A Synopsis

On

"Financial Effectiveness and Impact of Micro Finance in Gujarat"

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Guided By
Dr. B.M.Jani (Retd.)
Former Director, Grow More College of Management
Himmatnagar

Prepared By
Vishal Goel

Reg. No. Ph-3130
Enrolment. No. 129990992037

a. Title of the Thesis: Financial Effectiveness and Impact of Micro Finance in Gujarat

Abstract

Micro finance is a vital tool to cater to income and level of living of the people both in urban and rural area. In spite of the exceptional increase in the physical outreach of formal credit institutions in the past several decades, the rural poor continue to depend on informal sources of credit. This has happened largely due to institutions have also faced difficulties in dealing effectively with a large number of small borrowers, whose credit needs are small and frequent and their ability to offer collaterals is limited. In India, microfinance services are disbursed through two different channels: (a) Microfinance Institutions; (b) Self Help Group – Bank linkage. An effort is made in the present research to study impact of microfinance on income, income inequality, poverty alleviation and its impact on women empowerment in Gujarat. The study also covers the progress of Microfinance. As a case study, members of SEWA bank are selected as respondents for micro level impact assessment. SEWA bank, being a pioneer financial institution has been doing a lot of work for empowerment of women in Gujarat state. Primary data are collected by taking the responses from SEWA bank members in four districts namely Mehsana, Ahmedabad, Gandhinagar and Sabarkantha. In each district, 260 respondents are selected. Out of 260 respondents, 130 respondents availed microloan from SEWA bank and 130 did not avail microloan. A number of statistical techniques such as t-test, correlation analysis, poverty measurement indices viz. head count index, poverty gap index and squared poverty gap index are calculated. To examine the impact of microfinance on poverty, overall poverty index (OPI) is also calculated. Lorenz curve and Gini Coefficient are included for the measurement of income inequality. An overall Women empowerment index (OWEI) is computed by taking twenty two indicators covering in six domains namely economic, Socio-cultural, Familial/Impersonal, Legal, Political and indicators of education, skill and training. Various hypotheses are tested to understand the impact of availment of microfinance loan of income generation, reduction in poverty, reduction in income inequality and overall women empowerment. Economic and managerial interpretations are made in the present research.

Key Words: Microfinance; Self Help Group; Poverty, SEWA Bank; Overall Poverty Index (OPI), Income Inequality; Gini Coefficient; Lorenz Curve; Women Empowerment; Overall Women Empowerment Index (OWEI)

b. Brief description on the state of the art of the research topic

Micro finance is a vital tool to cater to income and living standard of the people. In mid 1990s, 70% of total populations living in rural areas exhibited only 30% bank deposits **(Lakshmanan, 2008)**. 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 (**Ingale et al., 2013**). India, the second most densely inhabited country in the world, with 1.2 billion natives, who is 17% of the world population. Constantly, poverty has been the main worry for a vast country like India with many miscellanies (**Millennium Development Goals: Government of India, 2014**). Poverty indicates a condition in which a person fails to maintain a living standard adequate for his physical and mental efficiency. It gives rise to a feeling of discrepancy. 21.9% of the country's poor are comprised of - 25.7% rural and 13.7% urban. In Gujarat, still 16.63 % are living below poverty line. State specific poverty line in terms of monthly per capita (Rs.) for India is Rs.816 in rural and Rs.1000 in urban while in Gujarat it was suggested Rs.952 and Rs.1152 in rural and urban areas (**Planning Commission Report, 2013**). The average gini-coefficient was observed 0.15 during 1981-1990, although it increased to 0.19 during 1991-2000. The average coefficient of gini for the period 2001-2008 was estimated at 0.24 with an increase of more than 26% compared with the previous decade, which accounts for the growing income disparity in India that is alarming. The Gini Inter-State for 2008 derives, that is, 0.2608 is much lower than the Gini for India as a whole (0.36). Given the UNDP Human Development Report reveals that the geographical disparity of income is much lower than Social inequality between the rich and the poorest people in the country (**Inequality of Income across Indian States**).

Literature Review:

A study is explored by **Hossain (1988)** to assess the impact assessment of Grameen Bank's microfinance programme in Bangladesh. The study made a comparison between the members and non-participants of Grameen Bank. The study found that Grameen bank had made a positive contribution in borrower's standard of living. **Aruna and Jyothirmayi (2011)** explored a study to measure the role played by microfinance as a financial intermediary to improve the empowerment of women. with respect to the beneficiaries of the Hyderabad Micro State branch. The study covered 300 respondents in the sample of 150 women participants in the self-help group, who have taken advantage of the microfinance loan and 150 other women in the self-help group, who did not take advantage of any microfinance loans. The study found that the participation of the self-help group increased the level of income of the participant. A prominent work in terms of impact of microfinance on poverty, employment and women empowerment is undertaken by **Bansal (2010),** in her doctoral work. Impact has been measured by comparing the participants of

the programme with the non-participants in the rural areas of Punjab. In her work, using multistage sampling, a total of 190 participant and 190 non-participants are selected. Numbers of statistical methods like t-test, F-test, Chi-square test, multiple regression analysis are included. Poverty measurement Indices and Lorenz curve and Gini Coefficient are also included for poverty and income inequality. The study found that microfinance programme has increased the individual and household incomes of the participants along with reduction in income inequalities. The results of the study also reveal that microfinance programme has empowered women economically, socially, psychologically and politically. A study is explored by **Goldberg (2005)** to evaluate microfinance programs in different countries. The author has highlighted one of the impact studies conducted by **Helen Todd (2001)** in Andhra Pradesh with respect to SHARE MicroFin Ltd. members. Todd study has considered two categories of members i.e. 125 existing members who are associated with SHARE MicroFin Ltd. and 104 new clients who were not associated with it. Todd formed a poverty index which consisted of 4 components: "sources of income; productive assets; housing quality; and household dependency burden (the number of household members divided by the number of income earners)". Todd study observed 76.8 percent of the poverty reduction among members of which 38.4% have moved from very poor to moderate poor. While 17.6% of members went from very poor to non-poor. **Asghar (2012)** examined the impact of microcredit on the Punjab Rural Support Program (PRSP) in rural Tehsil Gujrat. The study had covered a sample of 316 borrowers that was randomly selected. The study applied descriptive statistics to analyze the characteristics of borrowers, while the multiple linear regression model was used for the empirical analysis to measure the impact of microcredit. The study found that borrowers' incomes have improved as a result of microcredit. The study explained that the 79% increase in borrowers' incomes will occur due to the 1% increase in credit. To understand poverty, an attempt is made by **Vansiya (2015),** by taking data on BPL as measured by the Ministry of Rural Development, Government of India. The methodology was based on 13 socioeconomic indicators, indicating the quality of life and by score-based ranking for all households. The study provided information on percentage of BPL families classified into total poor and extreme poor. The incidence of poverty is 38.04% as per the BPL survey in the Gujarat state. The percentage of extreme poor is 50.53%. The study found that the percentage of BPL families in South Gujarat is 41.43% and percentage of extreme poor BPL is 55.57%. In Tapi district out of 44.82% families under BPL, 22.00% families are in extreme poor category. In Tapi district total poor and extreme poor BPL family have larger incidence of poverty as compared to other district South Gujarat as well as Gujarat state.

c. Definition of the Problem

A great deal of research has been done on the subject of microfinance. However, a little effort has been made to find out the impact of microfinance in Gujarat. 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.

d. Objective and scope of work
Objectives

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.

Hypotheses

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

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

c. Availment of microfinance loan leads to women empowerment

Scope

Present study is focused on poverty in rural areas and impact assessment is undertaken with respect to women beneficiaries of SEWA Bank. An impact study can also be undertaken by taking the urban population as a sample. A comparative study of urban and rural poverty can also be undertaken. Present study incorporated only those indicators 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. It becomes imperative to study the financial effectiveness of Microfinance and its impact in Gujarat so that maximum people could be benefitted.

e. Original contribution by the thesis

Impact on poverty is measured through changes in individual and family incomes and income inequalities. The analysis of primary data explained that income of the beneficiaries has increased who have availed loan from microfinance institutions. It is found that 18% of the beneficiaries respondent's families were BPL in Gujarat before availing the microfinance loan but after

availing the loan their financial position have improved and the number of BPL families was reduced to 3%. The Poverty Gap is calculated for measuring the depth of poverty. The study found that availment of loan has resulted in reducing the depth of poverty among the beneficiary families. Therefore, availment of loan reduces both the incidence as well as depth of poverty among the beneficiaries. It is also observed that the severity of poverty is high among the non-beneficiaries while comparing with beneficiaries. It is found that the availment of microfinance loan has reduced the inequalities in the distribution of family income. The study also highlighted that the availment of microfinance loan is not particularly targeting the BPL families. The poor people slightly above the poverty line are the key beneficiaries of loan availment from MFI i.e. SEWA Bank. The measurement of poverty among the sample respondents and the results of overall poverty index show that very poor families are not the actual beneficiaries of the availment of microfinance loan. It has been seen that the impact of microfinance in terms of availment of loan is found maximum on the poor people. Women empowerment is viewed keeping in view six domains namely economic, Socio-cultural, Familial/Impersonal, Legal, Political and indicators of education, skill and training. An overall Women empowerment index (OWEI) is prepared by taking twenty two indicators. The study found that most of the beneficiaries have employment opportunities, contributing in household income. The study also found that those beneficiaries who have availed loan are taking decision independently as compared to non-beneficiary members .Beneficiary women also had shown their confidence in terms of freedom of movement. The study found education plays an important role in empowering women.

f. Methodology of Research, Results/Comparisons

Research Design: Descriptive and analytical in nature

Sampling Technique: Since, study is undertaken for SEWA Bank members and their main concentration is in Ahmedabad and surrounding districts. Therefore, four districts namely Ahmedabad, Gandhinagar, Mehsana and Sabarkantha are selected for the purpose of study. In each district, there are large numbers of villages and every village has SEWA bank beneficiaries. Villages are selected at random. 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 avail loan. Out of 20 villages in all four districts; a total 179 self-help groups 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 1040 respondents including 520 beneficiaries and 520 non-beneficiaries are covered. Informations were collected through structured questionnaire. Below Poverty Line is an economic reference and minimum poverty line used by the Government of India to signal the economic drawback and to recognize individuals and households reliant on government support. Though, in India official National poverty line is described by **Tendulkar committee** which has observed Rs.932 per capita per month in rural areas and Rs.1152 per capita per month in urban areas for Gujarat. But keeping in view the inflation trend, Tendulkar methodology is reviewed by **Dr. C. Rangarajan**. Accordingly, Gujarat poverty line is estimated at Rs.1102.83 per capita per month in rural areas and Rs.1507.06 per capita per month for urban areas. For a family of five in terms of monthly consumption expenditure, for rural area it is estimated at Rs. 5514.15 and Rs. 7535.30 for urban areas respectively. Since, responses are taken from rural respondents, so poverty line is considered to be Rs. 5,500 (rounded off). The impact of microfinance has been determined by comparing two groups. The t-test is applied to test the significance of results collected from the analysis of surveyed data in the following manner:

(i) Testing difference between Means of Two Independent Samples: The test is applied to measure the mean income difference between the beneficiaries and non-beneficiaries.

(ii) Testing Difference between Means of Dependent (Paired) Samples: A paired sample t-test is used to measure the significance of difference between the mean incomes of the beneficiaries.

Pilot Study: 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.

Statistical Tools Used: Different tools used for the different objectives as below:

S. No.	Research Objectives	Statistical Tools Used
1	To examine the impact of microfinance on income and income inequality	t-test, Gini-Co-efficient, Lorenz Curve
2	To examine the impact of microfinance on poverty alleviation among the beneficiaries	Head Count Ratio, Poverty gap & Poverty Gap Index, Squared poverty gap index, Multiple Regression Analysis, coefficient of determination (R^2)
3	To assess the role of microfinance in empowering the women beneficiaries	Chi-Square Test, Multiple Regression Analysis, Coefficient of determination (R^2)
4	To examine the trends and patterns of Microfinance in India vis-à-vis Gujarat	Percentage, MPI & MPPI

g. Achievement with respect to objectives
Objective 1
Income is considered to be a very important factor of poverty. Availment of loan financially empowers the beneficiaries by helping them generate additional income. Increased level of income helps the beneficiaries come out of poverty and raise their standard of living.

Impact of Availment of Loan on Individual Beneficiaries

Availment of loan from microfinance institutions i.e. SEWA bank, has improved the level of income of the beneficiaries. A perusal of Table 1 provides that the average income of the beneficiaries is Rs.4844 p. m. after availment as against Rs.1993 p. m. before availment of loan, i.e., about 143% increase in income due to availment of loan.

Table 1: Income of the Beneficiaries before and after Availment of Loan

District	Income				Value of 't'
	Before Loan Availed	After Loan Availed	Increment		
			Amount (Rs.)	Percentage	
Mehsana	1855	4491	2636	142	**22.823[*]**
Ahmedabad	2530	6179	3649	144	**25.696***
Gandhinagar	1800	4257	2457	136	**23.542***
Sabarkantha	1787	4448	2661	149	**22.015***
Gujarat	**1993**	**4844**	**2851**	**143**	**44.587***

Source: Field survey 2015-16.
*Significant at 1 per cent level of significance.

The paired t test shows that the difference between the average incomes of the beneficiaries before and after availment of loan is significantly different at one per cent level in all the districts. Critical value of t at 5 % level of significance is found 1.96454 & at 1% level of significance is found 2.585. Since calculated value of t is more than the critical value, so H_0 is rejected and conclusion could be drawn that there is significant difference in average of the beneficiaries' income due to availment of microfinance loan. The study found that 18% beneficiaries did not have any income before availment of loan but after availment of loan it reduced to only 4%.

Change in Income of the Individual Beneficiaries and Non-Beneficiaries

Study revealed that (Table 2) average income of non-beneficiaries is Rs.2088 p. m. as compared to Rs.4844 p. m. for the beneficiaries, an increase of 132%. The significance of difference between the average incomes of the beneficiaries and non-beneficiaries is measured with t-test (Two-Sample Assuming Equal Variances). This test shows that the differences are significant both at 1% and 5% level of significance. Thus, availment of micro finance has helped the beneficiaries to increase their monthly income.

Table 2: Income of the Beneficiaries and Non-Beneficiaries

District	Average Income (in Rs.)				Value of 't'
	Beneficiaries	Non-Beneficiaries	Increment		
			Amount	Percentage	
Mehsana	4491	1359	3132	230	**17.199[*]**
Ahmedabad	6179	2622	3557	136	**8.3126***
Gandhinagar	4257	2702	1555	58	**6.0024***
Sabarkantha	4448	1667	2781	167	**11.993***
Gujarat	**4844**	**2088**	**2781**	**133**	**18.265***

Source: Field survey 2015-16.
*Significant at 1 per cent level of significance.

Impact of Availment of Loan on Family Income of Beneficiaries
Family income is sum of money received by all family members. The availment of loan from microfinance institutions increases the individual beneficiary's income, which subsequently improve the family income. The study found that increase in family income is the highest in Ahmedabad district (59.69%) followed by Sabarkantha (49.10%); Mehsana (46.23%) and Gandhinagar (34.93%) after availment of loan.

Impact on Income Inequality
Income inequality among the respondents has been discussed with the help of respondent family income distribution. The Lorenz curve and Gini-coefficient methods have been used to find out the impact of availment of micro finance loan on the distribution of respondent family income.

Distribution of Income in Gujarat
Table 3 presents the income distribution and values of Gini coefficient for all the beneficiaries and non-beneficiaries surveyed in this study.

Table 3: Distribution of Income for the Beneficiaries and Non-Beneficiaries Respondents of Gujarat

| Deciles (Respondents) | Percentage of Income | | | Cumulative Percentage of Respondents | Cumulative Percentage of Income | | |
| | Beneficiaries | | Non-Beneficiaries | | Beneficiaries | | Non-Beneficiaries |
	Before Availment of Loan	After Availment of Loan			Before Availment of Loan	After Availment of Loan	
1st Decile	6.266	5.843	6.067	10	6.266	5.843	6.067
2nd Decile	6.643	7.494	6.536	20	12.910	13.337	12.603
3rd Decile	7.021	8.517	7.006	30	19.930	21.854	19.609
4th Decile	7.398	8.807	7.475	40	27.328	30.661	27.084
5th Decile	7.775	9.097	7.945	50	35.103	39.757	35.029
6th Decile	8.152	9.386	8.414	60	43.255	49.144	43.443
7th Decile	8.529	9.676	8.884	70	51.784	58.820	52.326
8th Decile	8.906	9.966	8.240	80	60.690	68.786	60.566
9th Decile	9.283	10.256	9.822	90	69.974	79.042	70.388
10th Decile	30.026	20.958	29.612	100	100	100	100
Gini Coefficient	**0.2455**	**0.1655**	**0.2458**				

Source: Fiels Survey 2015-16

A perusal of the table 3 explains that the poorest 10% of the beneficiary respondents have 6.266%t of the total income of the beneficiaries before availing the loan which is found to be 5.843% after availment of loan. While the richest 10% of the beneficiary respondents have 30.026% of the total income of the beneficiaries before availing the loan which is found to be 20.958% after availment of loan. Similarly, the poorest and richest 10% of the non-beneficiaries share 6.067 per cent and 29.612 per cent of the total income respectively. Before availment of loan the value of Gini coefficient for the beneficiary respondents is 0.2455 whereas, the value of gini-coefficient has decreased to 0.1655 after availment of the loan by beneficiary respondents. While in case of non-beneficiary respondents, the value of Gini coefficient is 0.2458. The values given in Table 3 are graphically presented in Figure 1. It is observed that the distribution of income is more unequal among the non-beneficiaries as compared to the beneficiaries.
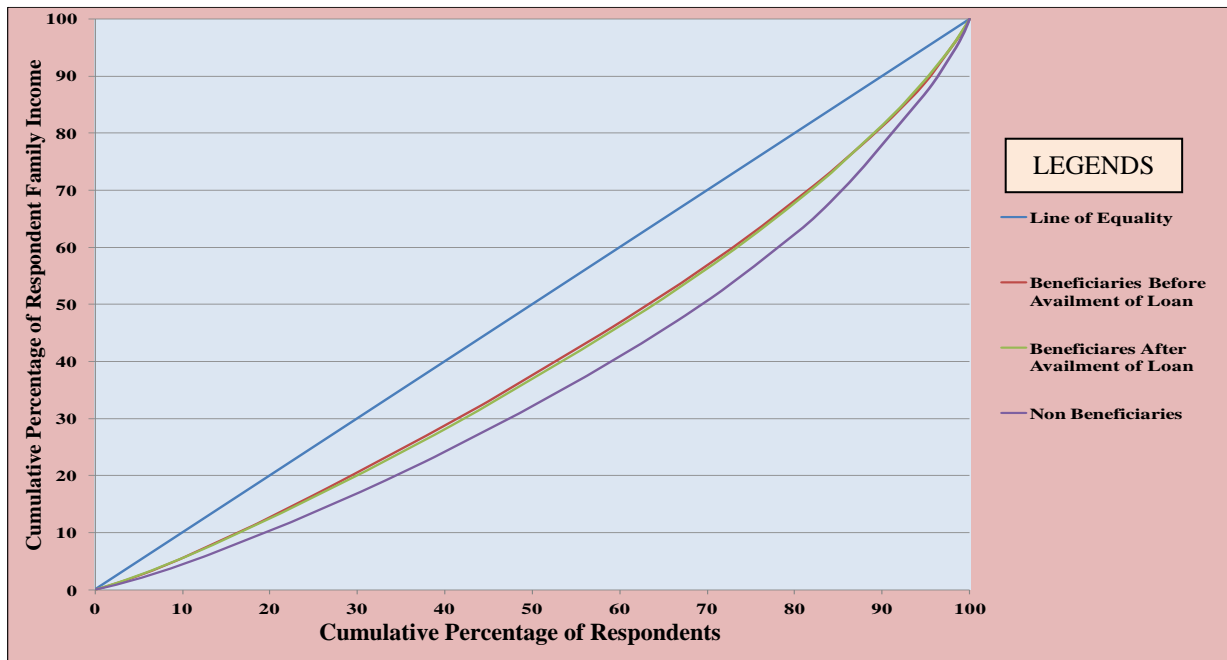
Figure 1: Lorenz Curve for Gujarat

Objective 2:

Microfinance and Incidence of Poverty: The Head Count Index (HCI) is the most commonly used method for explaining the incidence of poverty. The study found that number of BPL families availed microfinance loan are 20, 12, 17 and 25% in Mehsana, Ahmedabad, Gandhinagar and Sabarkantha districts respectively. An attempt has been made to measure the impact of availment of loan for both the below poverty line (BPL) and above poverty line (APL) sample respondent's family separately. The availment of loan provided under the microfinance programme has shown an increase in the respondent's family income. As a result, some of the BPL families have been able to cross the poverty line and shifted to the APL category. In this way, availment of microfinance loan has led to changes in the poverty situation of the beneficiaries as shown in Figure 2.
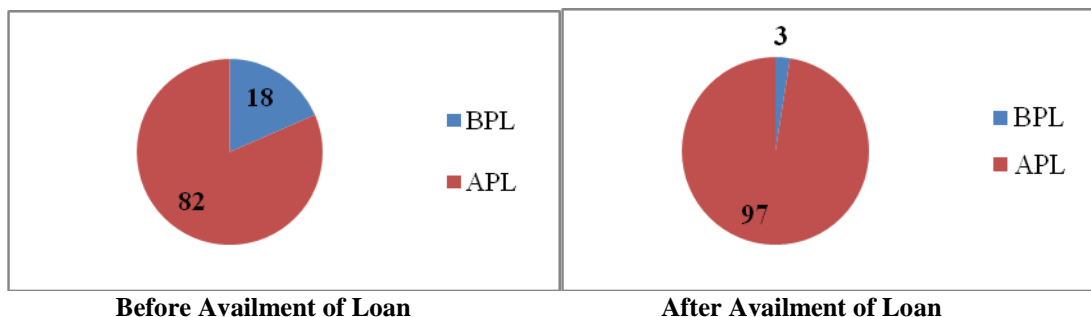

Before Availment of Loan   After Availment of Loan
Figure2: Changes in Poverty Status from Before to after availment of loan

The study reveals a change in the family incomes of BPL and APL respondent families separately. It is observed that 3% beneficiary in Mehsana district, 2% in Gandhinagar and 5% in Sabarkantha districts remained BPL even after availing the microfinance loan. It is also noticed that these BPL

families were poor at the time of availing the loan and their family income were Rs.2950, Rs.3667 and Rs.3500 per month for Mehsana, Gandhinagar and Sabarkantha districts respectively.

Microfinance and Depth of Poverty (Poverty Gap Index): Headcount index is simple to measure and understand but it does not consider the intensity of poverty. The Poverty Gap is a method for measuring the depth of poverty. The study found the value of poverty gap in respect of beneficiaries who could not cross the BPL is Rs.6900 even after availment of loan as compared to the total poverty gap of Rs.1,03,900 before availment of loan. It indicates that availment of loan has resulted in reducing the depth of poverty among the beneficiary families. A moderately 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. The study found that among the beneficiary respondent family the value of poverty gap was 0.0363 before availing the loan as compared to 0.0024 after availment of loan. Therefore, microfinance programme in terms of availment of loan led to the reduction in the value of poverty gap index. The study also observed the difference in the value of poverty gap index between beneficiaries and non-beneficiaries. The difference is 0.0383, 0.0203, 0.0586 and 0.0641 for Mehsana, Ahmedabad, Gandhinagar and Sabarkantha districts respectively. Therefore, availment of loan reduces both the incidence as well as depth of poverty among the beneficiaries.

Microfinance and Severity of Poverty (Squared Poverty Gap Index): Squared poverty gap index considers account not only the distance isolating the poor from the poverty line (the poverty gap), but also the inequality among the poor. Study found that the severity of poverty is high among the beneficiary's respondents before availment of loan as compared to after availment of loan situation. The difference in the value of poverty severity among beneficiary's respondents before availment the loan is 0.0097, 0.0041, 0.0132 and 0.0124 for the beneficiary respondent of Mehsana, Ahmedabad, Gandhinagar and Sabarkantha districts respectively. It is also observed that the severity of poverty is high among the non-beneficiaries while comparing with beneficiaries. Therefore, severity of poverty is reduced among the beneficiaries after availment of loan.

Overall Poverty Index (OPI): Overall poverty index (OPI) is calculated to examine the impact of microfinance on poverty keeping in view the various dimensions on poverty. For this purpose, 10 score based socio economic indicators have been identified. These ten socio-economic indicators incorporated in the present study are type of house, average availability of normal wear clothing, food security in terms of per capita expenditure, sanitation and drainage, ownership of consumer durables, literacy Status of highest literate adult, status of the household labour force,

means of livelihood, type of indebtedness and preference of assistance. For each of ten indicators, the respondent's family is awarded scores in a five-point scale from 0 to 4 and Overall Poverty Index (OPI) is prepared. The scores are inversely related to the poverty and deprivation of the respondent's family. 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, moderately non- poor family and non-poor family respectively. The study found that a 1% of both beneficiary and non-beneficiary respondents is in the very poor category. 19% of the beneficiaries and 30% of the non-beneficiaries are poor and 48% of the beneficiaries and 47% of non-beneficiaries are medium non-poor. 33% of the beneficiaries and 22% of the non-beneficiaries are non-poor.

Factors of Poverty (Multiple Regression Analysis): In order to determine the factors affecting the poverty level of beneficiaries, a multiple linear regression equation is used. Overall poverty index is taken as dependent factor. Family income, highest level of education in beneficiary's family, amount of loan and family size of beneficiary are taken as independent factors.

$$OPI = b_0 + b_1 FamInc + b_2 Edu + b_3 AOL + b_4 FamSize$$

Where:
OPI = Overall Poverty Index;
FamInc = Family Income
Edu = Highest level of Education in the Beneficiary's Family
AOL = Amount of Loan
FamSize = Family size of Beneficiary

The results of regression equation are shown in Table 4. The study reveals that all the factors except family size are showing positively significant impact on overall poverty index.

Table 4: Results of Regression Analysis

Variables	Standardised Beta Coefficients				
	Mehsana	Ahmedabad	Gandhinagar	Sabarkantha	Gujarat
Constant	(1.734)	(0.642)	(5.082)	(2.765)	(6.196)
Family Income	.295 (3.884)*	.458 (7.401)*	.577 (8.194)*	.579 (8.033)*	**.364 (10.494)***
Highest Level of Education in the Family	.317 (4.712)*	.420 (7.485)*	.334 (5.420)*	.258 (3.724)*	**.445 (14.354)***
Amount of Loan	.362 (5.341)*	.109 (1.869)	.091 (1.770)	.110 (2.087)**	**.168 (5.422)***
Family Size	.117 (2.246)**	(-) .126 (-)(2.619)*	(-).094 (-) (.2.029)**	(-).100 (-)(2.044)**	**(-).011 (-)(.410)****
R²	**.673**	**.726**	**0.753**	**.707**	**.653**

* Significant at 1 per cent Level, ** Significant at 5 percent Level
Source: Field Survey 2015-16
Note: The figures given in parentheses indicate t-values.

A perusal of the table shows that coefficient of family size is negatively related with the value of overall poverty index. This explains that higher numbers of family members reduce the score of

overall poverty index, which indicated a greater incidence of poverty. The variable amount of loan amount used for productive purposes is positively influencing the overall poverty index. The level of education and family income are very significantly influencing the poverty level of beneficiaries.

Objective 3: Empowerment is an intrinsic quality of a person, which cannot be bestowed by a third party. It operates at different and interlinked levels and is based on an analysis of power relations. (**Mayoux, L. 2000).** An empowered woman would be considered to be one who has made her life better by having access to and utilization of resources provided by microfinance programme. She also exerts and participates in the household decision-making. JSI researchers recognized six general areas or domains in which empowerment of women can take place. These domains includes sense of self & vision of a future, mobility & visibility, economic security, status & decision-making power within the household, ability to interact effectively in the public sphere and participation on non-family groups (**Umashankar Deepti, 2006).** Efforts have been made to devise the indicators of empowerment after reviewing the informative work of (**Malhotra et. al. 2002).** An Overall Women Empowerment Index (OWEI) is prepared by incorporating the twenty two indicators of women empowerment covering six broad domains of women empowerment i.e. indicators of economic empowerment, socio-cultural, familial/interpersonal, legal, political and indicators of education, skill and training empowerment.

 Results of the studies are as follows:
1. 18% beneficiaries were employed before availing the loan. However, only 4% are found unemployed after availing the loan. Whereas 26% are unemployed in case of non-beneficiaries.
2. In terms of household financial decision making it is observed from table 5 that 23% beneficiaries are taking decision independently as against 12% in case of non-beneficiaries.

Table 5: Household Financial Decision Making

Household Financial Decision Making	Beneficiaries					Non-Beneficiaries				
	Meh.	**Ahm.**	**Gan.**	**Sab.**	**Guj.**	**Meh.**	**Ahm.**	**Gan.**	**Sab.**	**Guj.**
Husband Dominance	16(12)	14 (11)	21 (16)	32 (25)	**83 (16)**	54 (42)	20 (15)	24 (18)	69 (53)	**166(33)**
Other Family Members	10 (8)	3 (2)	5 (4)	4 (3)	**22 (4)**	7 (5)	9 (7)	11 (8)	5 (4)	**32 (6)**
Joint Decision	74 (57)	89 (68)	77 (59)	55 (42)	**295 (57)**	56 (43)	83 (64)	80 (62)	43 (33)	**262(50)**
Independent	30 (23)	24 (18)	27 (21)	39 (30)	**120 (23)**	13 (10)	18 (14)	16 (12)	13 (10)	**60 (12)**
	130 (100)	**130 (100)**	**130 (100)**	**130 (100)**	**520 (100)**	**130 (100)**	**130 (100)**	**130 (100)**	**130 (100)**	**520 (100)**

Source: Field survey 2015-16.
Note: The figures given in parentheses indicate percentages of beneficiaries and Non-beneficiaries.
LEGENDS: Meh. = Mehsana, Ahm = Ahmedabad, Gan. = Gandhinagar, Sab. = Sabarkantha, Guj. = Gujarat
Chi-square ($\chi2$) =51.372 The table values $\chi2_{(.05,3)}$9.3484, 0.21579 and $\chi2_{(.01.3)}$ 12.8381, 0.07172respectively.

Since the calculated value of χ2 does not lie between two critical table values of chi square χ2 (α=·05, 0.1,df=3, 2-tailed test), so the Null Hypothesis is rejected. This provides enough evidence to indicate that the availment of micro-finance and participation in household decision making are dependent of each other.

3. Freedom of Movement

The conventional social norms confine women's freedom of movement. But if a woman becomes able to attain such freedom she is considered to be more empowered.

Table 6: Women's Freedom of Movement

Level of Mobility	Beneficiaries					Non-Beneficiaries				
	Meh.	Ahm.	Gan.	Sab.	Guj.	Meh.	Ahm.	Gan.	Sab.	Guj.
can not go outside	16 (12)	13 (10)	8 (6)	20 (15)	**57** **(11)**	35 (27)	9 (7)	12 (9)	23 (18)	**79** **(15)**
can visit another village	33 (25)	41 (32)	35 (27)	27 (21)	**136** **(26)**	40 (31)	21 (16)	48 (37)	42 (32)	**151** **(29)**
can visit village and nearest town	47 (36)	30 (23)	42 (32)	44 (34)	**163** **(31)**	28 (22)	61 (47)	39 (30)	36 (28)	**164** **(32)**
can visit village , nearest town & city in other state	34 (26)	46 (35)	45 (35)	39 (30)	**164** **(32)**	27 (21)	39 (30)	31 (24)	29 (22)	**126** **(24)**
	130 **(100)**	**130** **(100)**	**130** **(100)**	**130** **(100)**	**520** **(100)**	**130** **(100)**	**130** **(100)**	**130** **(100)**	**130** **(100)**	**520** **(100)**

Source: Field survey 2015-16.
Note: The figures given in parentheses indicate percentages of beneficiaries and Non-beneficiaries.
LEGENDS: Meh. = Mehsana, Ahm = Ahmedabad, Gan. = Gandhinagar, Sab. = Sabarkantha, Guj. = Gujarat
Chi-square (χ2)=9.3838 The table values χ2$_{(.05,3)}$9.3484, 0.21579 and χ2$_{(.01.3)}$ 12.8381, 0.07172respectively.

The study observed that 11% beneficiaries and 15% non-beneficiaries cannot go outside their home. However, 32% beneficiaries and 24% non-beneficiaries can visit village, nearest town and other city in other state. Since the calculated value of χ2 does not lie between two critical values of chi square χ2 (α=·05,df=3, 2-tailed test), so the Null Hypothesis is rejected. This provides enough evidence to indicate that the availment of microfinance and Level of Mobility is dependent of each other.

4. Overall Women Empowerment Index:

Table 7: Overall Women Empowerment Index of Beneficiaries and Non-Beneficiaries

Empowerment Level	OWEI	Beneficiaries					Non-Beneficiaries				
		Meh.	Ahm.	Gan.	Sab.	Guj.	Meh.	Ahm.	Gan.	Sab.	Guj.
Less Empowered	(0-20)	17 (13)	19 (15)	11 (8)	21 (16)	**68** **(13)**	32 (25)	28 (22)	27 (21)	31 (24)	**118** **(45)**
Medium Empowered	(21-30)	35 (27)	39 (30)	33 (25)	34 (26)	**141** **(27)**	67 (52)	38 (29)	42 (32)	46 (35)	**193** **(84)**
High Empowered	(31-40)	47 (36)	32 (25)	38 (29)	31 (24)	**148** **(28)**	21 (16)	30 (23)	32 (25)	37 (28)	**120** **(46)**
Very High Empowered	(41-50)	31 (24)	40 (31)	48 (37)	44 (34)	**163** **(31)**	10 (8)	34 (26)	29 (22)	16 (12)	**89** **(25)**
		130 **(100)**	**130** **(100)**	**130** **(100)**	**130** **(100)**	**520** **(100)**	**130** **(100)**	**130** **(100)**	**130** **(100)**	**130** **(100)**	**520** **(100)**

Source: Field survey 2015-16.
Note: The figures given in parentheses indicate percentages of beneficiaries and Non-beneficiaries.
LEGENDS: Meh. = Mehsana, Ahm = Ahmedabad, Gan. = Gandhinagar, Sab. = Sabarkantha, Guj. = Gujarat
Chi-square (χ2) = 46.1922   The table values χ2$_{(.05,3)}$ 9.3484,0.21579 and χ2$_{(.01.3)}$ 12.8381,0.07172 respectively.

A perusal of the table 7 shows that 31% beneficiaries and 25% non-beneficiaries are highly empowered. However, 13% of the beneficiaries and 45% of the non-beneficiaries fall in the less empowered category. The Chi-square (x^2) value comes 46.192 which shows very significant differences between the level of empowerment of the beneficiaries and non-beneficiaries.

5. Multiple Linear Regression Analysis

A multiple linear regression is used to statistically measure the impact of all these factors on the level of Overall Women Empowerment Index (OWEI) The following multiple regression equation is used to measure the effect of key factors on OWEI.

$OWEI = b_0 + b_1\,AGE + b_2\,EDU + b_3\,AOL + b_4\,CFI + b_5\,PHDM + b_6\,FOM + b_7\,BI$

Where:
OWEI= Overall Women Empowerment Index; AGE= Age; EDU = Education of the Beneficiary; AOL = Amount of Loan; CFI = Contribution in Family Income; PHDM = Participation in Household Decision Making; FOM= Freedom of Movement; and BI = Beneficiaries Income

Table 8 highlights the coefficients of these variables. The regression results in the table explain that all the coefficients have positive values.

Table 8: Multiple Linear Regression Analysis

Variables	Standardised Beta Coefficients				
	Mehsana	Ahmedabad	Gandhinagar	Sabarkantha	Gujarat
Constant	(0.425)	(0.744)	(1.206)	(1.239)	**(2.645)**
Age	0.007 (.173)	0.75 (1.442)	0.012 (.331)	0.006 (.154)	**0.007 (.304)**
Education	0.308 (6.385)*	0.532 (8.978)*	0.298 (5.565)*	0.204 (3.667)*	**0.411 (14.451)***
Amount of Loan	0.126 (.2.005)**	-0.058 - 1.080	0.082 (1.857)	0.009 (.211)	**0.007 (.250)**
Contribution in Household Income	0.245 (3.284)*	0.045 (.668)	.239 (2.839)*	0.290 (2.621)*	**0.161 (3.802)***
Participation in Household Decision Making	0.138 (3.091)*	0.120 (2.336)*	.138 (3.285)*	0.155 (2.550)*	**0.149 (5.679)***
Freedom of Movement	0.192 (4.209)*	.285 (5.462)*	0.128 (3.238)*	0.189 (3.937)*	**0.229 (9.188)***
Respondent Income	.150 (2.082)**	.216 (3.192)*	.128 (2.500)*	.220 (2.121)**	**.167 (4.012)***
R^2	**.838**	**.724**	**.861**	**.829**	**.768**

* Significant at 1 per cent Level, ** Significant at 5 percent Level
Source: Field Survey 2015-16
Note: The figures given in parentheses indicate t-values.

The coefficients of regression variables, e.g. education, freedom of movement, participation in household decision making, contribution in household income, respondent income of the beneficiaries are playing an important and significant role in women empowerment. Whereas age of the beneficiary and amount of loan are not significant.

Objective 4

Inadequacies in access to formal finance have led to the growth of microfinance in India. In India microfinance operates through two main channels viz. a) banking system through the SHGs under SHG-Bank Linkage Programme (SHG-BLP) and b) through Micro Finance Institutions (MFIs) lending through individual and group approach. Microfinance Institutions in India emerged in the late 1980s in response to the gap in availability of banking services for the unserved and underserved rural population. Non adherence to rules and going overboard, by some MFIs, had brought a setback to the sector, albeit temporarily. But the sector regained its traction from 2012 onwards and is showing a consistent growth. As a result, lending by MFIs exhibited a robust growth with 50% jump in loans disbursed consecutively during last three years from Rs.23682 crore during 2013-14 to Rs.37599 crore and further to Rs.61860 crore during 2015-16 **(Status of microfinance 2015-16).**

Overall Progress under SHG-Bank Linkage from 2009-10 to 2015-16: The SHG-Banks linkage programme which commenced as a pilot programme during 1992 to link 500 SHGs with banks, has grown exponentially during the last two decades and over 97 million rural households have access to regular savings through 79.03 lakh SHGs linked to different banks. 18.32 lakh SHGs were extended fresh loans to the extent of Rs. 37286.9 crore during 2015-16 by all FIs recording 35% increase over the last year.

MFI Bank Linkage Model: In 2009, there were 779 MFIs operating in India and the amount of loan disbursed shows a 187.4% increase over the previous year. There is a suddenly decline of 39.5% in the number of MFIs and 21.3% in amount of loan disbursed. After 3 years of the MF crisis the MFIs seem to be on the path of regaining the confidence of the clients as well as with the lending institutions. The total loans to MFIs by banks and financial institutions have increased by over 36.90% in 2015-16 as against 47.73% during the previous year. As of 31 March 2016, 46.72 lakh SHGs (59.1% of total SHGs) were having credit outstanding against 44.68 lakh (58.1%) a year back. Among the regions, percentage of groups having credit linkage was highest in South (71.7%) followed by East (66.5%). This percentage was lowest in Western Region at 25.4% only. Among the states, percentages of groups having highest credit linkage were Bihar (96%), Telangana (91%) and Andhra Pradesh (89%). This percentage was lowest in Arunachal Pradesh (8.8%) and among larger states in Gujarat (21.8%).

No. of MFIs in India: Hitherto there was no authentic data on the number of MFIs operating in India. The estimates by various sources ranged anywhere from 300 to 800. However as per The

Bharat Microfinance Report 2016, MFIs currently operate in 29 States, 4 Union Territories and 588 districts in India. There are 22 MFIs operating in Gujarat State.

Penetration of Microfinance in Gujarat: The present study also analyses the progress of the microfinance programme in Gujarat vis-à-vis India. For this purpose, a Microfinance Penetration Index (MPI) and a Microfinance Poverty Penetration Index (MPPI) have been calculated. MPI explains the intensity of penetration of microfinance and MPPI measures the intensity of penetration of microfinance among poor. The study found that the calculated value of MPI and MPPI for Gujarat .35 and .38 respectively. These low values explains that in Gujarat the penetration of microfinance programme is less in terms of population outreach as well as poverty outreach as compared to different regions in India. Further the study reveals that South region is far ahead as compared to other regions in India in terms of MPI and MPPI.

h. Conclusions

It may be said that availment of loan from microfinance institution i.e. SEWA bank has benefited the poor. Their monthly income has improved and availment of loan has reduced both the incidence as well as depth of poverty among the beneficiaries. Severity of poverty is reduced among the beneficiaries after availment of loan. With the increased income, poor respondents have shifted to the non-poor categories. The study found that the poor people are the actual beneficiaries of the availment of loan under microfinance programme. The reduction in the value of gini-coefficient clearly indicates that availment of loan from microfinance institutions (SEWA Bank) has led to the reduction in the income inequality. The study also conclude that availment of Microfinance loan from microfinance institutions is helpful in empowering women economically, socio-culturally and politically. The study also found that the beneficiaries have reasonable employment, increase in income and participation in household financial decision-making as compared to non-beneficiaries. It is also observed that the beneficiaries are better in terms of mobility as compared to non-beneficiaries. Beneficiaries are able to raise their voice against social exploitations. The multiple regression analysis shows that the variables like education of the beneficiaries, freedom of movement; respondent income and participation in household decision making are significant which influence the empowerment of programme participants. In this way, availment of loan from microfinance institution i.e. SEWA bank has contributed immensely in the empowerment of women.

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