CHAPTER 3
RESEARCH METHODOLOGY

3.1 Introduction

Research Methodology is the logical and systematic process dealing with identification of problem, collection of facts or data, analysing this data with the help of relevant statistical tools and reaching a certain conclusion either in the form of solutions towards the problem concerned or certain generalizations for some theoretical formulation [123]. In other words, it is a methodological fit as an internal consistency among elements of a research study. This chapter provides a detailed framework of the methodology used for carrying out the research work. It includes the justification for the use of particular methodology in relation to the objectives set for research work. It needs to have a judicious mix of quantitative and qualitative interpretations matching with research objectives. To carry out research work in Mewat area is really a very difficult task, which involves a number of challenges at each step, because all our presuppositions do not hold good in this area. That is why essential background, key features, advantages and limitations of methodologies if any are discussed along with the rationale of the methodologies.

3.2 Research Design

Research design refers to the overall strategy chosen to integrate the different components of the study in a coherent and logical way, thereby, ensuring that the research problem is effectively addressed; it constitutes the blueprint for the collection, measurement, and analysis of data [56, 289]. According to Green and Tull, “A research design is the specification of methods and procedures for acquiring the information needed. It is the over-all operational pattern or framework of the project that stipulates what information is to be collected from which source by what procedures [89].

Thus, it is a conceptual structure within which research is conducted and includes an outline of what the researcher will do from writing the hypothesis and its operational implication to the final analysis of the data, being made for drawing certain interpretations on the basis of which policy recommendations could be made to the policymakers. The most common research designs used by the researchers are exploratory, descriptive and causal. The present study is descriptive in nature. An
outline of the study is presented here that specifies the objectives of the study, the sources of data, the methodology and techniques to be adopted for achieving the objectives.

3.3 Outline of the study

3.3.1 Conceptual Framework of the Study

The study is proposed to be conducted in Mewat District (carved out of parts of the erstwhile Gurgaon and Faridabad districts) in the Northern state of Haryana. Mewat is one of the districts in the NCR (National Capital Region). NCR consists of entire National Capital Territory-Delhi, 9 districts of Haryana, 6 districts of Uttar Pradesh (UP) and 1 district of Rajasthan. Comparison of per capita income of different districts of NCR, excluding Delhi, reveal that Bulandshahr, Meerut and Ghaziabad in UP sub-region, followed by Mewat in Haryana sub-region are among the districts having low per capita income [191]. In Haryana sub-region, Mewat had the lowest per capita income and the least percentage of households availing banking services. This is despite the fact that Haryana is a fast developing state of India with a per-capita income higher than that of the country. Yet it is grappling with the problem of development of a backward district like Mewat.

The Mewat Development Board was set up at the state level, as far back as 1980, by the Government of Haryana, for development of Mewat as an extra effort of development apart from the normal plan schemes. Simultaneously, the Mewat Development Agency was set up at district level to overview and to monitor the progress of various schemes being implemented out of the funds provided by the Mewat Development Board. Microfinance made an entry into Mewat through the Self-Help Groups (SHGs) Federation set-up during the tenure of International Fund for Agricultural Development (IFAD) project (1995 to 2005). The overall objectives of the Project were to improve the economic and social well-being of the Mewat area, promote gender self-reliance on a sustainable basis and to broaden the range of economic opportunities available to the community. Focus was given on empowerment of women through SHGs. Since then, microfinance related schemes are being implemented in Mewat by MDA in collaboration as a partnership model along with a number of Non-governmental organisations.
Microfinance is inextricably linked with economic development. Provision of microcredit to the poor along with other support services enables them to set-up income generating activities. Creation and sustenance of income generation units, especially for women is a significant step in their empowerment which ultimately culminates in all round development of a society and region. Despite the presence of the self-help group model of microfinance which has been prevalent for more than fifteen years, Mewat continues to languish in backwardness. Obstacles to economic development e.g. unfavourable physical environment, low quality of working population, traditional agriculture, lack of adequate responsiveness of the masses to new teaching including high grade managerial and technological skill, lower grade skills, low rate of savings and traditional mind-set have kept this area in a state of pervasive poverty and backwardness. The researcher could examine on the basis of field work carried out in this area that there is a potential among women folk, which could work as a catalytic agent for growth process and moreover, they are willing to take up the responsibilities on their shoulders. This gave an idea to work for a research study on this problem. Keeping this in view, the focus of this study is on the development situation of the minority concentrated district of Mewat in Haryana in relation to the SHG microfinance community framework.

3.3.2 Research Objectives

The overall objective of the proposed research is to examine the role and effect of microfinance and Self-help groups in the backward district of Mewat in Haryana and to derive insights for policy making, so that these can significantly contribute towards economic development of this region. The overall objective of the study is broken down into the following four objectives:

1. To review the effectiveness of current microfinance programs for women in Haryana with focus on Mewat.
2. To analyze the impact of the self-help group model of microfinance on the economic development of Mewat.
3. To identify the credit plus factors essential for sustainability of income generating activities of women in this district.
4. To suggest measures for the successful implementation of microfinance schemes to achieve the development outcomes in relation to women under the SHG framework.
These objectives are further divided into sub-objectives as shown in the Table 3.1 below:

Table 3.1: Objectives and sub-objectives of research

<table>
<thead>
<tr>
<th>S No.</th>
<th>Objectives</th>
<th>Sub-Objectives</th>
</tr>
</thead>
</table>
| 1     | Review the effectiveness of current microfinance programs for women in Haryana with focus on Mewat | – Review of main microfinance schemes in operation in Haryana  
– Review of current microfinance schemes in operation in Mewat  
– To identify the main shortcomings of the schemes  
– Derive interrelationships among the variables causing a gap between actual and desired achievement targets.  
– To classify the variables according to their driving and dependence power |
| 2     | Analyze the impact of the self-help group model of microfinance on the economic development of Mewat | – To determine the current status of development indicators in Mewat on the basis of both secondary and primary data  
– To analyze the socio-economic profile of SHG women and analyze the reasons for joining SHG  
– To examine the impact on income, expenditure and savings of women pre and post joining a SHG through hypotheses formulation and their testing with the help of statistical tools  
– To analyze the impact of microfinance on the empowerment of SHG members |
<table>
<thead>
<tr>
<th>S No.</th>
<th>Objectives</th>
<th>Sub-Objectives</th>
</tr>
</thead>
</table>
| 3     | Identify the credit-plus factors essential for sustainability of income generating activities of women in Mewat | - To identify the credit-plus factors especially in the context of SHGs in India  
- To check the current status of these credit-plus factors in Mewat and to identify the relevant credit-plus factors for Mewat specifically based on responses of the primary survey |
| 4     | Suggest measures for the successful implementation of microfinance schemes to achieve development outcomes especially in relation to women under the SHG framework | - Suggest key focus areas and make specific recommendations based on  
a) insights derived from previous objectives and  
b) comparison with backward district of Gulbarga in Karnataka, being also muslim minority concentrated |

**3.3.3 Research Framework**

The research framework, envisaged to carry out the study in a structured manner is shown below in Figure 3.1.
Objective 1
Review of current microfinance programs in Haryana with focus on Mewat

Evaluation of current microfinance programs

Identification of shortcomings

Application of ISM

Identification of strategic variables

Analyze the impact of current microfinance programs on the economic development of Mewat

Objective 2

Identification of Economic Development Indicators

Analyze the socio-economic profile of SHG women and their reasons for joining SHG

Examine the impact on income, expenditure & savings of women pre and post joining SHG

Analyze the impact of microfinance on the empowerment of SHG members

Results and Findings

Objective 3
Identification of credit plus factors essential for sustainability of income generating activities of women in Mewat

Suggest measures for the successful implementation of microfinance schemes to achieve the development outcomes in relation to women under the SHG framework

Objective 4

Conclusion

Figure 3.1: Schematic Diagram of Research Study
3.3.4 Sources and methods of Data Collection

A combination of both primary and secondary data has been used to give proper coverage to the topic for this research study.

3.3.4.1 Secondary data

Secondary data refers to data that has been already collected by authorized agencies and is readily available. More specifically, it is data collected from third-party sources such as government departments, organisational records, websites, research reports, magazine articles, newspapers and data originally collected for other research purposes. Such data are cheaper and more quickly obtainable than the primary data and also may be available when primary data cannot be obtained at all. Secondary data is used to gain initial insight into the research problem. It helps to clarify the research focus by identifying the gaps and deficiencies in the existing information and provides a basis for comparison of the data proposed to be collected by the researcher. Hence, secondary data is one of the most widely used methods for data collection.

In the current study, secondary data had a significant role to play. For objective one and its sub-objectives, pertaining to a review of the main microfinance schemes in operation in Haryana with focus on Mewat, data has been sourced from reports of various government agencies and departments like NABARD, Ministry of Rural Development etc. For the other objectives also, secondary data has been collected from various authentic sources particularly standard bulletins such as Census reports and a number of survey reports published by various government departments and other authorized agencies. The data obtained helped in preparing the framework for the primary survey.

3.3.4.2 Primary data

Existing data may have certain disadvantages relating to reliability, accuracy and suitability for the particular research issue at hand. The data may also be outdated, not up to date and missing. Primary data is, therefore, used in conjunction with secondary data to take care of these limitations. Primary data is original research that is obtained through first-hand investigation and includes information collected from interviews, experiments, surveys, questionnaires and focus groups. The biggest advantage with primary data is that it is current and can better give a realistic view to the researcher about the topic under consideration.
For the current study, the primary data was collected through a survey conducted among the women self-help group members with the help of a structured questionnaire. All the five blocks of Mewat were duly covered. The sample design/size was finalised in consultation with the field functionaries and key officials of Mewat Development Agency (MDA) and other district officials, with whom the researcher had a number of meetings to work out a blueprint for carrying out a primary survey.

3.3.4.2.1 Sample Design

*Population:*

Sampling is a means of selecting a subset of representative units from a target population for the purpose of collecting information. In this study the target population consists of the 315 Self Help Groups effectively operating in all the five blocks of Mewat district involving about 3750 women members [161], as on 30th June 2015. These self-help groups were getting the loaning facilities under the National Minorities Development and Finance Corporation scheme being implemented by MDA in this area.

*Sampling Technique:*

Non-probability judgement sampling has been used to select the sample size. This type of sampling technique is also known as purposive sampling and authoritative sampling. Judgmental sampling is used in cases where the specialty of an authority can select a more representative sample that can bring more accurate results rather than by using other probability sampling techniques. The process involves nothing but purposely handpicking individuals from the population based on the authority's or the researcher's knowledge and judgment keeping in view the coverage of the whole area and population under study. It is also possible to use judgmental sampling, if the researcher knows, a reliable professional or authority as a means to get a representative sample. In this case the MDA, being considered, is the most experienced district/field nodal agency operating in Mewat for the last 36 years. It has been actively promoting SHGs in Mewat for almost two decades and is well-versed with all the salient characteristics/conditions of the area and its inhabitants.
**Sample Size:**

After having a number of meetings with an economist cum statistician of MDA, and the concerned bureaucrats responsible for implementation and monitoring of different projects and schemes formulated by the MDB for the overall development of Mewat, for carrying out a detailed survey, a sample of 150 women members was selected. It took more than six months to conduct the primary survey even of this size because of a number of area constraints. It was observed that almost each Self Help Group has the same features. This survey started in the month of July 2015 on the basis of facts and figures of 30th June 2015 (supplied by Mewat Development Agency, Nuh).

**Questionnaire Design:**

A questionnaire refers to a series of questions asked to individuals in order to extract statistically useful information about a given topic. If properly constructed and responsibly administered, a questionnaire becomes a vital instrument by which statements can be made about specific groups or entire populations. Badly framed questions, incorrect ordering of questions, incorrect scaling, or a poor questionnaire format can make the survey worthless, as it may not accurately reflect the views and opinions of the respondents. A useful method for checking a questionnaire and making sure it is accurately capturing the intended information is to pre-test it among a smaller subset of target respondents.

In this study, a structured questionnaire was prepared and distributed to the selected SHG respondents. The questionnaire was divided into 2 parts. The first part was about the socio-economic profile of respondents and the second part related to their Self Help Group details. To collect the primary data the researcher visited the villages of the study area in each block and interacted with the respondents extensively by putting the questions in their own local (Mewati) dialect and Hindi. The reliability and validity of the questionnaire were duly tested on the basis of a pilot survey.

**Hypotheses:**

A hypothesis is a statement created by researchers when they speculate upon the outcome of a research or experiment. According to Lundberg, “a hypothesis is a tentative generalization, the validity of which remains to be tested. At the elementary level, it may be mere hunch, guess and imaginative data, which becomes the basis for
action (or) investigation”, [226]. It is important to have a clear research question and know what the outcome variable to be compared is. Once the research question has been stated, the null and alternative hypotheses are formulated. The null hypothesis \( (H_0) \) usually assumes that there is no difference in the outcome of interest between the study groups. The study or alternative hypothesis \( (H_1) \) usually states that there is a difference between the study groups.

The following null hypotheses were framed for the study:

1. \( H_{01} \): There is no significant difference between the monthly family income of households before and after joining the SHG.
2. \( H_{02} \): There is no significant difference between the monthly expenditure of households before and after joining the SHG.
3. \( H_{03} \): There is no significant difference between the education expenditure of households before and after joining the SHG.
4. \( H_{04} \): There is no significant difference between the health expenditure of households before and after joining the SHG.
5. \( H_{05} \): There is no significant difference between the monthly saving of households before and after joining the SHG.

3.3.4.3 Observation

Observation is an important technique to collect data when the information is considered sensitive and when a high degree of reliability and accuracy is required [190]. Marshall and Rossman [151] define observation as "the systematic description of events, behaviors, and artifacts in the social setting chosen for study" (p.79). Observations enable the researcher to describe existing situations using the five senses, providing a "written photograph" of the situation under study [69]. Fieldwork involves "active looking, improving memory, informal interviewing, writing detailed field notes, and perhaps most importantly, patience" [58]. Participant observation is the process enabling researchers to learn about the activities of the people under study in the natural setting through observing and participating in those activities.

Direct observation was done throughout the period of field survey with information and noted down in a dairy. Special observation or field observation was noted while holding discussions with the respondents [306]. The informal chats with the respondents during questionnaire filling at the respondent’s homes enabled the
researcher to observe women’s interaction with other family members, as well as sanitation, child care, health, wealth and types of technologies used. In this study observation about Mewat during data collection was used in order to achieve authenticity, validation and cross-checking of the collected data on IGAs, current livelihood status, IGAs distribution, constraints of performing activities within their household, status and scope of rural women, etc.

3.3.5 Data Analysis: Tools and Techniques used

Data analysis is an on-going part of data collection [37]. Also, methodology is the central core of any research work. There are various methodological tools available in research, all with specific advantages and disadvantages. Moreover, research methodology is normally linked in accordance with research objectives. Therefore, considering the complexity of the phenomenon under study and multiplicity of objectives, different tools and techniques have been used for different objectives. Table 3.2 summarizes the objective-wise description of the techniques used.

Table 3.2: Objective-wise description of tools and techniques used

<table>
<thead>
<tr>
<th>S No.</th>
<th>Sub-Objectives</th>
<th>Tools and Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>− Review of main microfinance schemes in operation in Haryana and Mewat</td>
<td>Descriptive Statistic Tools</td>
</tr>
<tr>
<td></td>
<td>− To identify the main shortcomings of the schemes</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>− Derive interrelationships among the variables causing a gap between actual and desired achievement targets.</td>
<td>Interpretive Structural Modelling (ISM)</td>
</tr>
<tr>
<td></td>
<td>− To classify the variables according to their driving and dependence power</td>
<td></td>
</tr>
<tr>
<td>S No.</td>
<td>Sub-Objectives</td>
<td>Tools and Techniques</td>
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<tr>
<td>-------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------</td>
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</tbody>
</table>
| 3     | − To determine the current status of economic development indicators in Mewat on the basis of both secondary and primary data                                                                                   | Structured Questionnaire  
Cronbach's alpha (reliability test)                                   |
|       | − To analyze the socio-economic profile of SHG women and analyse the reasons for joining SHG                                                                                                                   | Descriptive Statistics and Garrett Ranking Technique               |
|       | − To examine the impact on income, expenditure and savings of women pre and post joining a SHG through hypotheses formulation and testing                                                                           | Paired sample t-test  
Wilcoxon signed ranks test  
Pearson Correlation test  
Spearman correlation Coefficient  
Radar Chart |
|       | − To analyze the impact of microfinance on the empowerment of SHG members                                                                                                                                       |                                                                   |
| 4     | − To identify the credit-plus factors especially in the context of SHGs in India                                                                                                                                  | Literature review                                                   |
|       | − To check the current status of these credit-plus factors in Mewat and to identify the relevant credit-plus factors for Mewat specifically based on responses of the primary survey | Structured Questionnaire  
Descriptive Statistics                                                |
| 5     | − Suggest key focus areas and make specific recommendations based on a) insights derived from previous objectives and b) a comparison with the backward district of Gulbarga in Karnataka                     |                                                                   |

**3.3.5.1 Interpretive Structural Modelling (ISM)**

Interpretive Structural Modelling (ISM) is an important multi criteria decision making (MCDM) technique which helps a researcher to understand relationship among multiple variables. The structure is obtained by answering a set of questions. The variables to be structured are defined at the beginning of the ISM planning session. A relational statement that defines the type of relationship desired such as "aggravates", "enhances", "contributes to", "precedes", etc. is also specified.

ISM can be used at a high level of abstraction such as that needed for long range planning and at a more concrete level to process and structure details related to a problem or activity such as process design, career planning, strategic planning, engineering problems, product design, process re-engineering, complex technical
problems, financial decision making, human resources, competitive analysis and electronic commerce [26, 43, 135, 218]. ISM has been widely employed for modelling the variables of Supply Chain Management (SCM) for improving the performance of the supply chain [71, 106, 113, 154, 274]. In addition, many researchers are using this methodology for modelling variables in different fields other than SCM, as shown in Table 3.3 below.

Table 3.3: Application of ISM in different fields

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Areas of Application</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobile Banking for SBLP in India</td>
<td>Manju S. et al. [149]</td>
</tr>
<tr>
<td>2</td>
<td>Occupational Safety Performance of SMEs</td>
<td>Cagno E. et al. [40]</td>
</tr>
<tr>
<td>3</td>
<td>Total Productive Maintenance</td>
<td>Rajesh A. et al., Attri et al. [14, 15, 219]</td>
</tr>
<tr>
<td>4</td>
<td>Energy conservation in the Indian cement industry</td>
<td>Saxena et al. [248]</td>
</tr>
<tr>
<td>5</td>
<td>Development of a balanced scorecard (BSC) for a real life case company KVIC (Khadi and Village Industries Commission, organic food sector, India)</td>
<td>Thakkar et al. [284]</td>
</tr>
<tr>
<td>6</td>
<td>Decision making process among executives working in different functional areas</td>
<td>Bolanas et al. [38]</td>
</tr>
<tr>
<td>7</td>
<td>Relationship between shippers and logistics service providers (LSPs)</td>
<td>Qureshi et al. [212]</td>
</tr>
<tr>
<td>8</td>
<td>Risk Control Decision Models for natural disasters</td>
<td>Chun P.T. et al. [48]</td>
</tr>
<tr>
<td>10</td>
<td>Project Planning and Success</td>
<td>Parveen F. [202]</td>
</tr>
<tr>
<td>11</td>
<td>Analysis of Barriers to implement solar power installations in India</td>
<td>Md. Fahim A. and Ravinder K.K. [158]</td>
</tr>
<tr>
<td>12</td>
<td>Knowledge management barriers</td>
<td>M.D. Singh and Kant R. [263]</td>
</tr>
<tr>
<td>13</td>
<td>Renewable Energy Adoption</td>
<td>Vimal K. E. et al. [299]</td>
</tr>
<tr>
<td>14</td>
<td>Factors affecting Safety Management of Nuclear power</td>
<td>Wei L. et al. [316]</td>
</tr>
<tr>
<td>15</td>
<td>Strategic Technology Management in Automobile Industry</td>
<td>Prakash K.K. and Sushil [206]</td>
</tr>
<tr>
<td>16</td>
<td>Senior High School Environmental Studies</td>
<td>Karen O.C. [115]</td>
</tr>
<tr>
<td>17</td>
<td>Development of an ISM model of Factors in Emergency Material Support</td>
<td>Liu Y.L. et al. [137]</td>
</tr>
<tr>
<td>18</td>
<td>Education</td>
<td>Prasad and Suri [207]</td>
</tr>
<tr>
<td>19</td>
<td>Vendor Selection</td>
<td>Mandal and Deshmukh [147]</td>
</tr>
<tr>
<td>20</td>
<td>R &amp;D</td>
<td>Jyoti et al. [109]</td>
</tr>
</tbody>
</table>
In this research the technique of ISM has been applied to derive interrelationships among the variables causing a gap between actual and desired achievement targets of microfinance schemes. These variables refer to the shortcomings in the schemes being implemented. The variables were also classified according to their driving and dependence power as an understanding of the hierarchy of variables involved along with their driving power and dependence is essential for an in-depth appreciation of the issues on hand. ISM provides base for determining the hierarchy of the variables under consideration.

**Figure 3.2: Flow Diagram for preparing ISM**
3.3.5.2 Statistical techniques

Tabular and graphical representations are used for meaningful interpretation of facts and figures. This is followed by an analysis carried out logically on the basis of simple descriptive and analytical statistical techniques and tools (Figure 3.3) which have been duly applied using Statistical Package for Social Sciences (SPSS v.16) software.

![Figure 3.3: Data Analysis Methods](image)

As the process of sampling is non-random and population parameters are unknown, both parametric and non-parametric tests were applied to ensure that the results are in the same direction.

3.3.5.2.1 Parametric tests

*Paired Sample t-test:* The Paired Samples t-Test compares two means that are from the same individual, object, or related units. The two means typically represent two different times (e.g., pre-test and post-test with an intervention between the two time points) or two different but related conditions or units (e.g., left and right ears, twins). The purpose of the test is to determine whether there is statistical evidence that the mean difference between paired observations on a particular outcome is significantly different from zero. The Paired Samples t-Test is a parametric test. [197]
Methods such as the t-test are known as 'parametric' because they require estimation of the parameters that define the underlying distribution of the data; in the case of the t-test, for instance, these parameters are the mean and standard deviation that define the Normal distribution.

**Pearson Correlation test:** Correlation analysis is the statistical tool which can be used to describe the degree to which one variable is linearly related to another [233]. The most common measure of correlation in statistics is the Pearson Correlation. The full name is the Pearson Product Moment Correlation or PPMC. It shows the linear relationship between two sets of data. Two letters are used to represent the Pearson correlation: Greek letter rho ($\rho$) for a population and the letter “r” for a sample. The results will be between -1 and 1. The closer the value of r gets to zero, the greater the variation the data points are around the line of best fit. High correlation refers to a value between 0.5 to 1.0 or -0.5 to 1.0; medium correlation between 0.3 to 0.5 or -0.3 to 0.5 and low correlation ranges from 0.1 to 0.3 or -0.1 to -0.3.

### 3.3.5.2.2 Non-Parametric tests

Nonparametric statistical methods are useful tools for data analysis when there is reason to believe that the outcome variables of interest may fail certain distributional assumptions required for parametric methods.

The Wilcoxon signed-rank test and the Spearman correlation test, which are the non-parametric equivalent of the parametric t-test and Pearson correlation tests respectively, were applied to see if the results were consistent.

**Wilcoxon Signed-rank test:** The Wilcoxon signed-rank test is a statistical comparison of average of two dependent samples. Generally it is the non-parametric alternative to the dependent samples t-test. The Wilcoxon sign test tests the null hypothesis that the average signed rank of two dependent samples is zero. [286]

**Spearman Correlation test:** The Spearman rank-order correlation coefficient, often denoted by the Greek letter (rho), is a nonparametric measure of the strength and direction of association that exists between two variables. [269]
3.3.5.2.3 Descriptive Statistical tools

Descriptive statistics are useful in describing the basic features of the data in a study. They provide simple summaries about the sample and the measures. Since the study is descriptive and analytical in nature, data was also analysed and interpreted by using tabular and graphical method of statistical analysis where frequencies, mean, percentages and radar chart were used.

3.3.5.3 Reliability Test

"Reliability is concerned with the consistency of the research findings”, [95]. Reliability of an instrument refers to the degree of consistency between multiple measurements of a variable. The reliability of the items used in the questionnaire was assessed using the internal consistency test Cronbach’s alpha. This is a measure used to assess the reliability, or internal consistency, of the respondent’s answers to all the items in the questionnaire. In other words, 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. [293] The resulting alpha \( \alpha \) coefficient of reliability ranges from 0 to 1 in providing this overall assessment of a measure’s reliability. If all of the scale items are entirely independent from one another (i.e., are not correlated or share no covariance), then \( \alpha = 0 \); and, if all of the items have high covariance, then \( \alpha \) will approach 1 as the number of items in the scale approaches infinity. In other words, the higher the \( \alpha \) coefficient, the more the items have shared covariance and probably measure the same underlying concept.

Many methodologists recommend a minimum \( \alpha \) coefficient between 0.65 and 0.8 (or higher in many cases); \( \alpha \) coefficients that are less than 0.5 are usually unacceptable, especially for scales purporting to be unidimensional. According to Sekaran [254], if the value of Cronbach’s alpha reliabilities is less than 0.6, they are considered as poor, if the value is 0.7 they are acceptable, and the reliabilities value above 0.8 are considered good. Therefore, the closer the Cronbach’s alpha gets to 1.0 the better is the reliability.
3.3.5.4 Garrett Ranking Technique

The Garrett ranking technique [98] was applied to rank the reasons provided by the respondents for joining the self-help groups. The respondents were given a list of all possible reasons and were then asked to rank the reasons in the order of their importance. The Garrett Ranking Technique was used to quantify these ranks by converting them into score value using the following formula:

\[
\text{Percent Position} = \frac{(R_{ij} - 0.5)}{N_j} \times 100
\]

Where, \( R_{ij} \) = Rank given for the \( i \)th variable by \( j \)th respondent, and \( N_j \) = Number of variables ranked by \( j \)th respondent.

The percent position estimated is converted into scores with the help of Garrett’s Table. Then for each factor (reasons are labelled as factors), the scores of each individual are added and then total value of scores and mean values of score is calculated. The factors having highest mean value is considered to be the most important factor.

3.4 Concluding Observations

The aim of this chapter was to present and discuss the appropriate methodology being used in the present study. Details are given with regard to the sources of data, choice of sample, sample selection, statistical tools and methods for investigation and analysis. The methodology is chosen on the basis of sound logic, the outcome of review of literature and its practicality and will be described in greater detail in subsequent chapters wherein it is applied to accomplish the corresponding research objectives. It is hoped that these techniques would facilitate achievement of the objectives and generate results in a desirable manner.