Chapter – Five
Discussion and Conclusion

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Discussion & Conclusion

The present thesis is outcome of study conducted in Dang District of Gujarat state. The study analyses the socio-economic impact on rural households with financial support and intervention from formal financial organization in terms of small credit, savings and insurance respectively with people.

Variables of this study includes gender (male, female), family type (nuclear, joint), socio economic status (family income, assets, land etc.) of the family. Based on an in-depth and comprehensive literature review on impact of microfinance of formal financial organizations with different family structure and socio-economic status for target study group of participants from Dang district, objectives and hypotheses were formulated and tested. A survey form (tool format) was designed for survey to collect primary data on the spot (cross sectional data). Data were entered through MS Excel 2007 software and later analyzed and interpreted using statistical software packages IBM SPSS v20 and MINITAB v14.The Mann-Whitney U test used for testing hypotheses, Levene's test used for testing equality of variance and Spearman's coefficient of correlation tests were conducted to get results.

After examination of the different literatures on this concept, it is evident that many factors are associated for the development of socio-economic impact on society and drawing the benefits from microfinance activities. Extensive study has outlined for the different outcomes in different domains (blocks) that are more influential in the development of society. The survey form consists of different set of questionnaires which was designed to assess the socio-economic impact of microfinance services provided by formal financial system in Dang District of Gujarat.

The literature review has given many areas for study and to identify the implications but most important two implications are identified. Firstly, it will serve as useful resource for policy makers, financial institutions and NGOs, and SHGs to identify what factors contribute in development and enhancement of quality of life of people belonging from Lower to Upper Lower (Kuppuswamy Scales concept).Secondly, the factors those may

contribute in development and empowerment of people with their surroundings by micro credit, savings and micro insurance as required understanding.

5.1. Data Domain

In the present research study, the mean age of all the 600 participants was 49.1 years in which 82.0% male participants of average age 43.1 years and 28.0% of female participants of average age 44.2 years. The age groups were classified into two groups of for further studies i.e. first group of **age <37** years where male with average age 30.7 years and female with average age 32.2 years, while in second group of **age >36**years where male with average age 48.8 years and female with average age 52.2 years respectively.

The entire three blocks of Dang district having distribution of participants (both borrowers and non-borrowers) at the time of survey included male 81.6% and female 18.4% respectively.

These participants (male and female both) may be from different family structure such as from Joint (56.0%) and from Nuclear (44.0%) families living in different residence area rural or urban. Socio-economic impact is an important determinant of the livelihood as it influences levels of skill, occupation, income conditions etc. *It is important to consider the characteristics of every individual in context where they live and their standard of living with development*. Socio-economic status is typically used in common expression for variables that characterized the families, households, capacity to create or consumer goods which are important to society.

Socio-economic status (SES) is a combination of economic and sociological measures of a person's work experience and of family's economic and social position relative to others, based on his/her income, education, and job. Sometimes for analysis purpose the household income, education level of family members or earner, and their occupation were also taken into consideration with combined income, versus with an individual, when their own attributes were assessed. There were 21.0% participants from Upper Middle-II income group, 64.0% from Lower Middle-III income group and 15.0% from Upper Lower-IV income group respectively were classified using Kuppuswamy Scale.

5.2. Conclusion of Data Analysis

To test various hypotheses as described in Section 3.5, data collected using the self-designed survey form; various statistical tests were performed before concluding the hypotheses. The survey form contains data in Likert scale format (ordinal format) hence instead of using methods of analysis for parametric testing procedures are not used for analysis of Likert scale data. This is a most common mistake in analyzing the data collected in Likert scales and generating mean. The most common methods for non-parametric data based on rank, median or mode with appropriate distribution free methods (Allen, 2007) and these were used. Hence when ever non parametric data are use one should avoid methods that uses mean: for Likert scale data variability could be estimated using Median, Range and Inter-Quartile Range, but not Standard Deviation. Parametric tests, such as t-tests. The (Likert Scale data) non-parametric tests e.g. the Wilcoxon signed-rank test, the Mann-Whitney U-test, and the Kruskal-Wallis test are possible to use in their place.

5.2.1. Top-Box Scoring of Scale Data

The questionnaire consist of seven different parts e.g. to create domain of basic social personal and economic environment **(Part – 0)**, Credit/Loan Related data with other data for analysis to check socio-economic impact on family income (**Part – I and Part – II**)), saving related data (Part – III), Micro Insurance related data (**Part – IV**), to capture data for analyzing the factors responsible for socio-economic impact (**Part – V**) and factors responsible for problems faced by participants **(Part –VI)**.

Every question which were selected by participants were tabulated and their frequency for Likert scale items (both 2-point and 5-point scales) calculated for every variable % analysis done such as calculating %H (% of SAG+AG), %A (% of Neutral), and %L (% of SDA+DA) respectively. Rating scales are used widely because in absence of any standard benchmark or previous data; the top-box (TB) and top-two-box (TTB) analysis is performed. The main reason for such calculation is that to get only those responses who are expressing a strong attitude with a statement (question which become a variable). The median of response to every question becomes measure of central tendency.

SV variables (i.e. Savings Habit Related Variables)

There are eight questions (denoted as SV1 thru SV8) 2-point scale related to the need of savings. The responses calculated as percentages for overall participants (either borrower or non-borrower) of all the three blocks. The higher percentages for *yes* response i.e. 73.5% (Savers) show interest in savings while 26.5% responded for *no*(not saving), which means still there are some reasons for savings. (Table 4.14)

IN variables (i.e. Insurance Habit Related Variables)

There are five questions (denoted as IN1 thru IN5) 2-point scale related to the need of life micro insurance. The responses calculated as percentages for overall participants (either borrower or non-borrower) of all the three blocks. The higher percentages for *no* response i.e. 69.8% show no interest in insurance or may not be aware about it while 30.2% responded for *yes* means these participants knows about insurance.

MC variables (i.e. Challenges in Availing Micro Credit Related Variables)

There are twelve questions (denoted as MC1 thru MC12) 2-point scale related to the need of micro credit facilities. The responses calculated as percentages for overall participants (either borrower or non-borrower) of all the three blocks. The higher percentages for *no* responses i.e. 80.1% (from both types of participants) or 27.8% (from borrowers only) in micro credit facilities or may not be aware about it; while 19.9% (15.2%) responded for *yes* means these participants having knowledge about micro credit facility.

MS variables (i.e. Challenges in Availing Micro Saving Related Variables)

There is only three questions (denoted as MS1 thru MS3) 2-point scale related to the need of micro saving facilities. The responses calculated as percentages for overall participants (either borrower or non-borrower) of all the three blocks. The higher percentages for *yes* responses i.e. 57.2% (from both types of participants) or 30.2% (from borrowers only) in micro saving facilities or aware about it; while 42.8% (12.8%) responded for *no* means these participants having knowledge about micro saving facility.

MI variables (i.e. Challenges in Availing Micro Insurance Related Variables)

There is only four questions (denoted as MI1 thru MI4) 2-point scale related to the need of micro insurance facilities. The responses calculated as percentages for overall participants (either borrower or non-borrower) of all the three blocks. The higher percentages

for *no* responses i.e. 76.1% (from both types of participants) or 30.2% (from borrowers only) in micro insurance facilities or may not aware about it; while 23.8% (12.8%) responded for *no* means these participants having knowledge about micro saving facility.

SE variables (i.e. Socio Economic Impact Variables)

There are seven questions (denoted as SE1 thru SE7) 5-point scale related to the need to measure economic impact. The responses having rating from 1 (strongly disagree) to 5 (strongly agree) received from participants (either borrower or non-borrower) of all the three blocks. For every rating percentage of responses calculated and clubbed as %L (28.8%), %H (39.2%) and %A (32.3%). The values for Top Box analysis are showing how data is following the pattern which could be derived from TB (12.8%), LB (15.7%) which gives NTB (-2.90%).

The Top Box Analysis for different parameters of the group i.e. gender, family type etc. also gives NTB as negative values the highest value is -16.0% in case of Nuclear family and lowest values is -2.7% in case of Male gender. This indicates that there are very high variations in every block of the district for economic impact due to various factors which may be influencing changes to their living conditions.

SS variables (i.e. Socio Impact Variables)

There are twelve questions (denoted as SS1 thru SS12) 5-point scale related to the need to measure social impact. The responses having rating from 1 (strongly disagree) to 5 (strongly agree) received from participants (either borrower or non-borrower) of all the three blocks. For every rating percentage of responses calculated and clubbed as %L (35.3%), %H (32.7%) and %A (31.9%). The values for Top Box analysis are showing how data following the pattern which could be derived from TB (8.3%), LB (18.5%) which gives NTB (-10.2%).

The Top Box Analysis for different parameters of the group i.e. gender, family type etc. also gives NTB as negative values the highest value is -23.6% in case of Nuclear family and lowest values is -0.4% in case of Joint family. This indicates that there are very high variations in all blocks of the district for social impact due to various factors which may be influencing changes to their living conditions.

5.2.2. Test for Normality

The survey form consist of are Likert scale data (5 point and 2-point scale) is a multi-item scale and ordinal data without intervals. The resulting distribution is then assumed to be metric and can be tested for normality. So, five items each with a range of 1 to 5 would combine to yield a Likert scale with a range from 5 to 25, with combined data is treated as being metric (similarly for 2 point 5 to 10). This is one of the points of having multi-item Likert scales, which converts ordinal measures into metric data more suitable for multivariate analysis.

To analyse ordinal data statistically, non-parametric tests should be used i.e. Anderson-Darling Test. To test the normality of every data items means they are relatively close to the fitted normal distribution line. The p-value > 0.05 significance level then we fail to reject the null hypothesis. Non-parametric tests, such as the Mann-Whitney test, do not assume a normal or a continuous distribution.

SV variables (i.e. Savings Habit related Variables)

The normality test is a basic stepfor these variables are testing of hypotheses and the results show the non-normality for SV variables. The results of Anderson Darling show that $p<0.05$ for every variable confirms non-normal.

IN variables (i.e. Insurance Habit Related Variables)

The results of Anderson Darling show that $p<0.05$ for every variable confirms non-normal.

MC variables (i.e. Challenges in Availing Micro Credit Related Variables)

The normality test for these variables is basic steps for testing of other hypotheses and the results for MC variables show the non-normality.

MS variables (i.e. Challenges in Availing Micro Saving Related Variables)

The results of Anderson Darling show that $p<0.05$ for every variable confirms non-normal.

MI variables (i.e. Challenges in Availing Micro Insurance Related Variables)

The results of Anderson Darling show that $p<0.05$ for every variable confirms non-normal.

SE variables (i.e. Economic Impact Variables)

The normality test for these variables is basic step for testing of other hypotheses and the results for SE variables show the non-normality.

SS variables (i.e. Socio Impact Variables)

The normality test for these variables is basic steps for testing of other hypotheses and the results for SS variables show the non-normality.

5.2.3. Test for Data Reliability

It is essential to understand before analyses of data, the responses received from participants to every question in the survey are internally consistent; means how closely related a set of items are as a group. Alpha was developed by Lee Cronbach in 1951. Cronbach's alpha is computed by correlating the score for each scale item with the total score for each observation (usually individual survey respondents or test takers), and then comparing that to the variance for all individual item scores: In addition to measuring internal consistency exploratory factor analysis (Kline P, 1994) is one method of checking dimensionality (Tavakol, Dennick, 2011).

SV variables (i.e. Savings Habit related Variables)

The Cronbach's α for **SV variables** data is **0.801** and for standardized data item is **0.784** which reflects excellent and most reliable to internal items consistency.

IN variables (i.e. Insurance Habit Related Variables)

The Cronbach's α for **IN variables** data is **0.887** and for standardized data item is **0.884** which reflects excellent and most reliable to internal items consistency.

MC variables (i.e. Challenges in Availing Micro Credit Related Variables)

The Cronbach's α for problem in micro credit i.e. **MC variables** data is **0.976** and for standardized data item is **0.976** which reflects excellent and most reliable to internal items consistency.

MS variables (i.e. Challenges in Availing Micro Saving Related Variables)

The Cronbach's α for problem in micro savings i.e. **MS variables** data is **0.978** and for standardized data item is **0.978** which reflects excellent and most reliable to internal items consistency.

MI variables (i.e. Challenges in Availing Micro Insurance Related Variables)

The Cronbach's α for problem in micro insurance i.e. **MI variables** data is **0.893** and for standardized data item is **0.828** which reflects excellent and most reliable to internal items consistency.

SE variables (i.e. Economic Impact Variables)

The Cronbach's α for Economic Impact i.e. **SE variables** data is **0.911** and for standardized data item is **0.913** which reflects excellent and most reliable to internal items consistency.

SS variables (i.e. Socio Impact Variables)

The Cronbach's α for Social Impact i.e. **SS variables** data is **0.946** and for standardized data item is **0.947** which reflects excellent and most reliable to internal items consistency.

5.2.4. Test for Hypotheses

A hypothesis is a specific statement of prediction. It describes in concrete (rather than theoretical) terms what is expected to happen with present research study. Not all studies have hypotheses. A single study may have one or many hypotheses. In this present research study, some of the hypotheses formulated to analyze the impact and factors responsible. With reference to defined objectives the main hypothesis for the study is designed as follows:

H_O = Microfinance intervention by formal sources have not made socio-economic improvement in living standards of beneficiaries in the Dang district of Gujarat State.

Ha = Microfinance intervention by formal sources have made socio-economic improvement in living standards of beneficiaries in the Dang district of Gujarat State.

The above hypothesis is complex with respect to objectives and data to understand the socio-economic impact of formal and informal microfinance organizations with different parameters such as family type, residence area type, gender, socio economic status etc.; hence sub hypotheses tested independently using these parameters as it is more exploratory study. Assuming 95% level of confidence $\alpha = 0.05$ and p *value* (significant value) <= 0.05 (reject null hypothesis).Two different tests applied for every variable to confirm the hypothesis with group of parameters.

Note on partially accept / reject of null hypothesis

When a test gives significant difference for some of the variables in the group of variables then it implies Type I error or the means are not all equal (in which case the null hypothesis is false) thus the second option becomes a relatively plausible explanation for the size of the test statistic it does not mean that hypothesis isn't a conglomeration of two separate hypotheses.

5.2.4.1. Mann-Whitney U-test

This is a non-parametric equivalent test of the independent *t* test for two independent groups or variables such as family type (joint and nuclear) and gender (male and female) for ordinal data and the dependent variables such as SV, IN, MC, MS, MI, SE and SS respectively were either ordinal or continuous. The Mann-Whitney U test is used for nonparametric data analysis; could be an alternative and independent t-test which may not true for some other cases. The Mann-Whitney U test may provide different conclusions about data according to assumptions made about data's distribution. The basic assumptions for the test are whether the two populations differ, by determining if there were differences in medians between groups. The different conclusions based on the shape of the distributions of data. Several assumptions for this test need to be met. The most important are:

a. Coincidence of the sample and
b. Independence of observations.

SV variables (i.e. Savings Habit Related Variables)

For SV variables the Mann-Whitney test concludes that the difference between medians for both gender type (male v/s female) was not statistically significant (as p>0.05) and hence the null hypothesis is not rejected i.e. **H.1o.** Microfinance intervention has not

made socio-economic improvement by inculcating saving habits in different gender beneficiaries of Dang District of Gujarat State).

The family type plays vital role it seems. Only two variables SV4 and SV1 (with family type grouping) having $p<0.05$ which could lead for different conclusion and could be confirmed with further analysis.

IN variables (i.e. Insurance Habit Related Variables)

For IN variables the Mann-Whitney test concludes that the difference between medians for both gender type (male v/s female) and for family type (joint v/s nuclear) was not statistically significant as $p>0.05$ and hence the null hypothesis is fail to reject, i.e.**H.3o** Microfinance intervention has not made socio-economic improvement by inculcating insurance habits in different gender beneficiaries of Dang District of Gujarat State and **H.4o** Microfinance intervention has not made socio-economic improvement by inculcating insurance habits in different family type beneficiaries of Dang District of Gujarat State.

MC variables (i.e. Challenges in Availing Micro Credit Related Variables)

For MC variables the Mann-Whitney test concludes that the difference between medians for both gender type (male v/s female) for all variables $p>0.05$ and hence the null hypothesis is fail to reject i.e. **H.11o.** There are problems faced in availing micro credit services by different gender beneficiaries of Dang District of Gujarat State.

In case of family type grouping (joint v/s nuclear) for variables MC2 thru MC9 the $p< 0.05$ which means statistically significant while other variables MC10 thru MC12 having different p values that indicates to analyze extensively. It means that credit linkages with marketing and insurance is weak or not existing and strong need for training.

MS variables (i.e. Challenges in Availing Micro Saving Related Variables)

For MS variables the Mann-Whitney test concludes that the difference between medians for both gender type (male v/s female) for all variables $p >0.05$ and hence the null hypothesis is fail to reject **H.13o.** There are no problems in availing micro savings services by different gender beneficiaries of Dang District of Gujarat State.

In case of family type grouping (joint v/s nuclear) for all variables the p values <0.05 which means statistically significant thus the null hypothesis is rejected i.e. **H.14a.** There are problem in availing micro savings services by different family type beneficiaries of Dang District of Gujarat State.

MI variables (i.e. Challenges in Availing Micro Insurance Related Variables)

For MI variables the Mann-Whitney test concludes that the difference between medians for both gender type (male v/s female) for all variables p>0.05 and hence the null hypothesis is fail to reject i.e. **H.15o.** There are no problems in availing micro insurance services by different gender beneficiaries of Dang District of Gujarat State.

And in case of family type grouping (joint v/s nuclear) for all MI variables having p>0.05 which means statistically not significant thus the null hypothesis is fail to reject i.e. **H.16o.** There are no problems in availing micro insurance services by different family type beneficiaries of Dang District of Gujarat State.

SE variables (i.e. Economic Impact Variables)

For SE variables the Mann-Whitney test concludes that the difference between medians for both gender type (male v/s female) for variables SE1 thru SE6 the p>0.05 and hence the null hypothesis is failing to reject i.e. **H.5o.** Microfinance intervention has not made improvement in economic status in different gender beneficiaries of Dang District of Gujarat State; the variable SE7 having p <*0.*05 having mean ranks values with respect to gender grouping for SE1 variable (improvement in income level) is higher and for SE7 variable (reduced indebtedness) is lower in both cases to female.

The analysis for family type grouping (joint v/s nuclear) for all variables *p*<0.05 means statistically significant and hence null hypothesis is rejected i.e. **H.6a.** Microfinance intervention has made improvement in economic status in different family type beneficiaries of Dang District of Gujarat State.

SS variables (i.e. Socio Impact Variables)

For SS variables the Mann-Whitney test concludes that the difference between medians for both gender type (male v/s female) for variables SS1 thru SS7, SS9 and SS10 having p>0.05 and hence the null hypothesis is fail to reject i.e. **H.8o.** Microfinance

intervention has not made improvement in social status in different gender beneficiaries of Dang District of Gujarat State.

But variable SS8 (increase in source of income contributed by women family members), SS11 (increase involvement of women participation in social activities) and SS12 (improved women participation in local panchayat) having p <*0.*05 having mean ranks values with respect to gender grouping for SS1 variable (reduced dependence upon informal finance source) is higher and for SS7 variable (increasing in capacity building through training) is lower in both cases to female.

The analysis for family type grouping (joint v/s nuclear) for all variables $p<0.05$ means statistically significant and hence null hypothesis is not rejected i.e. **H.9o.** Microfinance intervention has not made improvement in social status in different family type beneficiaries of Dang District of Gujarat State.

5.2.4.2. Levene's Test for Equality of Variance

The Levene's test (Levene 1960) is used to test for all *k* different variables with an assumption of equal variances. The equal variances across variables are called homogeneity of variance which is important condition in *parametric test* such as t-test and F-test. Some statistical tests e.g. the analysis of variance (ANOVA i.e. F Values), assume that variances are equal across groups (e.g. male v/s female, rural v/s urban etc.) or variables. The Levene test the following hypothesis. Where for every i = 1, 2, 3….k and j = 2.3.4…..n

H_0: $\sigma 21=\sigma 22=\ldots=\sigma 2k$ H_a: $\sigma 2i\neq\sigma 2j$ for at least one pair (*i*,*j*).

SV variables (i.e. Savings Habit related Variables)

The assumptions of equal variances for SV variables under gender grouping observe for F values the variables SV3 and SV6 having the p < 0.05 hence to conclude about the null hypothesis is partially fail to reject; for these variables, it was assumed variances are equal while for remaining variables the p >0.05 and variances are not equal to conclude the null hypothesis is partially rejected. Such situations allow us to check t values for equality of mean i.e. $mean_{\text{male}} = mean_{\text{female}}$; whereas again the p values for all variables are >0.05 and hence we accept our alternate hypothesis.

The Levene's test for SV variables under family type grouping assuming variances are equal gives F values for variables SV1, SV3 thru SV6 (i.e. saving to face uncertainties relating to employment, for children education, marriage, old age security and to repay loan amount respectively) with $p<0.05$ hence it can be concluded that the null hypothesis is partially fail to reject for these variables respectively, while for variables SV2, SV7 and SV8(i.e. saving to face uncertainties relating to health, to maintain social status or for any other purpose respectively) for where it was assumed variances are equal but $p >0.05$ which conclude the null hypothesis is partially rejected. Such situations allow us to check other test i.e. equality of mean i.e. $mean_{joint} = mean_{nuclear}$ whereas again for all variables the $p>0.05$ and hence we accept our alternate hypothesis.

IN variables (i.e. Insurance Habit Related Variables)

The assumptions of equal variances for IN variables under gender grouping the F test values for variable IN3 is significant and $p<0.05$ hence it can be concluded that the null hypothesis is partially fail to reject when it was assumed variances are equal while for variables IN1, IN2, IN4 and IN5 the $p>0.05$ for these cases variances are not equal to conclude the null hypothesis is partially rejected. Such situations allow to check t test for equality of mean i.e. $mean_{male} = mean_{female}$ whereas for all variables again the $p>0.05$ and hence we accept our alternate hypothesis.

The Levene's test for IN variables under family type grouping assuming variances are equal gives F values for variables IN3 and IN5 with $p<0.05$ hence it can be concluded that the null hypothesis is partially fail to reject for these variables respectively, while for variables IN1, IN2 and IN4 where it was assumed variances are equal but $p >0.05$ which conclude the null hypothesis is partially rejected. Such situations allow us to check other test i.e. equality of mean i.e. $mean_{joint} = mean_{nuclear}$ whereas again for all variables the $p>0.05$ and hence we accept our alternate hypothesis.

MC variables (i.e. Challenges in Availing Micro Credit Related Variables)

The assumptions of equal variances for MC variables under gender grouping the F values for variables MC11 and MC12 having $p< 0.05$ hence it can be concluded that the null hypothesis is partially fail to reject for these variables respectively, where it was assumed variances are equal while for remaining variables MC1 thru MC10 the $p >0.05$ for these cases variances are not equal to conclude the null hypothesis is partially rejected. Such situations

allow us to check the values of t test for equality of mean i.e. $mean_{male} = mean_{female}$ whereas again for all variables the $p>0.05$ and hence we accept our alternate hypothesis.

The Levene's test for MC variables under family type grouping assuming variances are equal gives F values for variables MC1 thru MC9 with $p<0.05$ hence it can be concluded that the null hypothesis is partially fail to reject for these variables respectively, while for variables MC10 thru MC12 where it was assumed variances are equal but $p>0.05$ which conclude the null hypothesis is partially rejected. Such situations allow us to check other test i.e. equality of mean i.e. $mean_{joint} = mean_{nuclear}$ whereas again for MC2 thru MC9 the $p<0.05$ hence we fail to reject the null hypothesis whereas for variables MC1, and MC9 thru MC12 the $p>0.05$ we accept alternate hypothesis.

MS variables (i.e. Challenges in Availing Micro Saving Related Variables)

The assumptions of equal variances for MS variables under gender grouping the F values for variables MS1 and MS3 having $p>0.05$ in these cases variances are not equal to conclude the null hypothesis is rejected. Such situations allow us to check the values of t test for equality of mean i.e. $mean_{male} = mean_{female}$ whereas again for all variables the $p>0.05$ and hence we accept our alternate hypothesis.

The Levene's test for MS variables under family type grouping assuming variances are equal gives F values for variables MS1 thru MS3 with $p<0.05$ hence it can be concluded that the null hypothesis is fail to reject for these variables respectively, it was assumed variances are equal. Such situations allow us to check other test i.e. equality of mean i.e. $mean_{joint} = mean_{nuclear}$ whereas again for MS1 thru MS3 the $p<0.05$ hence we fail to reject the null hypothesis.

MI variables (i.e. Challenges in Availing Micro Insurance Related Variables)

The assumptions of equal variances for MI variables under gender grouping the F values for variable MI4 having $p < 0.05$ hence it can be concluded that the null hypothesis is partially fail to reject for this variable, where it was assumed variances are equal while for remaining variables MI1 thru MI3 the $p>0.05$ for these cases variances are not equal to conclude the null hypothesis is partially rejected. Such situations allow us to check the values of t test for equality of mean i.e. $mean_{male} = mean_{female}$ whereas again for all variables the $p>0.05$ and hence we accept our alternate hypothesis.

The Levene's test for MI variables under family type grouping assuming variances are equal gives F values for variables MI1 thru MI3 with $p<0.05$ hence it can be concluded that the null hypothesis is partially fail to reject for these variables respectively, while for variable MI4 where it was assumed variances are equal but $p>0.05$ which conclude the null hypothesis is partially rejected. Such situations allow us to check other test i.e. equality of mean i.e. $mean_{joint} = mean_{nuclear}$ whereas again for MI1 thru MI4 the $p>0.05$ we accept alternate hypothesis.

SE variables (i.e. Economic Impact Variables)

The assumptions of equal variances for SE variables under gender grouping the F values for variable SE7 having $p < 0.05$ hence it can be concluded that the null hypothesis is partially fail to reject for this variable, where it was assumed variances are equal while for remaining variables SE1 thru SE6 the $p>0.05$ for these cases variances are not equal to conclude the null hypothesis is partially rejected. Such situations allow us to check the values of t test for equality of mean i.e. $mean_{male} = mean_{female}$ whereas again for all variables the $p>0.05$ and hence we accept our alternate hypothesis while in case of variable SE7 the $p<0.05$ where we fail to reject null hypothesis.

The Levene's test for SE variables under family type grouping assuming variances are equal gives F values for variables SE1 thru SE7 with $p<0.05$ hence it can be concluded that the null hypothesis is partially fail to reject for these variables respectively, while for variable MI4 where it was assumed variances are equal but $p>0.05$ which conclude the null hypothesis is partially rejected. Such situations allow us to check other test i.e. equality of mean i.e. $mean_{joint} = mean_{nuclear}$ whereas again for SE1 thru SE7 the $p>0.05$ we accept alternate hypothesis.

SS variables (i.e. Socio Impact Variables)

The assumptions of equal variances for SS variables under gender grouping the F values for variables SS1, SS6 and SS9 having $p < 0.05$ hence it can be concluded that the null hypothesis is partially fail to reject for these variables respectively, where it was assumed variances are equal while for remaining variables SS2 thru SS5, SS7, SS8 and SS10 thru SS12 the $p>0.05$ for these cases variances are not equal to conclude the null hypothesis is partially rejected. Such situations allow us to check the values of t test for equality of mean i.e. $mean_{male} = mean_{female}$ whereas again for all variables SS8, SS11 and SS12 the $p<0.05$

again we fail to reject the null hypothesis but for variables SS1 thru SS7 and SS9, SS10 the $p>0.05$ and hence we accept our alternate hypothesis.

The Levene's test for SS variables under family type grouping assuming variances are equal gives F values for variables SS1 thru SS12 with $p<0.05$ hence it can be concluded that the null hypothesis is fail to reject and it was assumed variances are equal. Such situations allow us to check other test i.e. equality of mean i.e. $mean_{joint} = mean_{nuclear}$ whereas again for SS1 thru SS12 the $p<0.05$ hence we fail to reject the null hypothesis also

5.3. Factor Analysis

Factor analysis is a way to take mass of data and shrinking to a smaller data set that is more manageable and understandable. It's a way to find hidden patterns, show how those patterns overlap and show what characteristics are seen in multiple patterns. It is also used to create set of variables for similar items in the set.

The factor analysis conducted to find out most common variables from SV, IN, MC, MS, MI, SE and SS respectively which are contributing high variability. The high variability of these variables provides final decisions in different avenues indicated in survey questions. The variables obtained from this analysis are being used for Relation analysis.

- The factor analysis of eight SV Variables gives 1 factor (62% variability) with 4 variables highest variability

Table - 5.1: Saving Habit related (SV) factor			
No. of Factor	**Variability**	**Variables**	**Determinants**
1. Saving Factor	62%	SV1	Employment
		SV2	Health
		SV3	Child Education
		SV7	Social Status

- Five IN variables gives 1 factor (79% variability) with 4 variables

Table - 5.2 : Insurance Habit related (IN) factor			
No. of Factor	**Variability**	**Variables**	**Determinants**
1	79%	IN1	Financial security
		IN2	Accident and death
		IN3	Peace of mind
		IN4	Risk bearing capacity

- Twelve MC variables(problems in availing microcredit) gives 2 factors (79% variability) and 12 variables

Table - 5.3: Problems in Availing Microcredit (MC)			
No. of Factor	**Variability**	**Variables**	**Determinants**
1. Loan Related	79%	MC1	Loan Amount
		MC2	Procedure
		MC3	Interest
		MC4	Timeliness
		MC5	Supervision check
		MC6	Repayment policy
		MC7	Nearby (transport)
		MC8	Proximity
		MC9	Waiting Period
2. Capacity Building		MC10	Marketing Linkage
		MC11	Insurance Linkage
		MC12	Training

- Three MS variables i.e. Problems in Availing Micro Savings service give 1 factor (96% variability) with 3 variables

Table - 5.4: Problems in Availing Micro Savings (MS)			
No. of Factor	**Variability**	**Variables**	**Determinants**
1	96%	MS1	Procedure
		MS2	Reward
		MS3	Withdrawal

- Four MI variables i.e. Problems in Availing Micro Insurance gives 1 factor (85% variability) wit4 variables

Table - 5.5: Problems in Availing Micro Insurance (MI)			
No. of Factor	**Variability**	**Variables**	**Determinants**
1	85%	MI1	Procedure
		MI2	Premium
		MI3	Claim settlement
		MI4	Grievance hearing

- Seven SE variables i.e. Economic Impact -gives 1 factor (71% variability) with 6 variables

Table - 5.6 : Economic Impact (SE)			
No. of Factor	**Variability**	**Variables**	**Determinants**
1	71%	SE1	Increase Income
		SE2	Asset position
		SE3	**Savings**
		SE4	Input purchase
		SE5	domestic purchase
		SE6	Employment

Of which highest impact was on increased household's savings i.e. 88% (Table - 4.120) Reduced indebtedness?

- Twelve SS variables i.e. Social Impact gives 1 factor (74% variability) with 9 variables respectively.

Table 5.7: Social Impact (SS)			
No. of Factor	**Variability**	**Variables**	**Determinants**
1	74 %	SS4	Decision making
		SS5	Quality of life
		SS6	Resource utilization
		SS7	Training
		SS8	Women Income
		SS69	Women education
		SS10	Women Hygiene
		SS11	Women in social activities
		SS12	Women in Panchayat

5.4. Relationship Analysis

Relationship between variables drawn after factor analysis performed for savings, insurance, socio economic impact (i.e. to test relationship between variables) and micro credit respectively tested by using bivariate *correlation coefficient*. It was assumed that all these factors are independent and having no relationship as a practical approach due to following reasons tested with significant relationship assume **correlated values are >= 0.3**.

5.4.1. Relationship of SV Variables

IN Variables and MI Variables

The relationship between the variables of factors of SV Variables with IN Variables and MI variables are considered with assumption savings and insurance are one and same with a thin line difference to protect risks. The analysis reflects impact of savings with insurance coverage to useful in future requirements to householders; hence the null hypothesis is rejected.

SE Variables and SS Variables

The relationship between the variables of factors of SV Variables with SE Variables and SS variables are considered with assumption that savings causes economic

impact and social development among householders. The analysis reflects negative relationship of impact of savings in economic benefits and social benefits to householders; hence the null hypothesis is rejected.

MC Variables and MS Variables

The relationship between the variables of factors of SV Variables with MC Variables and MS variables are considered with assumption that savings are complements to microcredit and micro savings are complement in long term economic development among households. The analysis reflects less relationship with microcredit while micro saving shows impact of savings in economic benefits and social benefits to households; hence the null hypothesis is rejected.

5.4.2. Relationship of IN Variables

SE Variables and SS Variables

The relationship between the variables of factors of IN Variables with SE Variables and SS Variables are considered with assumption that insurance are complements to microcredit and micro savings in long term economic and social development among households. The analysis reflects less relationship and negative in economic benefits and social benefits to households; hence the null hypothesis is rejected.

MC Variables, MS Variables and MI Variables

The relationship between the variables of factors of IN Variables with MC Variables, MS Variables and MI Variables are considered with assumption that insurance are required and may be helpful in long duration to microcredit, micro savings and micro insurance will support economic and social development among households. The analysis reflects strong relationship and positive in economic benefits and social benefits to households; hence the null hypothesis is rejected.

5.4.3. Relationship of SE Variables

SS Variables

This explains a positive significant relationship between economic and social factor that shows the impact on households.

MC Variables, MS Variables and MI Variables

At microfinance level these variables are showing negative significant relationships which addresses that either scheme is not properly implemented or householders are not able to understand the importance.

5.4.4. Relationship of SS Variables

MC Variables, MS Variables and MI Variables

This explains a negative significant relationship between social factor that shows the impact on households with microfinance variables which address that either scheme are not properly implemented or householders are not able to understand the importance.

5.4.5. Relationship of MC Variables

MS Variables and MI Variables

The relation explains a positive significant relationship between factors of micro credit with micro savings and micro insurance respectively which encourages that if efforts increased in training and education of rural householders possibly the impact will be more.

5.4.6. Relationship of MS Variables

MI Variables

This also explains a positive significant relationship between factors of micro savings with micro insurance respectively which encourages that if efforts increased in training and education of rural householders possibly the impact will be more.

5.5. Discriminant Analysis

Discriminant analysis is a technique that is used by the researcher to analyze the research data when the criterion or the dependent variable is categorical and the predictor or the independent variable is interval in nature. The term categorical variable means that the dependent variable is divided into several categories. The objective of Discriminant analysis is to develop Discriminant functions that are nothing but the linear combination of independent variables that will discriminate between the categories of the dependent variable in a perfect manner.As in statistics, everything is assumed up until infinity; when the dependent variable has two categories, and then the type used is two-group Discriminant

analysis. If the dependent variable has three or more than three categories, then the type used is multiple Discriminant analysis.

To identify the factors that make a householder a borrower or non-borrower in this study two broad groups of characteristics or variables assumed such as the first group consists of *demographic* and *economic* respectively while the characteristics of other group includes *habits* such as *saving habit* and *insurance habit* respectively.

There are two types of Discriminant Analysis one if it is used for two separate groups it is called Discriminant Function Analysis (DFA) and for more than two groups it becomes the Canonical Varieties Analysis (CVA) method is used. RA Fisher, Hoteling and Mahalanobis (1930) developed three different approaches for solving the similar problem but later in RA Fisher's solution; Hotelling T2 test and Mahalanobis D2 distance were combined to device Discriminant Analysis. These two groups are identified as follows:

- **Variables for first group** – some of the important variables assumed (referenced to Kuppuswamy Scale) such as gender, family type, family income, age, education, house type, house ownership and residence area (rural, urban – for Dang District it is considered only rural so may not be considered) and so on…
- **Variables for second group** – some of the important variables for *habits* are considered with respect to saving, no saving, insurance and no insurance habits and so on.

The linear combinations for a Discriminant analysis also known as Discriminant function and analyzed using **Stepwise Method**. The **Wilks' lambda (Λ) (1938)** is a test statistics that's reported in results from MANOVA, Discriminant Analysis and other multivariate procedure. In MANOVA; Λ tests if there are difference between group means for a particular combination of dependent variables while in ***Discriminant analysis this Λ tests*** how well each level of independent variable contributes to the model. The scale range from 0 to 1, where 0 means total discrimination and 1 means no discrimination.

The test of equality of group means with Wilks' Lambda for two groups such as Family Type (Wilks' Lambda = 0.99 and *p value* =0.04) and Skill Status (Wilks' Lambda =

0.99 and *p value* = 0.02) are most important independent variables and other variables are least important.

The second method is **Canonical Discriminant Functions;** the significance of the estimated value of Wilks' Lambda indicates how well the function separates participants into two groups (Borrower and Non-Borrower). Smaller values of Wilks' Lambda indicate greater discriminatory ability of the function (Uddin, Meah, & Hussain, 2013). It is observed from the table that estimating the Discriminant function is significant for Wilks' Lambda = 0.984 and *p value* =0.008. The method gives un-standardized Discriminant Function coefficients which are used to construct the actual prediction equation used to classify new cases. Based on the coefficients following equation drawn:

$$Z = -4.184 + 1.343 Family\ Type + 1.974 Skill\ Status$$

5.6. Conclusion

In a country where 10% of the people garner 80% of the country's wealth, 70% of India's population lives in the rural areas, which are marked by low literacy rates, lack of proper sanitation and medical facilities and inadequate growth opportunities. Since its inception, the Indian MFI sector has been perceived as a predominantly ruralfocused sector as compared from other different countries say Latin America and Africa where MFIs have shifted their focus from rural to urban. The researcher has considered all the elements of so called finance Triad – credit, savings and insurance and not just one of them as seen in the literature. It can be said that effective and efficient microfinance services can result in consumption smoothing and income generations for a household.

The present thesis is based on study conducted on impact of micro financing activities through formal financial institutes in all the three talukas/blocks of Dang district of Gujarat state. Different variables for measuring socio economic benefits drawn from help and support provided by different financial institutes from Dang District were taken under study. Variables selected in the present study for family structure included gender, family type

(nuclear, joint) and economic status (APL, BPL) of the family and residence area (urban, rural).

Objectives related to the influence of gender, family structure, and residence areas with socio economic status were framed. Based on these objectives; null hypotheses had defined which test no influence of all these group parameters and no relation between the variables drawn from these groups. Three standard scales *viz.* socio-economic status, family type, residence area etc. we reemployed to generate primary data. Software for Statistical tools such as Excel 2007, IBM SPSS v20 and MINITAB were used for data analysis and interpretation. The survey data collected to analyze the impact and benefit drawn by beneficiaries with respect to credit, savings and insurance schemes. The variables were assigned name SV, IN, MC, MS, MI, SE and SS respectively.

The data were *Likert Scale* (ordinal form) and non-parametric; hence Mann-Whitney U Test (equivalent to parametric t test) and Levene's Test (equivalent to parametric ANOVA) were conducted. The analysis results from Mann Whitney U test and Levene's test for every variable's data according to different combinations of gender, family type or socio economic status provides conclusions about the null hypotheses accordingly (either partly accepted or partly rejected); because all these variables are influenced with gender, family type, and socio-economic status independently.

There were (in bracket denotes correlation combination) for every variables such as SV (19), IN (10), MC (66), MS (3), MI (6), SE (16) and SS (63) respectively test the hypothesis on using Spearman Correlation Coefficient ($p<0.05$). The relations were analyzed for every combination with gender (boys, girls) or family type (joint, nuclear) or socio economic status.

After observing these results it was concluded that there are some of the variables having common phenomenon (called factor) and hence after adding some more new objectives data were through principal component analysis. The factor analysis calculated different factors of SV variables 1 component, IN variables 1 component, MC variables 2 components, MS variables 1 component, MI variables 1 component, SE variables 1 component and SS variables 1 component respectively. One more analysis also performed

after finding factors i.e. perfuming correlation between the variables of every factor and hence the null hypothesis framed for no correlation between variables was rejected.

The present study is a scientific methodological framework with well formulated null hypotheses and statistically analyzed correlation among variables of savings, insurance, micro credit, socio economic impact and social impact with gender, family type and residence area which shows there is a correlation between variables.

Thus, every result in testing null hypotheses using different statistical analysis for defined objectives in this research study can be placed that some of the variables from SV, IN, MC, MS, MI, SE and SS having a correlation either positive or negative in combination with gender or family type or socio-economic status accordingly.

5.7. Suggestions

Finally, some suggestions are made both to the bankers and the householders to make microfinance more effective and efficient support in development of quality of life, women empowerment, improving overall socio-economic status etc., as the success of microfinance service implementation can also promote inclusive growth.

5.7.1. Suggestions for Beneficiaries

The success of Government schemes and proper implementation of these schemes by banks is not only responsibility but there is need of cooperation and participation of the beneficiaries of such schemes. The success and benefits could be possible

- The beneficiaries should make only *productive use of loan* taken for the purpose only or else trust of the bank will be lost and it will affect socio-economic development.
- Those beneficiaries who are illiterate or less literate should give priority to get good *education to their children under RTE Act*.
- The beneficiaries should understand the usage and adopt the latest technology. But today also Dang district is facing challenge of telecom and internet connectivity, so that should be improved promptly first.

Financial collapse is a nightmare for any individual. But what is financial collapse? To research it is when Debts>Assets leading to a suicidal situation. One of the main causes of this is *financial illiteracy,* is a disease that results in to financial collapse of any individual. Financial illiteracy has crippled especially in the lower class in our society for generations and generations now. To overcome this illness, one needs to understand the difference between emotional decisions from financial decisions. *Four important financial elements* should be imbibed in the ordinary way of living.

- Proper way to Save
- Borrow money effectively
- Control the cost of living
- Diversify the finances

The above needs to be taught as life skills. But especially among rural households the first two i.e. proper and regular savings and low cost of borrowing is utmost important. One these develop than one needs to control cost of living and diversify its finances. Hence, financial literacy is not only a skill but rather a life style that could result in financial stability. *Financial stability* is the by product of a proper lifestyle.

5.7.2. Suggestions for Bankers/Lenders

Some important suggestions based on this study and may prove helpful to the bankers to contribute in development of inclusive growth in Dang District:

- Banks and MFIs should adopt *deposit driven* approach rather than credit driven. Fortune for the financial sector is lying as the base of the pyramid through which real financial inclusion of poor is possible.
- For effective credit delivery bank, must use group bank linkage model effectively. Beneficiaries should *organize themselves into groups* with mutual trust to get benefits of schemes. This concept helps in saving scheme concept also and cheaper finance from the bank through group.
- And Parallel government mechanism to supervise nonexistence of dummy groups.No doubt, banks are providing finance through this model *but the number of SHGs financed is less as reported by the bankers.* The reasons are that the banks prefer to finance an individual client rather than a group to fix the repayment responsibilities.
- It is important *spread financial literacy* among the rural poor because mere availability of the services cannot serve the purpose if the target group is unaware of it

and this can establish by direct communication with the rural people in organizing awareness programs and trainings in the villages.

- Stereotype on women and stigmatization should be discouraged to allow more of inclusive growth *women entrepreneurship* and participation.
- The Government of India is providing many facilities to encourage the bankers to promote financial inclusion to its full extent such as Debt waiver schemes, Financial Inclusion Fund (FIF), Financial Inclusion Technology Fund (FITF) etc., now the banks are required to develop more and more schemes under the microfinance net as per the needs of the rural poor and should *increase the fund allocation* towards the same.
- Banks should perform the *clusters analysis for the potential customers* which may be three types of the potential microfinance customers based on their perceptual differences for the microfinance services. The first (the rational) and the third clusters (the easy going) do not require many efforts on the part of bankers but the second cluster (the critical) requires special efforts.
- The banks should come up with more affordable schemes for them at reasonable terms. As the cluster profile stated that the critical group is comprised of the young, educated and the self-employed rural poor, the efforts should be made to provide for some non-financial assistance.
- Micro loans should be handled by a separate team and adopt cash flow-based lending approach and not to *treat micro loans, micro savings and micro insurance* as independent business lines but rater *interdependent.*
- In the rural financial market Dang district formal financial services are delivered by various entities viz. commercial bank with also its linkage programs with groups, cooperative bank and it is dominated by nationalised banks only with no single private sector bank. For integrated baking system these developments are considered as foremost step.

5.7.3. Suggestions for Creating Micro Insurance Awareness and Outreach

It is noticeable that there is absence of well-functioning market trading in risk. From table 5.8 it can be observed that nearly 62% of the total households were unaware about various micro life insurance schemes. Also, the awareness among borrower was more than that of non-borrowers.

Table – 5.8: Awareness and Importance of Micro Insurance (in brackets %)				
		Non-Borrower (Cases = 336)	**Borrower (Cases = 264)**	**Total (600)**
Awareness about Micro Life Insurance Policy	No	243 (72.3)	133 (50.4)	376 (62.7)
	Yes	93 (27.7)	131 (49.6)	224(37.3)
Saving Habit	No Saving Habit	134 (39.9)	25 (9.5)	159(26.5)
	Saving Habit	202 (60.1)	239 (90.5)	441(73.5)
Need of Insurance	No	229 (68.2)	125 (47.3)	354(59.0)
	Yes	107 (31.8)	139 (52.7)	246(41.0)

It can be observed from the table 5.9below that the number of dang households' beneficiaries of various micro life insurance schemes was too small of the total population i.e. only 22%; while 78% households reported no take-up for any micro life insurance service / product. Moreover, only LIC micro life insurance products dominated and there was no single respondent beneficiary for SBI group insurance and Government's insurance schemes PMJ-JBY and PMJ-SBY commenced in 2015.

Table – 5.9: Beneficiaries of the various micro life insurance scheme (in brackets %)				
Provider	**Micro Insurance Product**	**Non-Borrower (Cases = 336)**	**Borrower (Cases = 264)**	**Total (Cases:600)**
LIC	Jeevan Madhur	27 (8.0)	41 (15.5)	68(11.3)
	Jeevan Mangal	8 (2.4)	14 (5.3)	22(3.7)
	Bhaghay Laxmi	27 (8.0)	13 (4.9)	40(6.7)
	No Takers	**274 (81.5)**	**196 (74.2)**	**470 (78.3)**
SBI	Grameen Shakti	0	0	0
	Grameen Super Suraksha	0	0	0
	GarmeenBima	0	0	0
GOV	PMJ-JBY	0	0	0
	PMJ-SBY	0	0	0

As table 5.10 exhibits the common risk coping mechanisms which households would adopt were to borrow loans post event. Nearly 43% of the total households responded seasonal migration as their risk coping strategy. Uninsured households may ask for loans or deplete savings or sell their assets after they experience a shock to make up for income losses. Of total households nearly 3% of the households were to borrow loans post event and 13% relied on past savings as coping mechanism *ex-post* to a shock. Thus, credit didn't serve as a major coping mechanism *ex-post* to a shock.

Table – 5.10: Risk Coping Mechanism In absence of Insurance (in brackets %)			
Risk Coping Mechanism	**Non-Borrower (Cases = 336)**	**Borrower (Cases = 264)**	**Total (Cases 600)**
Take Loan	13 (3.9)	3 (1.1)	16 (2.7)
Use Savings	30 (8.9)	48 (18.2)	78 (13.0)
Sell Assets	5 (1.5)	3 (1.1)	8 (1.3)
Seasonal Migration	177 (52.7)	86 (32.6)	263 (43.8)
Any other	111 (33.0)	124 (47.0)	235 (39.2)

Table – 5.11: Reason for No Take-up of Micro Insurance (in brackets %)			
Reasons	**Non-Borrower (Cases = 336)**	**Borrower (Cases = 264)**	**Total (600)**
Unaware	85 (25.3)	49 (18.6)	134(22.3)
Lack of Access to formal Sources	65 (19.3)	25 (9.5)	90(15.0)
High Premium	55 (16.4)	56 (21.2)	111(18.5)
Lack of need	44 (13.1)	32 (12.1)	76(12.7)
Any other	87 (25.9)	102 (38.6)	189(31.5)

From the present study one can observe the paucity of demand for micro insurance in Dang district. Table 5.11 exhibits main causes for less take up for insurance services, not less than 22% showed lack of awareness and understanding of not only life micro insurance but rather overall insurance concept and product. The awareness is increasing post 2015 with launch of government's life micro insurance scheme. But despite this huge potential take-up of micro life insurance policies is still low and unable to transfer the low demand of micro insurance into bigger demand. Following approach can help to overcome this existing challenge in micro insurance sector-

- To build momentum at the bottom grassroots level about micro insurance it is imperative to make people, intermediaries and institutions providing services to be more sensitive towards understand functioning of micro insurance and its potential contribution in risk protection.
- The role of private companies along with certain financial perks should be increased in the distribution channel to reach maximum number of people in rural markets.
- Mandatory linkages to be made for small businesses to be made while providing either credit or savings services.
- It is imperative to channel micro insurance through text massages by government as the number of mobile users has enormously increased in rural areas. But today also

Dang district is facing challenge of telecom and internet connectivity, so that should be improved promptly.

5.8. Contribution of the Study

The entire work in this thesis is the original work, researches with respect to the socio-economic impact of microfinance by formal financial sources on their beneficiaries; for which at present there is no systematic study conducted so far in Gujarat and that to in Dang District. The primary focus of the study is to evaluate effectiveness and efficiency of microfinance service with respect to microcredit, savings and micro life insurance as vehicle of socio-economic transformation, whereby it suggests required modifications to strengthen their outreach to poor with long term sustainability of the same.

- This study has highlighted different factors with respect to credit, insurance and saving with reference to beneficiaries. An analysis of awareness, expectations and level of satisfaction of the beneficiaries has revealed the current state of affair.Banks which aims to escalate Microfinance facilities are advised to understand the factors responsible and modified their business strategy accordingly.
- The importance of microfinance intervention will increase in rural areas if their efforts and contribution are towards inclusive growth of that area.
- The analysis of data in this study supports the nature and extent of the microfinance services provided by the banks that would make both present and potential customers aware of the various schemes that are meant for them.

5.9. Key Findings of the Study

The microfinance services i.e. microcredit, micro savings and micro insurance were considered each in isolation and in combination with one another. The research questions were set for this study stated and targeted for the MFIs, banks and insurance institutions in Dang district (rural area) e.g. improvement in the living standards, reduction in vulnerability and services to women.

The major findings of this study are:

I. **With Respect to Survey Form –** different types of data were identified for the study and analyzed concludes that

a. There are basic concept differences and understanding about microfinance services among peoples who are *not much aware* about the Government Schemes and services provided by formal sources.

b. Bank accounts are essential for the day to day economic life, findings reveal that 73.5 % of the households reported having bank accounts in the Dang district.

c. *Less training and popularity* about microfinance services by formal sources to peoples.

d. The rural areas people's quality of life depends on agriculture farming and live stocks but most of the people are either illiterate or less qualified. There is *need of extensive literacy not only financial literacy*(education program).

e. The people are well settled and are *not below poverty line*, there is need of inclusive growth of the district, state and country since the Dang district is rich in natural resources too. The increased income is only usable for small business development or agriculture purpose.

f. *Credit services* are definitely providing positive change in very small proportion which could be increase with efforts.

g. There is *need of affordable rate of interest* from formal sources for microfinance for their services.

h. People are *using only saving as their safeguard* but able to understand about insurance services; there is need to make awareness about such schemes with positive approach.

i. Though there is socio-economic impact in aggregate but their liabilities also increased due to increase in purchase expenses, domestic expenses, less employment opportunities and due to seasonal impact loans are unpaid.

j. Similarly social impact has also affected because of dependency on knowledge for use of latest technology, products, resources and processes.

k. There is *need of more women participation and empowerment*. As there is scanty demand for credit, savings and insurance by female headed households indicating that female heads are generally less able to grab benefit of the financial services?

II. **With Respect to Statistical Analysis–** different types of data were statistically analyzed to confirm the study.

a. The data were grouped and it was observed that results from family type group are attracting more deep interest. The results of joint family type are different than nuclear family type.

b. The family type has definitely increased the dependency of social impact and economic impact especially borrowing, better utilization of resources, education to women family members and women empowerment respectively.

c. Every factor grouped in calculation reflects common nature of issues as listed above in ***b.***

d. The discriminate analysis also reflects the outcome of socio-economic impact definitely depends on family type and the skill of the member (i.e. education, occupation and knowledge).

e. These results in imparting proper training form the government and other dependent organizations.

f. In contrast to the researcher's expectations, that majority of loans could be substitute for insurance i.e. for making up of any monetary loss occurred due to uncertain event, but that was not so and only 3% credit went in this purpose.

g. It can be said that households didn't saved mainly to build surplus against future calamities rather for overall productive use of the same.

III. **Executive Summary of findings**

The study of all the three blocks from Dang district includes both types of participants (e.g. borrowers and non-borrowers) which includes (for study overall 600 cases) male 81.6% and female 18.4% respectively. These participants belonged to different family structure i.e. Joint (56.0%) or Nuclear (44.0%) families and different economic level living in different residence areas of District.

The **Kuppuswamy Scale's** analysis (Table – 4.5) findings revealed that none of the participants belongs to Upper (I) and Lower (V) level respectively while 21% to Upper Middle (II), 64% to Lower Middle (IIII) and 15% to Upper Lower (IV) respectively shows that people are not below the poverty line. Only 138 households' members from samples had taken up all the *three major microfinance services of credit, savings and insurance.* This

revealed that microfinance activities are not reaching to common people and not able to understand the benefits to them (Table – 4.36).

1. Top-Box Scoring of Scale Data

Savings – The analysis reveals that 73.5% has habit of thrift while 26.5% of the total households' respondents had no saving habit which means still there are some reasons for savings (Table 4.14)

Micro insurance – The62.7% households are unaware about any micro *insurance schemes* while 37.3% having knowledge about micro insurance schemes (Table – 5.8) but only 21.7% are insurance takers (Table – 5.9).

Economic Impact – The top box analysis of responses from 600 participants irrespective to any type of parameters (i.e. gender, family type) in Likert Scale (5-point) format shows nearer to NU (%A) i.e. nearly 32% while there are a smaller number of Strongly Agree (i.e. 13% %TB) and Strongly disagree (i.e. 16% - %LB). These % values show that most of the participants neither understand the benefits could be drawn properly or not able to express in favour of these concepts at their district(Table – 4.32).

Social Impact – Irrespective of any group parameters it shows that most of the responses are near to NU (%A) i.e. nearly 32% while there are a smaller number of Strongly Agree (i.e. 8% - %TB) and Strongly disagree (i.e. 18.5% - %LB) reveals that most of the participants are not able to understand the benefits in favor of these concepts of within the district (Table – 4.34). Furthermore, it indicates that there are very *high variations in every blocks of the district* for both social and economic impact which may be due to various factors (needs to find out) causing changes to their living conditions.

Problem in Availing Microfinance Service – The Micro *Credit Service* for overall households' perception on challenges faced in availing *service,* 80% reported they faced problem and only 20% showed satisfaction for the service availed. Out of these 20% participants, 15% are borrowers which were satisfied and 5% are non-borrower (Table – 4.37). Only 57% participants were satisfied with or *Micro Savings Service*while 43% had faced barriers for the same (Table – 4.38).

For *Micro Insurance Services* 76% of the households faced challenges in availing such service while only a handful of household's i.e. only 24% participants who didn't faced any challenges for the same. (Table – 4.39)

2. Normality test of Data

Basically, normality test confirms the nature of data collected in study as every data are discrete and non-parametric in nature. The normality tests for 2-point Likert Scale data and 5-point Likert Scale data leads data are non-normal and skewed in nature as results from top box analysis; this leads us to test the different hypotheses to conclude the impacts on different groups (such as gender, family type and borrower type) withbehavior of data. The possible tests of these non-parametric data are Mann Whitney U test and Levene's Test.

3. Cronbach – Reliability Test

Cronbach's alpha is a measure used to assess the reliability, or internal consistency, of a set of scale or test items (surveyed as *Likert data*) i.e. the reliability of any given measurement refers to the extent to which it is a consistent measure of a concept, and Cronbach's alpha is one way of measuring the strength of that *consistency*.The result obtained in here for every variable independently with their analysis indicated that none of the question be removed from the survey; the results reflects overall reliability coefficient for a set of variables (i.e. every question is a variable and inter-dependent).

4. Mann-Whitney U-test

One of the non-parametric alternative tests to the independent *sample t-test* which is used to compare two sample means drawn from the same population (e.g. male and female), and used to test whether two sample means are equal or not.

Saving habit **–** the test concludes that the difference between medians for gender type (male v/s female) was not statistically significant (as $p > 0.05$) and hence Microfinance intervention has not made socio-economic improvement by inculcating saving habits in different gender beneficiaries. Also, male members saving habit surpassed than that of females which needs active measure to strengthen female socio-economic status. The joint family type plays vital role it seems as their saving habit was found to be more than that of nuclear.

*Insurance habit***–** the tests concludes that the difference between medians for gender type (male v/s female) and for family type (joint v/s nuclear) was not statistically significant as p >0.05 and hence microfinance intervention has not made socio-economic improvement by inculcating insurance habits among beneficiaries

Economic Impact – in this study it was required to understand and to find out whether all *micro finance schemes* providing economic empowerment to household in the districts. The analysis of surveyed data gives surprise results for different groups such as Gender group feels that no *improvement in income level* but it has *increased business expenses on purchase of inputs* and not *able to reduce indebtedness*. Similar survey was analyzed with Family type group and result show that nuclear family responses feel that *micro finance schemes* more protective than joint family type.

During the survey the study was with both types of households either they are borrower or non borrower (either belongs to any gender or family type) the results for borrowers reveals that though expenses has increased but employment opportunities also increased which non-borrowers are in opposite feel that savings and asset accumulation increase even though they are not dependent of micro finance schemes.

Social Impact – Every scheme launched are measured in two different impacts one economic impact which measures economic uplift of households and other is social impact which measures the benefits drawn for status in society such as literacy, women empowerment and education, change in quality of life etc.. It was observed in calculation with gender grouping male dominant society there is lack towards women empowerment and encouragement but nuclear family type are encouraging some time possibly these holds could be borrowers.

Challenges in Availing Micro finance Services – There are problems faced in availing *micro credit services* by different gender beneficiaries of Dang District. In case of family type grouping (joint v/s nuclear) for variables MC2 thru MC9 the $p < 0.05$ which means statistically significant while other variables MC10 thru MC12 having different p values that indicates to analyze extensively. It means that credit linkages with marketing and insurance is weak or not existing and strong need for training. The micro finance schemes recently introduced *Micro Savings Services* and *Micro Insurance Services* but the success of

these schemes are mostly dependent of earnings by individual and understanding of the schemes in general. These schemes need more effort to popularize schemes.

Thus, the overall results suggest that microfinance policies merely focused on expanding access to credit service which too faced high barriers to access by households. Though evidence indicated large number basic saving accounts operated by households which is indeed as integral component to enhance financial inclusion and generally it is assumed that if people have habit of thrift and access to savings accounts than the process of accumulation deposit itself draws member into the other banking services and enhance their familiarity with financial concepts; but this was not true in case of dang households and moreover, ignoring insurance service; are unlikely to improve welfare noticeably on average.

5. Levenes Test – measure of Variability

The Levene's test is used to test with assumptionfor variables have equal variances; which is precondition for *parametric test* such as t-test and F-test. Some statistical tests e.g. the analysis of variance (ANOVA i.e. F Values), assume that variances are equal across groups (e.g. male v/s female, rural v/s urban etc.) or variables.

Once data are tested through the **Mann-Whitney U-test;** the next step for data is to compare difference between two independent groups (e.g. gender or family type etc.) which could only possible through Leven's Test for equality of variance performed on these variables (such as SV, IN, MC, MI, MS, SE and SS) for different groups separately assuming variances are equal the results are indicating large differences in understanding and following the importance of micro fiancé schemes such as:

The concept of saving with male is more prominent for children's education and repayment of loan while this is differently taken by nuclear family type where their impotence with children education need for saving during uncertainties of employment, old age health related issues and children's marriage purposes. The insurance concept is equally understood by both genders but male feels it increases peace of mind and protection while different family types also feel the same.

The micro saving, insurance and credit schemes having high variability even either gender or family type which could possibly the financial organization not able to

promote these schemes properly. This also provide conclusion for economic impact and social impact.

6. Factor Analysis Outcome

This analysis gives us those reasons and variables which are important and are affecting overall analysis and we reach to consider training, literacy, linkage of credit with marketing and insurance is necessary to obtain desired outcome. The total conclusion of this study in these areas is based on this.

Saving habit– the dominant reported reasons for households' savings appeared to be uncertainties relating to employment and health, for children education and to maintain social status (SV1, SV2, SV3, and SV7). This shows that saving was done for productive reasons and not for any unproductive use.

Micro Insurance habit– The principal factors responsible for the take-up of any insurance policy are financial security against accident and death and also feeling of protection and risk bearing capacity (IN1, IN2, IN3, IN4)**.** But the relevant issue is that the overall reach of micro insurance is extremely low and *78% households reported no take-up* for any micro life insurance product. Moreover, only LIC dominated and other schemes by SBI and Government's insurance schemes PMJ-JBY and PMJ-SBY needs active attention.

Economic impact–The core factors responsible to bring desired economic impact are mainly level of income, savings, assets, business and domestic expenses (namely SE1 thru SE6). But interestingly, the reduction in household's indebtedness does not play a major role in uplifting member's economic position (SE7).

Social impact –There is *need of more women participation and empowerment*. As there is scanty demand for credit, savings and insurance by female headed households indicating that female heads are generally less able to grab benefit of the financial services.

*Challenges in availing microfinance service*s –Understanding the reasons for the non-take-up of credit, savings or insurance services became a primary question of interest. Nearly 80% of the households reported problem relating procurement of loan. Furthermore, for problem relating to capacity building, non-linkage of credit with marketing, insurance and

proper training appears to be the dominant reported reasons for barriers in providing MF services. Also, location exclusion i.e. lacks of access in household's locality to appropriate financial services. Evidence indicated no problems in availing micro savings services among beneficiaries of Dang District and it did show handsome saving picture on the saving front but that doesn't act as reduced need for credit. Thus, a full picture of the challenges of microfinance required better consideration of insurance and marketing linkage with loans and also need for training as an essential component of the strategy to enhance socio-economic wellbeing and thereby financial inclusion.

7. Correlation Between Variables

The study examined the correlation between variables drawn after factor analysis performed for savings, insurance, socio economic impact and micro credit respectively tested by using bivariate *correlation coefficient*.

The relationship between the variables of factors of SV Variables with IN Variables and MI variables reflects impact of savings with insurance coverage to useful in future requirements to households. Significant negative relationship between the factors of Saving Variables (SV's from Table – 4.103) and the factors of socio-economic improvement (Table – 4.156) with variables drawn from Table – 4.120 and Table – 4.132 respectively; *reflects impact of savings itself are not much helpful to households*.

Also, there exists a positive significant relationship between insurance habit with micro credit factor 2 Capacity building (Table – 4.157) that if effective credit linkages with marketing and insurance backed by training is made it will inculcate insurance habit among the households. There exists a significant negative correlation between economic and social factors their impact in different areas of insurance facilities. It reflects *impact of life micro insurance itself is not much helpful to households*.

Savings services and insurance services both are complement to microcredit; since they satisfy different needs and to be included in a long-term development strategy. Microcredit seeks to foster business creation and growth to create a favorable environment for professional development. Insurance, on the other hand, protects micro-borrowers from risks, and savings enable them to build up a financial safety net. There is a need of risk management strategies (Table – 4.153) with respect to these products.

8. Discriminant Analysis

It reflects the outcome of socio-economic impact of microfinance intervention through formal financial source, definitely depends on family type and the skill of the member (i.e. education, occupation and knowledge). Therefore, the is a need to design a financial product considering joint family and skill attribute in rural areas which can help in bringing the desired socio-economic outcome.

5.10. Scope for further Research

The present research work is an exploratory in nature. This study is directed to give an insight into the different aspects of micro financing involvement in rural areas of Dang District in Gujarat and their perceptions towards micro financing efforts by the banks. The results of the study provide substantial avenues for further research on the subject.

- One relevant area for further research could be to compare both micro insurance and savings habits across all states in India (a country wide comparison).
- Also, it is worthwhile to find out that which microfinance model is more effective in improving welfare of poor households i.e. government subsidies, commercial bank-SHG-BLP, cooperatives or private providers, in terms of the pros and cons of the respective model with respect to social and economic environment of the district and state and contribution of the role of the Third Sector.
- It is also important to examine the impact of microfinance using other methodologies such as Natural Experiment and Propensity Score Matching to check the robustness of its impact. Due to resource and time constraints, it was not possible to explore these research techniques in this thesis but can be taken up in future work.
- Regarding micro insurance, various other types of micro insurance other than the life micro insurance can be considered improve overall appetite for insurance market in rural areas. (Livestock, property, insurance for natural disaster etc.)
- Moreover, a comparative analysis can be done between micro life insurance schemes of public and private insurance, as this can provide more insight of micro insurance penetration and efficiency especially in rural areas.