CHAPTER — THREE RESEARCH METHODOLOGY

Chapter Three

Research Methodology

Research promotes scientific and critical thinking, apart from developing rational being. Research is indeed of crucial significance to social scientist for examining social associations, social progresses and seeking clarifications to various social hitches. It gives intellectual gratification of knowing and discovering things. Such research for the social researcher holds applied efficacy to gain facts so as to be able to do more efficiently something different. The research in economics at doctoral level also aims to contribute novel to the existing knowledge.

Scholars have divergent views whether and how much is impact of Microfinance. Despite the present success and popularity of microfinance, no conclusive evidence as such represents that microfinance services have positive effects on socio-economic well-being of beneficiaries. Also, a large majority of microfinance impact studies are mostly microcredit centred in the name of microfinance. Available evidence from micro insurance implementations is much scarcer than for microcredit (Young et al. 2006, Dercon and Kirchberger 2008: 7-9). None of the study adopts a comprehensive socio-economic impact assessment of Microfinance services that not only considers microcredit rather also includes effect of micro savings and micro insurance services on clients. Therefore, the present research work is carried out to analyze the impact of microfinance services such as credit, savings and insurance for empowerment of rural borrowers in the Dang district of Gujarat.

3.1 Research Questions

Some of the research questions inspired for this study and to find out how far the stated and targeted goal of the MFIs, bank and insurance institutions being achieved such as substantial poverty elimination and reduction in vulnerability of poor households.

- 1. Does microfinance interventions have really resulted in improving socio-economic living condition among poor households of Dang District?
- 2. Does microfinance have changed the quality of life of rural household through at ground level?
- 3. Does microfinance contribute in growth and income of the individual / family?

- 4. To what extent there is use of micro insurance by the households in Dang.
- **5.** What different components (factors) are responsible for socio-economic impact on beneficiaries by microfinance intervention in Dang district.
- 6. Are there any challenges faced by the household in availing microfinance services such as Micro credit, savings and micro insurance?
- 7. Which other products and services of MFIs, Banks or Insurance organizations in rural areas are found more effective in meeting financial needs?

The present study is an attempt to examine the extent to which microfinance interventions especially micro credit, micro savings and micro insurance, have been successful in delivering their promises?

3.2. Concept of variables of the study

The key concept in this study is to measure the impact of microfinance services in Dang district which is totally a rural area with respect to increase in income, quality of life, risk bearing capacity and women empowerment. For this we need to survey and accordingly know data variables both dependent variables (DV) and independent variable (IV) essential for the study and inference purposes.

The independent variables (IV) considered under the concept of Family Structure such as gender (female or male), family type (nuclear or together), types of loan borrowers and the level of socio-economic standing (above poverty line or BPL) may be standardized under socio-economic Status Scale (Bhardwaj R. L. 2001). The following objectives were framed and later statistical analysis performed for the surveyed data.

3.3. Objectives of the study

The **primary objective** of this study was to determine whether and up to what extent the formal source microfinance intervention has improved socio-economic condition of the households in Dang District Gujarat. Subsequently the **secondary objectives** could be defined as

- i. To delve into the household's preference for the formal and the informal sources of finance.
- ii. To examine the source and utilization of credit by household
- iii. To assess the contribution of microcredit in growth and income of the household.

- iv. To study the benefits of savings on household.
- v. To study the extent of use of micro insurance by the households.
- vi. To know the perception of beneficiary on benefits from micro insurance.
- vii. To assess problems faced by the household in availing microfinance services.
- viii. To know problems faced by Banks in extending microfinance services.
 - **ix.** To find out the different components (factors) responsible for socio economic impact on beneficiaries by microfinance intervention in Dang Districts.

These objectives are segregated as follows for this study:

- **Ob1:** To study the influence of microfinance on households with defined family structure (gender, family type and socio-economic status) of Dang district of Gujarat State.
 - To study the difference between genders (male and female) regarding the influence of microfinance services on Socio-economic improvement of the household of Dang district of Gujarat State.
 - To study the difference between family types (joint and nuclear) regarding the influence of microfinance on Socio-economic improvement of the household of Dang district of Gujarat State.
 - To study the difference between borrowers and non-borrowers regarding the influence of microfinance on Socio-economic improvement of the household of Dang district of Gujarat State.
- **Ob2:** To find out the factors (termed as component) which could responsible for micro savings services from formal sources?
- **Ob3:** To find out the factors (termed as component) which could responsible for micro insurance services?
- **Ob4:** To find out the factors (termed as component) which could responsible for impact on socio economic status of households in dang due to microfinance services.
- **Ob5:** To analyze the problems faced by the beneficiaries in availing Microcredit, Savings and Micro Insurance services.
- **Ob6:** To find out inter relationship between credit, savings, insurance and socioeconomic factors.

Ob7: To analyze that Microfinance intervention hasdiscriminated between beneficiaries of Dang District of Gujarat State.

Scope of the Study

The scope of this study is restricted to formal financial sources in Dang district of Gujarat State which are providing micro finance loans, savings and insurance services to households in all the three blocks namely Ahwa, Vaghai and Subir.

3.4. Research Plan and Design

The research plan for the current study is based on survey method (and data drawn) to for different statistical tests which depends on Independent variables (non-parametric) such as family type, area of residence, skill status of respondent with qualification, earning income and different nature of habits related to credit, saving and insurance. The survey questionnaire is in Likert scale format and having different variables in dataset. The non-parametric statistical tests are used accordingly.

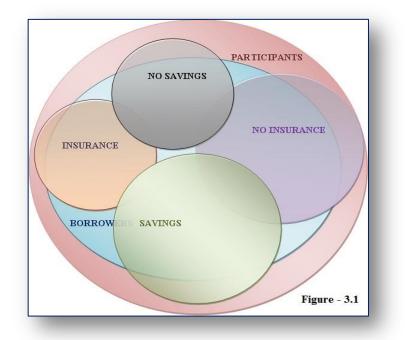
Research design is a road map of a research study while hypotheses concludes and provide help to guide this study. In the present study, the main Null hypothesis is derived as – *there shall be no influence of gender, family type and borrower or non-borrower on beneficiaries of financial institutions in all the three blocks of Dang district of Gujarat State.*

The study planned and performed using the following statistical tests before drawing any conclusions.

- To analyze the difference between variables of credits, savings and insurance as influence by different grouping with gender, family type, and socio-economic status using Mann-Whitney U Test (equivalent to t test) and
- To study the behavior of response data Levene's Test (equivalent to ANOVA) was done for variables which are in Likert scale format and in ordinal format.
- To draw the relation between economic impacts with different variables (of factors) using Spearman's coefficient of correlation and
- To find out the highly contributing factors, Principal Component Analysis was done to understand which common factors are influencing to beneficiaries.
- To test the Discriminant Analysis between borrowers and non-borrowers.

3.5. The Objectives Shown as Venn Diagram

To understand the objectives for the research work clearly, these could be explained with help of *Venn diagram*. A Venn diagram is a diagram that shows *all* possible logical



relations between defined sets. The diagram shows all possible elements as points in the plane and a *set* is a domain for those belonging points inside of the circles which could possibly intersect each other (overlapping). The following Venn diagram (**Figure – 3.1**) for the research work could explain the data requirement:

3.6. Hypotheses

Main Hypothesis

With reference to above defined objectives the main hypothesis for the study is designed as follows:

 H_0 = Microfinance intervention by formal financial sources have not made socio-economic improvement in living standards of beneficiaries in the Dang district of Gujarat State.

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

The above hypothesis is more complex regarding data received from beneficiaries and to understand the socio-economic impact of formal and informal microfinance organizations with reference to different parameters such as family type, residence area type, gender, socio economic status etc.; it is necessary to test independently sub hypotheses 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).

Sub Hypotheses (variables derived from every part of survey questioner)

The purpose of hypothesis testing is to determine whether there is enough statistical evidence in favor of a certain belief or hypothesis about a parameter.

Saving habit variables (SV variables)

- **H.10** Microfinance intervention has not made socio-economic improvement by inculcating saving habits in different gender beneficiaries of Dang District of Gujarat State.
- **H.1a** Microfinance intervention has made socio-economic improvement by inculcating saving habits in different gender beneficiaries of Dang District of Gujarat State.
- **H.20** Microfinance intervention has not made socio-economic improvement by inculcating saving habits in different family type beneficiaries of Dang District of Gujarat State.
- **H.2a** Microfinance intervention has made socio-economic improvement by inculcating saving habits in different family type beneficiaries of Dang District of Gujarat State.

Insurance habit variables (IN variables)

- **H.30** Microfinance intervention has not made socio-economic improvement by inculcating insurance habits in different gender beneficiaries of Dang District of Gujarat State.
- **H.3a** Microfinance intervention has made socio-economic improvement by inculcating insurance habits in different gender beneficiaries of Dang District of Gujarat State.
- **H.40** Microfinance intervention has not made socio-economic improvement by inculcating insurance habits in different family type beneficiaries of Dang District of Gujarat State.

H.4a Microfinance intervention has made socio-economic improvement by inculcating insurance habits in different family type beneficiaries of Dang District of Gujarat State.

Economic Impact variables (SE variables)

- **H.50** Microfinance intervention has not made improvement in economic status in different gender beneficiaries of Dang District of Gujarat State.
- **H.5a** Microfinance intervention has made improvement in economic status in different gender beneficiaries of Dang District of Gujarat State.
- **H.60** Microfinance intervention has not made improvement in economic status in different family type beneficiaries of Dang District of Gujarat State.
- **H.6a** Microfinance intervention has made improvement in economic status in different family type beneficiaries of Dang District of Gujarat State.
- **H.70** Microfinance intervention has not made improvement in economic status of different borrowers of Dang District of Gujarat State.
- **H.7a** Microfinance intervention has made improvement in economic status in different borrowers of Dang District of Gujarat State.

Social Status Impact variables (SS variables)

- **H.80** Microfinance intervention has not made improvement in social status in different gender beneficiaries of Dang District of Gujarat State.
- **H.8a** Microfinance intervention has made improvement in social status in different gender beneficiaries of Dang District of Gujarat State.
- **H.90** Microfinance intervention has not made improvement in social status in different family type beneficiaries of Dang District of Gujarat State.
- **H.9a** Microfinance intervention has made improvement in social status in different family type beneficiaries of Dang District of Gujarat State.
- **H.100** Microfinance intervention has not made improvement in social status of different borrowers of Dang District of Gujarat State.
- **H.10a** Microfinance intervention has made improvement in social status in different borrowers of Dang District of Gujarat State.

Challenges in Availing Micro Credit Service (MC variables)

- **H.110** There are problems faced in availing micro credit services by different gender beneficiaries of Dang District of Gujarat State.
- **H.11a** There are no problems faced in availing micro credit services by different gender beneficiaries of Dang District of Gujarat State.
- **H.120** There are problems faced in availing micro credit services by different family type beneficiaries of Dang District of Gujarat State.
- **H.12a** There are no problems faced in availing micro credit services by different family type beneficiaries of Dang District of Gujarat State.

Challenges in Availing Micro Saving Service (MS Variables)

- **H.130** There are no problems in availing micro savings services by different gender beneficiaries of Dang District of Gujarat State.
- **H.13a** There are problems in availing micro savings services by different gender beneficiaries of Dang District of Gujarat State.
- **H.140** There are no problems in availing micro savings services by different family type beneficiaries of Dang District of Gujarat State.
- **H.14a** There are problem in availing micro savings services by different family type beneficiaries of Dang District of Gujarat State.

Challenges in Availing Micro Insurance Service (MI Variables)

- **H.150** There are no problems in availing micro insurance services by different gender beneficiaries of Dang District of Gujarat State.
- **H.15a** There are problems in availing micro insurance services by different gender beneficiaries of Dang District of Gujarat State.
- **H.160** There are no problems in availing micro insurance services by different family type beneficiaries of Dang District of Gujarat State.
- **H.16a** There are problems in availing micro insurance services by different family type beneficiaries of Dang District of Gujarat State.

Relationships Analysis

- H.170 There shall be no correlation between factors of economic impact (SE) and factors of socio benefits (SS) responsible to beneficiaries of Dang District of Gujarat State.
- **H.17a** There shall be correlation between factors of economic impact (SE) and factors of socio benefits (SS) responsible to beneficiaries of Dang District of Gujarat State.
- **H.17.10** There is no correlation between saving habit Variable (SV) with insurance habit (IN) and barrier in availing in Micro insurance Variables (MI) responsible to beneficiaries of Dang District of Gujarat State.
- **H17.20** There is no correlation between saving habit Variable (SV) with barriers in availing in Micro credit and savings Variables (MC and MS) responsible to beneficiaries of Dang District of Gujarat State.
- **H.17.30** There is no correlation between saving habit Variable (SV) with Socio-Economic impact Variables (SE and SS) responsible to beneficiaries of Dang District of Gujarat State.
- **H.17.4o**There is no correlation between saving habit Variable (SV) with Socio-Economic impact Variables (SE and SS) responsible to beneficiaries of Dang District of Gujarat State.
- **H.17.50** There is no correlation between Insurance Habit Variables (IN) with Socio-Economic impact Variables (SE and SS) responsible to beneficiaries of Dang District of Gujarat State.
- H.17.60 There is no correlation between Economic impact Variables (SE) with barrier in availing in Micro credit, savings and insurance Variables (MC, MS and MI) responsible to beneficiaries of Dang District of Gujarat State.
- **H.17.70** There is no correlation between Social impact Variable (SS) with barrier in availing in Micro credit, savings and insurance Variables (MC, MS and MI) responsible to beneficiaries of Dang District of Gujarat State.
- **H.17.80** There is no correlation between barrier in availing in Microcredit (MC) Variable with barrier in availing in savings and insurance Variables (MS and MI) responsible to beneficiaries of Dang District of Gujarat State.
- H.17.9oThere is no correlation between barrier in availing in Saving service Variable (MS) with barrier in availing in Micro Insurance Variables (MI) responsible to beneficiaries of Dang District of Gujarat State.

Discriminant Analysis

- **H.180** Microfinance intervention has not discriminated between potential beneficiaries of Dang District of Gujarat State.
- **H.18a** Microfinance intervention has discriminated between potential beneficiaries of Dang District of Gujarat State.

3.7. Universe and Unit of the study

3.7.1. Basic Census Data of the study

The population data as per Census 2011 published by Government of India for Gujarat state reveal that population of Gujarat has increased by 19.17% in the during 2001-2011 compared to 1991-2001 (20.66%).

Table – 3.1 Population of Gujarat and Dang District (figures in million.)										
Place	Description	Overall			Urban			Rural		
Place		Total	Male	Female	Total	Male	Female	Total	Male	Female
	Population	6.04	3.15	2.89	2.57	1.37	1.20	3.47	1.78	1.69
	Literate	4.11	2.35	1.76	1.97	1.06	0.91	2.14	1.12	1.02
	SC	0.41	0.21	0.20						
Gujarat	ST	0.89	0.45	0.44						
	Main Workers	2.04	1.66	0.38						
	Marginal Workers	0.44	0.14	0.30						
	Non Workers	3.57	1.35	2.22						
	Population	0.23	0.12	0.11	0.02	0.01	0.01	0.20	0.11	0.09
	Literate	0.14	0.08	0.06	0.02	0.01	0.01	0.12	0.07	0.05
Dang	SC	0.02	0.01	0.01						
District (2011)	ST	0.21	0.11	0.10						
	Main Workers	0.009	0.005	0.004						
	Marginal Workers	0.003	0.001	0.002						
	Non Workers	0.011	0.005	0.006						
Source: Census 2011										

The research being designed for this study is primarily qualitative and quantitative both. It is quantitative because it involved the data belonging to individual which are to be compared with another individual with respect to problem. This becomes the main frame for the research objectives and problems with the various key parameters for study. The qualitative data (in *Likert data* form) depends on different factors responsible for conclusive research.

3.7.2. Financial Organizations at Dang

Household's beneficiaries of formal financial sources of Dang district of Gujarat are forming part of Universe of the Study (Table - 3.2). The number of banks and its branches in Dang district as on year 2016-17 is furnished below:

Table – 3.2 Financial Organization in Dang District of Gujarat						
Sr. No.	Financial Organizations	Number of Branches				
1.	Nationalized Banks*	09				
2.	Cooperative Banks	06				
3.	Land Development Banks	0				
4.	Private Sector Banks	0				
Total 15						
Source: District Industrial Potentiality Survey Report (2016-17)						

Nationalized Banks*will also include SHG-Bank Linkage Program clients

3.8. Sample of data for study

A *pilot study* was conducted for the stress test of survey form. A pilot study was conducted with sample of *104 participants*, data collected, and the results were checked as per objectives, hypotheses were adopted. A sample; as the name implies is smaller representation of a larger population, where the data of same phenomenon were collected using the designed form (**Survey Form – Appendix - IV**).

The complete study is based on non-probability random sample method and population of 600 participants planned (as per adopted formula mentioned below). The sample size of 600 for current research work was determined using the minimum required criteria and calculated the ratio of observations to predictors and the formula based approach. According to Hair J. F, Black W. C., Babin B. J, Anderson R. E and Tatham R. L (2009) the ratio of 20 observations for each predictor variable is suggested for logistic regression models while another method is to the minimum sample size (number of observations) of the study could be decided by using following formula (Nargundkar R. 2010).

Universe (**Population Size**) : i.e. how many people in the group represents the in the whole Dang district of Gujarat covered under microfinance activities.

Sample Size (n) : There is a need to understand how many data are required for research analysis some of the assumptions were considered in drawing the

numbers such as:

Margin of error (ME) : This is the plus-or-minus figure normally reported may vary from 1% to 5% (in this it is assumed 4% for current data).

Confidence level : This tells how sure about the error of margin. It is expressed as a percentage and represents how often the true percentages of populations who would pick an answer lie within the margin of error (assumed 95%) and the value of z score taken as 1.96.

Estimated Response Rate (p) : This is a percentage value of participate who responded in the survey. This value depends on different factors and distribution method assumed (in this survey it was assumed 50%).

The formula used : ME = z * SQRT ((p * (1-p)) / n) where n is calculated sample size. (The calculated value of n comes out to be approximately 600)

3.8.1. Sampling Error and Non-sampling error

Sampling of data requirement is less costly and it can be done more quickly than studying complete population. However different samples selected from same population will give different results because this sample contains different elements and hence discrepancy termed as *sampling error*. *Sampling error* is one of two reasons for the difference between an *estimate* (e.g. sample mean $\vec{x}_{1.e.} \times \vec{b}_{1.e.} \times \vec{b}_{2.e.} = \vec{b}_{1.e.}$ and the true, but unknown, value of the population parameter then: *Sampling error* = $\vec{x} - \mu$

Table 3.3 Comparison between type of sampling errors								
Points for Comparison	Sampling Error	Non-Sampling Error						
Meaning	Sampling error is a type of error occurs due to the sample selected does not perfectly represents the population of interest	An error occurs due to sources other than sampling, while conducting survey activities is known as non-sampling error.						
Cause	Deviation between sample mean and population mean	Deficiency and analysis of data						
Туре	Random	Random or Non Random						
Occurs	Only when sample is selected	Both in sample and census						
Sample Size	Probability of error reduced with the increase in sample size.	It has nothing to do with the sample size.						

The other reason is non-sampling error; even if a sampling process has no non-

sampling errors then estimates from different random samples (of the same size) will vary from sample to sample and hence every estimate is different from each other than true value of the population parameter. *Non-Sampling error* is the error that arises in a data collection process because of factors other than taking a sample. Non-sampling error is an error arises from human error, such as error in problem identification, method or procedure used etc. Non-sampling errors have the potential to cause bias in polls, surveys or samples.

In the **section 3.8 (above)** we assumed *margin of error* (ME) as non-sampling as 4%. A comparison between both types of errors will clarify the importance of errors.

3.8.2. Data Collection Process

Sampling Technique

Dang district has in all three Tehsil/Block namely Ahwa, Subir and Vaghai, hence for purpose of data collection and to have representativeness of sample, the data has been drawn from these 3 blocks.

- **Cluster sampling** was applied in selecting those villages having both highest and lowest population within these three blocks.
- **Randomly selection of household** –The following process in three stages applied for selecting the villages and respondents to eliminate the problem of biasness.

First stage - To find out the number of live villages in three blocks (namely Ahwa, Subir and Vaghai) from April 2010. The corrected data list was received from District Panchayat office and DRDA office.

Second stage - From the list of villages, randomly 4 villages from Ahwa and Vaghai and 3 from Subir were selected with a condition those villages with low and high population will be taken for study to eliminate the biasness.

Third stage - And then from each of these selected villages from each block, 55 households were randomly selected.

Table – 3.4 Block Wise Selection of Samples							
Sr.	Block /	Village Sample Villages			ges		
No.	Taluka	Clusters	Number	Village Name			
1	Abwa	26	4	Ghoghli	Ahwa City		
1	Ahwa			Linga	Dhavalidod		
2	Vaghai	22	4	Chinchod	Kosimda		
2				Godadiya	Waghai		
3	Sahin	19	3	Mahal	Sepuamba		
3	Subir	19	3	Kadmal (Subir)			
Total 67			11	Total Number of Survey Forms Required 11*55 = 605 <u>~</u> 600			
Number of Households from Each Village			55				

The data collected from these participants (both borrower and non-borrower) of Dang districts (study blocks) of Gujarat are the members of MFIs prior to year 2010 till the year 2016, hence our period of interest covers Six years (2010 to 2016). Table – 3.5 includes nearly 56% are non-borrower though they might be member of MFIs/Bank Account Holders / Insurer since long and nearly 44% are borrowers.

Table – 3.5 Year wise Borrowers (Cases = 600)						
Borrower						
Formal	Informal	Total				
10	6	16				
19	9	28				
62	27	89				
78	33	111				
86	48	134				
36	38	74				
1	0	1				
292	161	453				
% 48.7		75.5				
surveyed	Total	%				
owers	264	44.0				
orrower	336	56.0				
	Formal 10 19 62 78 86 36 1 292 48.7 surveyed owers orrower	Borrower Formal Informal 10 6 19 9 62 27 78 33 86 48 36 38 1 0 292 161 48.7 26.8 surveyed Total owers 264				

Source: Field Survey

Among all these participants; there are only 264 borrowers (i.e. 44%) who possibly (i.e. 75.5%) had taken loans and financial helps more than once from Formal (i.e. 48.7%) and Informal (i.e. 26.8%) sources respectively for same period. There are some borrowers (i.e. 292 - 264 = 28) who might have borrowed from other formal source in the same year. Similarly, 161 borrowers are not the part of 264 but there are 89 such borrowers who had also borrowed from informal sources.

Table – 3.6 Distribution of Participants Borrowed from Different Sources										
Type of	As per Code list	Year wise (frequency)								%
Source		2010	2011	2012	2013	2014	2015	2016	Total	w.r.t. 264
Farmal	CB (A)	7	10	43	54	50	33	1	198	75.00
Formal	CP (B)	3	6	10	13	20	0	0	52	19.70
source	SHBL(C)	0	3	9	11	16	3	0	42	15.90
	SH (H)	0	0	6	5	7	6	0	24	9.10
Informal	FR (I)	0	3	9	17	27	16	0	72	27.30
source	ML (J)	6	6	10	6	10	15	0	53	20.10
	MS (K)	0	0	2	5	4	1	0	12	4.50
Total 16 28 89 111 134 74 1										
% w.r.t. 264 6.10 10.60 33.70 42.00 50.80 28.00 0.40										
Sources Field Surgery										

Source: Field Survey

The Table -3.6 gives the distribution of 264 participants who borrowed from different sources once or more than once in the span of six years. This distribution showed that slowly formal sources are providing more and sufficient confidence to borrowers.

3.8.3. Concept of Variables in the Study

The Socio-Economic impact is the major concept of this study especially for Microfinance Activities in Gujarat State, at district level (rural Dang areas). The concept includes Family Structure, living conditions, economic status and other development environment concept and hence in relation to this **Dependent Variables (DV)** and **Independent Variables (IV)** was used as standardized.

Family Structure	ure Gender Categories		Male and Female;
	Type of Families	:	Nuclear and Joint
Economic Status	Socio-economic Status	:	Kuppuswamy Scale defined.
Assets	Housing	:	Katcha, Semi Pucca, Pucca
Living Area	Block Type	:	Rural and Urban
Education	Professional or Non-Professi	onal	
Occupation	Skilled, Semi-Skilled or Uns	killed	

3.8.4. Data Classifications, Types and measurement scales

The data are classified for the purpose of analysis in different groups such as survey site (Block), type of participant (gender), age, family type, qualification, professions, income etc. and a structured questionnaires was designed (**Appendix – IV**) for the same, then

data were transformed into numeric (alphabetic and Likert data converted), measure, analyze and interpret from different participants (borrowers or non-borrowers) of MFIs / Bank / Insurance in randomly selected areas of Dang district of Gujarat State.

The collected surveyed forms and data were entered in worksheets using MS Excel 2007 converting alphabetical nature data such as gender, family type, occupation, area type etc. in numerical codes (**Appendix** – **V**). Some of the queries in the survey form are of *Likert Scales* formats the investigation of which will be used for decision and conclusion purposes. The *Likert Types* of data analyzes by two different methods of item selection:

- **1.** *item analysis* done by using the correlation of item score with total score; and
- **2.** The use of a *criterion of internal consistency* selects data for all statements with their difference in average item score between high and low scoring of the defined groups based on total score.

3.9. Ethical Considerations

The researcher considered the research values of voluntary participation, anonymity and protection of respondents from any possible harm that could arise from participating in the study. Researcher also introduced the purpose of the study as a fulfilment of a doctorate degree and not for any other disguised motive by the researcher and requested the respondents to participate in the study on a voluntary basis and refusal or abstaining from participating was permitted. The researcher also assured the respondents of confidentiality of the information given and protection from any possible harm that could arise from the study since the findings would be used for the intended purposes only. All sources of the facts and information that doesn't belong to the researcher are duly acknowledged through citations.