs i.e. 10 percent for those MFIs, which have an outstanding loan portfolio at the beginning of the year of 100 crores and 12 percent for those MFIs, which have an outstanding loan portfolio at the beginning of the year of an amount not exceeding 100 crores. The committee also mentioned a limit of 24 percent per annum on interest to be charged on the individual loans. The committee also suggested proper monitoring on the part of the regulator to see that MFIs are maintaining proper code of conduct, have appropriate recruitment systems, training and supervision of field staff to in order to protect the MFIs client against the malpractices embedded in the system like coercive means of recovery for loan. Still, many MFIs are charging higher than 24% of interest rate from the borrowers.

Major focus of microfinance programme is to fulfill the needs of underprivileged classes which are not properly managed by the formal financial institutions. Through microfinance, different types of services both financial and non-financial are extended to poor people having low income or not engaged in any employment.

Arun, Imai, and Sinha (2006)13 explored a study to analyse the effect of microfinance institutions on poverty of households in India. The study discussed that poverty has always been a severe issue for policymakers in India. The study has discussed some of the factors that caused poverty. Growth is determined by keeping a focus in limited sector in urban areas such as industry and service sector and is erratically spread within the urban and between urban and rural area. The benefits arising from economic growth is very low and restricted in those places, where economic growth is very high because of social factors. The study also highlighted that association between rural and urban are not so strong
caused by geographical aspects. The study also observed a reduction in poverty. Poverty head count ratio was 35.3 per cent in 2000 considering the US 1$ a day poverty line as compare to 42.3 per cent in 1993. Therefore, the reduction of poverty has always been a herculean task for the country.

Efforts have been made by many ruling parties in India to provide financial support through different government schemes to meet the diverse needs of the poor households. But, different research studies has observed and discussed the inadequacy of all these schemes. Poor people are not having sufficient access to the conventional financial facilities and still they are approaching the money lenders and other means for funding support to meet their household and credit needs. Around the globe, various studies have been conducted on poverty alleviation, income and women empowerment in this regard.

**Ghosh (2005)** discussed the development of the Microfinance revolution in India. It is considered as a powerful tool for poverty alleviation and women empowerment. As formal financial institutions failed in providing funding support to poor people, Microfinance delivered, but the outreach is too small. **Jayasheela, Dinesha, and Hans (2008)** explored a study to measure the role of microfinance in empowerment of people in India. The study mentioned the huge prospects for the microfinance institutions to cater the increased demand for rural people by extending microfinance loan as a result of weak financing of traditional banking system. **Saxena (2007)** discussed the growing concept of poverty in India and studied the performance of selected anti-poverty programmes between 1997-1998 and 2005. The study aimed to identify the outreach extent of various anti-poverty programmes to the target poor households. The study reviewed the different programmes like Integrated Rural Development Programme (IRDP)/ Swarnjayanti Gram Swarozgar Yojna (SGSY); Jawahar Rozgar Yojna (JRY)/Employment Assurance Scheme (EAS)/ Sampoorna Grameen Rozgar Yojna (SGRY) and National Food for Work (NFFW); Indira Awas Yojna (IAY); National Social Assistance Programme (NSAP),especially pensions; Drought Prone Area Programme (DPAP), Desert Prone Programme (DPP) and Integrated Waste lands Development Programme (IWDP) etc. Introducing the various programmes and schemes with little variation will not serve the purpose to alleviate poverty in India. And hence researcher mentioned that efforts are required to strengthen the governance at the district level. Further, the success of different poverty schemes are very much depend on the right selection of poor household, transparent system and supervision mechanism.
Once again, a need was felt to introduce such a novel model for extending credit, which must recognise the financial needs of neglected poor people. Micro credit must be extended without security and flexible enough to incorporate the varied needs of poor people. It was also observed that in extending credit to poor people, most of the poor women were not given due attention. No poverty programme would succeed if women are not considered. They are also an important element of our society. No one can ignore them. Efforts which are taken in the form of various schemes and programme to beat poverty would definitely fail if women are not given enough opportunities to alleviate their economic and social status. This is the reason United Nation has considered poverty eradication and women empowerment in eight millennium development goals.

It is claimed by Microfinance Institutions that they provide reasonable opportunities to poor by giving them access to capital so that they can change their life. Many countries around the globe have conducted impact studies of microfinance particularly in countries like India, Bangladesh, and Pakistan. However, some countries of South Asia and Africa have also measured the impact of microfinance. The various studies to measure the impact of microfinance conducted in the past provide its outcome on the life beneficiaries of microfinance. The effect is found both at individual and household level as well as functioning of MFIs. It consisted of income level, employment status, participation of women in decision making, availability of different amenities like house, food, drinking water, better health services and education etc. Among available literature on microfinance shows different research works which determine the positive impact on the beneficiaries life to improve their economic status and lessening poverty.

Studies explored by Chowdhury, Ghosh, & Wright (2002)\textsuperscript{17} to examine the impact of micro-credit on poverty in Bangladesh; Hossain (1988)\textsuperscript{18} impact assessment study of Grameen Bank’s microfinance programme in Bangladesh; Chen and Snodgrass (2001)\textsuperscript{19} study to measure the impact of SEWA bank beneficiaries in Ahmedabad and socio economic study of PRADAN’s microfinance programme in Jharkhand by Kabeer and Noponen (2005)\textsuperscript{20} highlighted that these programmes have shown positive impact on the life of the beneficiaries. The programme beneficiaries have been able to improve their economic status by availing employment opportunities, increase in income and improved standard of living. Similarly, an impact study is conducted by Puhazhendhi and Badatya (2002)\textsuperscript{21} in Eastern India by covering Orissa, Jharkhand & Chattisgarh to measure the impact of microfinance through SHG bank linkage programme on the SHG households.
revealed improvement in social empowerment of women in terms of self-confidence, involvement in decision making and better communication. Another study explored by Hashemi, Schuler, and Riley (1996) to measure the impact of credit programs in Bangladesh to poor women revealed a more improvement in women empowerment. However, in another study explored by Develtere and Huybrechts (2002) to measure the impact of credit programs in Bangladesh on rural people revealed that most of the poorest people have not been able participate in micro-credit programme, largely due to lack of education and extension programme to educate them to avail the credit.

In the light of above discussion, it is quite evident that different studies provided diverse thought on impact assessment of microfinance. Therefore, it is required to study further the impact assessment of microfinance to understand its working and execution process.

The concept of microfinance is unique and is observed alternative way for supporting the poor. Through this method, various services are provided to needy poor people by providing them financial assistance and particularly enabling women to become more empowerment. Still, there are many issues which need to be discussed such as outreach of microfinance institutions to the poor people; its role in reduction of poverty, income improvement and income inequality and how it is helpful in empowering women. Hence, an attempt is made to study the financial effectiveness and impact of microfinance in Gujarat by considering these objectives discussed in next section.

Section II

1.2 Objectives, Hypotheses, Limitations and Scope of the study

This section discusses the objectives, hypotheses, limitations and scope of the study.

1.2.1 Objectives of the Study

The aim of present research is to measure the financial effectiveness and impact of Microfinance in Gujarat on the beneficiaries of MFIs in terms of poverty alleviation, income inequality and empowerment of women. However, the particular objectives of the present research study are as follows:
i) To examine the impact of microfinance on income and income inequality among the beneficiaries.

ii) To examine the impact of microfinance on poverty alleviation among the beneficiaries.

iii) To assess the role of microfinance in empowering the women beneficiaries.

iv) To examine the trends and patterns of Microfinance in India vis-à-vis Gujarat.

1.2.2 Hypotheses

Following hypotheses are established to meet the objectives of the study.

a. Microfinance increases the level of income and reduces income inequalities among the beneficiaries.

H₀: There is no significant difference in average income of those who availed Micro Finance loan as against those who did not avail i.e. μ₁ = μ₂

H₁: There is significant difference in average income of those who availed Micro Finance loan as against those who did not avail i.e. μ₁ > μ₂

H₀: There is no significant difference in average income due to availment of Micro Finance loan i.e. D = 0 (where D = μ₁ - μ₂)

H₂: There is significant difference in average income due to availment of Micro Finance loan i.e. D < 0 (Where D = μ₁ - μ₂)

As far as reduction in income inequality is concerned Lorenz curve and Gini Coefficient are worked out to examine the impact of microfinance availment.

b. Microfinance reduces the level of poverty among the beneficiaries.

In order to understand a reduction in level of poverty-three poverty measurement Indexes namely Head Count Index, Poverty Gap Index and Square Poverty Gap Index are incorporated. Further to understand the impact of poverty on beneficiaries, four independent variables are selected, Family income, Highest Level of Education in the Family, Amount of loan used, and family size.

H₀: Family Income has no significant impact on Poverty Index

H₃: Family Income has a significant impact on Poverty Index
c. **Availment of microfinance loan leads to women empowerment**

A multiple linear regression is used to statistically measure the impact of the determinants viz. such as Age of the respondent, Education of the respondent, Amount of Loan, Contribution in Family Income, Participation in Household Decision Making, Freedom of Movement and Respondent Income, on the level of Overall Women Empowerment Index.  

**H0**: Availment of Microfinance and Empowerment of Women are independent of Each other  
**H7**: Availment of Microfinance and Empowerment of Women are not independent of Each other  
**H0**: Availment of Microfinance and employment are independent of Each other  
**H5**: Availment of Microfinance and employment are not independent of Each other  
**H6**: Availment of Microfinance and Participation in Financial Decision Making are independent of Each other  
**H9**: Availment of Microfinance and Participation in Financial Decision Making are not independent of Each other  
**H0**: Availment of Microfinance and Level of Mobility are independent of Each other  
**H10**: Availment of Microfinance and Level of Mobility are not independent of Each other  
**H0**: Age has no significant impact on Women Empowerment  
**H11**: Age has a significant impact on Women Empowerment  
**H0**: Education has no significant impact on Women Empowerment  
**H12**: Education has a significant impact on Women Empowerment  
**H0**: Amount of Loan has no significant impact on Women Empowerment  
**H13**: Amount of Loan has a significant impact on Women Empowerment  
**H0**: Contribution in Household Income has no significant impact on Women Empowerment  
**H14**: Contribution in Household Income has a significant impact on Women Empowerment  
**H0**: Participation in Household Decision Making has no significant impact on Women Empowerment  
**H15**: Participation in Household Decision Making has a significant impact on Women Empowerment
H_{15}: Participation in Household Decision Making has a significant impact on Women Empowerment

H_{0}: Freedom of Movement has no significant impact on Women Empowerment

H_{16}: Freedom of Movement has a significant impact on Women Empowerment

H_{0}: Respondent Income has no significant impact on Women Empowerment

H_{17}: Respondent Income has a significant impact on Women Empowerment

1.2.3 Scope of the Study

There is requirement for microfinance since rural people in India needs some means of finance to cope up with poverty, increment in income and obtaining equipment and other input resources for agricultural purpose. As such present study is focused on poverty in rural areas and impact assessment is undertaken with respect to women beneficiaries of SEWA Bank. Further, there is ample scope for researcher to contribute their important findings in this area by covering other microfinance institutions. An impact study can be explored by considering the urban population as a sample. A comparative study of urban and rural poverty can also be undertaken. In present research, only those indicators have been incorporated which are suggested by Dr. P. L. Sanjeev Reddy in BPL census of 2002, the ministry of Rural Development. So there is a further scope for researcher to include more variables. In present research responses are collected from SEWA bank beneficiaries in four districts. So there is more scope for researcher to include more districts in their study.

In view of the above discussion, it becomes imperative to study the financial effectiveness of Microfinance at micro level and measure its impact in Gujarat so that maximum people would be benefitted.

1.2.4 Limitation of the Study

The present study is focused on financial effectiveness and impact of Microfinance in Gujarat. As a case study SEWA bank members are selected to study the financial effectiveness and impact of microfinance. In this respect the study is limited to four district of Gujarat. SEWA bank is women oriented. So in present study the impact assessment is limited to only women beneficiaries. Moreover, the study has covered poverty indicators suggested by Dr. P. L. Sanjeev Reddy in BPL census of 2002, the Ministry of Rural Development to assess the impact of microfinance on poverty.
CHAPTER-1 Introduction

Section-III

1.3 Research Methodology

The present study focuses on Financial effectiveness and impact of Microfinance in Gujarat in terms of poverty, income inequality and women empowerment. Case study approach is considered to reveal the financial effectiveness and impact of Microfinance in Gujarat in terms of poverty alleviation, Income inequality and Women Empowerment. Primary data are collected from by taking the samples from SEWA bank members and impact is measured on those respondents who have availed loan i.e. hence forth called beneficiaries. Non-beneficiaries are those members, who are eligible for microfinance loan, and have formed SHGs but did not get a loan up to time of survey, i.e. April 2015 to March 2016. As per Reserve Bank of India (2011) guidelines and followed by NABARD, SHGs receive bank loans only after the active existence of the groups for approximately six months after the date of their creation.

1.3.1. About SEWA

SEWA\textsuperscript{25}: SEWA (Self Employed Women’s Association) is group of self-employed women which was created in 1972 as a registered trade union in Gujarat. SEWA main objective was to strengthening its members bargaining power to improve income, employment and access to social security.

SEWA Bank\textsuperscript{25}: A small group of poor self-employed women living in Ahmedabad, who were members of Self Employed Women's Association (SEWA) a trade union of unorganized sector women workers, realized a need for "PROMOTING" THEIR OWN Financial Institution. SEWA Bank (Shri Mahila Sewa Sahakari Bank Ltd.) was established in 1974 as an urban Co-operative bank and considered the first Micro-finance Institution in India. SEWA bank, being a pioneer financial institution has been doing a lot of work for empowerment of women and it enjoys a great reputation in India and abroad. It has been extending microfinance to individual beneficiaries as well as to SHGs.

1.3.2 Area of Study

Since study is undertaken for SEWA bank members and their main concentration in Ahmedabad and surrounding districts. Therefore, Ahmedabad and surrounding districts are considered for the purpose of study.
1.3.3 Research Design and Sampling Technique

The present study is descriptive and analytical in nature. As discussed, SEWA bank mainly targeting Ahmedabad and surrounding districts. Therefore, four districts namely Ahmedabad, Gandhinagar, Mehsana and Sabarkantha are selected randomly for the purpose of study. In each districts there are large numbers of villages and every villages has SEWA bank beneficiaries. Five villages are selected at random from each district. From each village a certain number of SEWA bank members (beneficiaries and non-beneficiaries) are selected. Beneficiaries are the members who have availed loan from SEWA bank and non-beneficiaries are those who did not availed loan from SEWA bank. Out of 20 villages in all four districts; a total of 179 self-help group are selected. Six to seven respondents are randomly selected from each self-help group. From each district 260 beneficiaries and 260 non-beneficiaries are included as a sample size. In a way a total of 1,040 respondents including 520 beneficiaries and 520 non-beneficiaries are covered in this study. Details of sample are presented in Table-1.1. First of all a pilot study comprise of 260 members, 130 each beneficiaries and non-beneficiaries has been conducted to validate the questionnaire. To measure the reliability Cronbach alpha is the most popular method. A test result of Cronbach Alpha is found 0.827 which is above 0.7 which indicates the reliability of the data.

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<td>Total</td>
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<td></td>
<td>179</td>
<td>179</td>
</tr>
</tbody>
</table>

Source: SEWA Bank
Note: * B= Beneficiaries; ** NB = Non-Beneficiaries
1.3.4 Data Collection

Primarily the study is survey based. Primary data are collected from SEWA bank respondents through structured questionnaire as shown in Appendix-A. The questionnaire has covered demographic profile of the respondents such as age, religion, marriage status, education level, income level, occupation and average family size. The study has also covered poverty measurement indicators as shown in Appendix-B to study the financial effectiveness and impact of microfinance on poverty. Further, the study has also included different indicators of women empowerment in various domains to study the impact of microfinance on women empowerment. These indicators are presented in Appendix-C.

1.3. 5 Analysis of Data

Primary data are checked, modified and cautiously analysed after collecting it through field survey of sample respondents of SEWA bank. To concise the data, percentage and average methods are applied. The results and findings of the present work are shown with the support of tables and graphs. Various statistical tools and techniques like t-test, Chi- square test, multiple linear regression analysis, and co-efficient of determination ($R^2$) are considered. Besides that poverty measurement indexes as suggested by World Bank, Income inequality measures such as Lorenz curve, and Gini coefficient etc. are incorporated to measure the impact of microfinance. The study has also included Computer software like Microsoft-Excel 2010 and SPSS 20.0 to facilitate the study. Different indicators, tools and techniques incorporated in the study are discussed below:

1.3.5.1 Poverty Measurement Indexes:

In the present study, three poverty measurement indices are included. These indexes are suggested by Coudouel, Hentschel, and Wodon (2002)$^{26}$ and World Bank Institute (2005)$^{27}$.

i. Headcount index (Incidence of Poverty)

ii. Poverty gap and Poverty Gap Index (Depth of Poverty)

iii. Squared poverty gap index (Severity of Poverty)
(i) **Headcount index**

Most widely-used measure is the headcount index. It explains the share of the population whose income is below the poverty line is considered as poor, often denoted by \( P_0 \). Formally it is calculated as the formula given below:

\[
Po = \frac{Np}{N}
\]

Where \( Np \) is the number of poor and \( N \) is the total sample population.

\[
P_0 = \frac{1}{N} \sum_{i=1}^{N} I(y_i < z)
\]

Here, \( I(.) \) is an indicator function;

\( Y_i = \text{Actual income of } i^{\text{th}} \text{ household} \);

\( Z = \text{Poverty Line} \)

\( N \) is the total sample population.

Here, \( I(.) \) is an indicator function that takes on a value of 1 if the bracketed expression is true, and 0 otherwise. So if income \( (y_i) \) is less than the poverty line \( (z) \), then \( I(.) \) equal to 1 and the household would be counted as poor.

(ii) **Poverty gap index (Depth of poverty)**

A reasonably popular measure of poverty is the poverty gap index, which adds up the extent to which individuals on average fall below the poverty line, and expresses it as a percentage of the poverty line. More precisely, poverty line \( (z) \) is compare with the actual income \( (y_i) \) of the poor households if poverty line is observed less than the actual income of the poor households then poverty gap \( (G_i) \) is considered to be zero.

\[
G_i = (z - y_i) I(y_i < z)
\]

\[
P_l = \frac{1}{N} \sum_{i=1}^{N} \frac{G_i}{z}
\]

(iii) **Squared poverty gap (“poverty severity”) index**

To construct a measure of poverty that takes into account inequality among the poor, some researchers use the squared poverty gap index. This is simply a weighted sum of poverty gaps (as a proportion of the poverty line), where the weights are the proportionate poverty gaps themselves. Hence, by squaring the poverty gap index, the measure implicitly puts more weight on observations that fall well below the poverty line. Formally:
1.3.5.2 Poverty Line

The study has considered the recommendation of Dr. C. Rangarajan committee report (2014)\(^{(28)}\) in orders to create poverty line. According to his report, National poverty line is estimated at Rs.972 per capita per month in rural areas and Rs. 1,407 per capita per month in urban areas. For a family of five, the all Indian poverty line is terms of consumption expenditure would amount to about Rs.4,860 in rural and Rs.7,035 per month in urban areas. However, for Gujarat poverty line is estimated at Rs.1,102.83 per capita per month in rural areas and Rs.1,507.06 per capita per month is fixed in urban areas. For a family of five in terms of monthly consumption expenditure, for rural area it is estimated at Rs. 5,514.15 and Rs.7,535.30 for urban areas. Since, responses are taken from rural respondents in rural areas. So poverty line is fixed at Rs. 5,500 (rounded off).

1.3.5.3 Poverty Indicators

The study has identified 10 score based socio economic indicators which are similar to the 13 indicators\(^{(29)}\) suggested by Dr. P.L. Sanjeev Reddy Expert group constituted by Rural Development in BPL census of 2002. Thirteen socio economic indicators were used to identify the poor families. However, for the present study some of the indicators which are not relevant to study have been excluded. These indicators are shown in Appendix-B. Overall poverty index (OPI) is prepared to study the impact of microfinance on poverty. The scores are inversely related to the poverty and deprivation of the respondent’s family. A low score indicates a higher level of poverty and deprivation and vice-versa. For each household family, the scores from these 10 indicators are summed up to get the aggregate score of the household. The aggregate score of a household family can range from a minimum of zero to a maximum of 40. The beneficiaries and non-beneficiaries who scores between 0-10 are classified as very poor family. Similarly, the scores between 11-20, 21-30 and 31-40 are classified as poor family, moderate non- poor family and non-poor family respectively.
1.3.5.4 Elements of Inequality in Income Distribution

(i) Lorenz Curve

The Lorenz curve is a measure of the distribution of income or wealth in a society. It is a graphical representation of the cumulative income distribution. It shows for the bottom percentage of households, what percentage of the total income they have. The percentage of households is plotted on the x-axis, the percentage of income on the y-axis. It was developed by Max O. Lorenz in 1905 for representing inequality in the wealth distribution. Thus the straight line represents perfect equality and any departure from this 45 degree line represents inequality as presented in Figure 1.1 (Lubrano, 2016).30

![Lorenz Curve](image)

Figure 1.1: Lorenz Curve

(ii) Gini Coefficient

The Gini31 coefficient (also known as the Gini ratio or Gini index) is a method of statistical dispersion, which shows the distribution of income and is considered as a popular method to quantify the inequality among the generally used method. “A Gini coefficient of zero expresses perfect equality, where all values are the same (for example, where everyone has the same income). A Gini coefficient of one (or 100%) expresses maximal inequality among values (for example, where only one person has all the income or consumption, and all others have none)”. The Gini coefficient is usually defined mathematically based on the Lorenz curve, which plots the proportion of the total income of the population (y axis) and
percentage of the population on (x axis) as shown in Figure 1.1. The line at 45 degrees thus represents perfect equality of incomes. The Gini coefficient is the ratio of the area that lies between the line of equality and the Lorenz curve (marked A in the diagram) over the total area under the line of equality (marked A and B in the diagram); i.e., \( G = \frac{A}{A + B} \).

### 1.3.5.5 Women Empowerment

Various aspects of empowerment are considered to measure the impact of microfinance on women empowerment keeping in view the useful works of Malhotra, Schuler, & Boender, (2002)\(^{32}\) and Bansal, (2010)\(^{33}\). The present study includes twenty-two indicators under six domains of women empowerment which determine economic; socio-cultural and familial/Interpersonal; legal; political; and education, skill and training empowerment. In order to measure the impact of microfinance programme in terms of availment of microloan on women empowerment an overall women empowerment index (OWEI) is constructed. The scores allocated to different indicators are shown in the Appendix- C. The impact of these indicators on the level of women empowerment is measured in the following section.

### 1.3.5.6 Statistical Tools and Techniques

\( t \)-test, Chi-square test and co-efficient of determination \( (r^2) \) are included in present research work.

#### 1.3.5.6.1 \( t \)-test

A \( t \)-test is used to measure the significance of different results attained from the surveyed data. However, these results are tested in the two ways which are discussed below:

**(i) \( t \)-Test for the Significance of the Difference between the Means of Two Independent Samples**

It is used the find out the average income difference between the beneficiaries of the microfinance and the non-beneficiaries. The study make null hypothesis \( (H_0) \) that there is no significant difference in average income of those who availed microfinance loan against those who did not avail i.e. \( \mu_1 = \mu_2 \). The alternative hypothesis \( (H_1) \) is there is significant difference in average income of those who availed Micro Finance loan as against those who did not avail i.e. \( \mu_1 > \mu_2 \). It is achieved by the formula given below:
\[ t = \frac{(x_1 - x_2)}{S} \sqrt{\frac{n_1 n_2}{n_1 + n_2}} \]

\[ S = \sqrt{\frac{\sum (x_1 - x_1)^2 + \sum (x_2 - x_2)^2}{n_1 + n_2 - 2}} \]

Where \( X_1 \) = Mean of the first sample
\( X_2 \) = Mean of the second Sample
\( n_1 \) = Number of observations in the first sample (Beneficiaries)
\( n_2 \) = Number of observations in the second sample (Non-beneficiaries)
\( S \) = Combined Standard Deviation
The degree of freedom (df) = \( n_1 + n_2 \) - 2

The calculated value of ‘t’ is compared with critical value for degree of freedom at certain level of significance. If calculated value is > critical value then \((H_0)\) is rejected and \((H_1)\) accepted. The study has considered 5 and 1 per cent level of significance.

(ii) t-Test for the Significance of the Difference between the Means of Two dependent Samples

The dependent t-test (also called the paired t-test) compares the means difference between two sets of observation to determine whether there is a statistically significant difference between these means. This explains that when same respondents are selected again for responses, it results into pair of observations. The study has collected the responses from the beneficiaries before and after availment of loan. It is calculated with the help of given formula.

\[ t = \frac{\bar{D}}{s_d} \]

\[ s_d = \sqrt{\frac{\sum (d_i - \bar{d})^2}{n - 1}} \]

Where:
\( \bar{D} = \mu_1 - \mu_2 \) i.e. indicates the income of the beneficiaries before and after availment of loan
\( S = \) The standard deviation of the differences
\( n= \) Number of beneficiaries
The degree of freedom (df) = \( n_1 - 1 \)

The study consider null hypothesis \((H_0)\) that there is no significant difference in average income due to availment of Micro Finance loan i.e. \( D = 0 \) (where \( D = \mu_1 - \mu_2 \)). The calculated value of ‘t’ is compared with critical value for degree of freedom at certain level of significance. If calculated value is > critical value then \((H_0)\) is rejected and \((H_1)\) accepted. The study has considered 5 and 1 per cent level of significance.
1.3.5.6.2 Chi-square Test

The chi-square test is one of the simplest and most widely used non-parametric tests in statistical work. The Chi-Square test is used to measure the relationship between two variables. Chi-square test is used in present study with the objective to observe the relationship between availment of loan and different indicators such as confidence level of the respondents; respondents family decision making etc. The formula of chi square is given below:

\[ \chi^2 = \sum \frac{(f_o - f_e)^2}{f_e} \]

Where: fo = Observed frequency  
fe = Expected Frequency  
Expected frequency is calculated with help of given formula.

\[ E = \frac{RT \times CT}{N} \]

Where E= Expected frequency  
RT = The row total for the row containing the cell  
CT = The column total for the column containing cell  
N = The total number of observations.

The observed value of Chi-square is matched with the critical value at a certain degree of freedom at a certain level of significance. Degree of freedom is calculated by using the following formula:

\[ DF = (r-1) (c-1) \]

Where:

DF = Degree of freedom  
r = number of rows  
c = number of columns

1.3.5.6.3 Multiple Linear Regression Model

Regression analysis is a statistical technique which is examines the relationship between two variables i.e. dependent and independent variable. However, present study focuses in measuring the dependency of overall poverty index (OPI) and overall women empowerment index (OWEI) on more than two variables. Multiple linear regression model is used to measure the effect of different variables on poverty level and empowerment level of women.

\[ y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_k x_k + \epsilon_i \]
Where:
\[ \beta_0 = \text{Intercept} \]
\[ y = \text{dependent variable} \]
\[ x = \text{independent variables} \]
\[ \varepsilon_i = \text{residual terms of the model} \]

1.3.5.6.4 Co-efficient of Determination

Co-efficient of determination is also called the multiple correlation coefficient squared \((R^2)\). It is a commonly used statistic to evaluate model fit. It explains the proportion of the fluctuation of one variable that is predictable from the other variable. \(R^2\) always lies between 0 and 1 and signifies the strength of the linear association between dependent and independent variables. It also explains the percent of the data that is the closest to the line of best fit.

Section-IV

1.4 Chapter Outline

The study is constructed with keeping the chapter outline discussed below:

**Chapter 1** is divided into four parts: the first are to examine the rationale and basic thoughts on Micro finance, whereas the second are to show objectives, scope, limitations and hypothesis of the study. The third part of this chapter shows methodology applied to measure financial effectiveness and last section deals with chapter outline of the study.

**Chapter 2** is dedicated to review of literature related with financial effectiveness and impact of microfinance programme in terms of poverty, income inequality and Women Empowerment. For the review of the several studies, this chapter is divided into five parts. In first part shows the operation and functional aspects of microfinance. In second part, emphasis is given on studies undertaken on Poverty, Income inequality and Women Empowerment, in third section deals with the research undertaken in Gujarat. Fourth section discuss the emerging issues of research and in last section the research gap is discussed.

**Chapter 3** includes three parts. The first part discusses the meaning, necessity, history and players in microfinance sector. The second part focuses on different delivery models in
Micro Finance and its legal forms and the third part covers the progress and trends of microfinance in India and Gujarat.

**Chapter 4** is divided into three sections. In the first section, a comparative analysis of the sample districts, which are selected for the purpose of the study, is taken on the basis of secondary data collected from different sources. In the second section, socio-economic profile of the sample respondents of SEWA Bank is discussed on the basis of primary data collected from field survey. Third section is related with the general characteristics of self-help groups which are surveyed for the purpose of this study.

**Chapter 5** is constructed into three sections. The first section discusses the concept of poverty, current status of poverty in India as well as in Gujarat. The second section discusses the impact of availment of microfinance loan on poverty and the important factors affecting poverty. The third section discusses the impact of microfinance on income and income inequality.

**Chapter 6** has been divided into three sections. The first section deals with the concept and indicators of women empowerment. The second section discusses the impact of microfinance on women empowerment and the third section explains the factors of women empowerment.

**Chapter 7** highlights the general observation of study, discusses the results and findings the study, conclusion, suggestion for policy framework, major contribution of present of research and scope for further research.

### 1.5 References

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