3

METHODOLOGY

A systematic and careful analysis of information is inevitable in any research. In order to obtain reliable results, it is essential to evolve scientific method of data collection and apply appropriate and reliable techniques for the analysis of information. The methodology followed in the current study is discussed under the following heads.

3.1Nature of Research

3.2 Selection of the Study Area

3.3 Selection of the Sample Units

3.4 Tools for Collection of Data

3.5 Tools for Analysis of Data

3.1 Nature of Research

The study undertaken is descriptive in nature. Descriptive research attempts to describe in detail the relationship between various aspects of research problems. So the adoption of descriptive research design has been very effective in the present study. It attempts to describe systematically a situation, problem, phenomenon, service or programme; it also describes the characteristics of the respondents and the degree of association or relationship between the variables being studied. It helps to make specific predictions.

3.2 Selection of the Study Area

Coimbatore District has been chosen purposively as the locale for this study. The present study is confined to the selected group of rural households in Coimbatore Districts of Tamil Nadu. Since the researcher is in Coimbatore District, hence the researcher familiar with the cultural and economic condition of Coimbatore District, which facilitated to take in-depth analysis of the study.

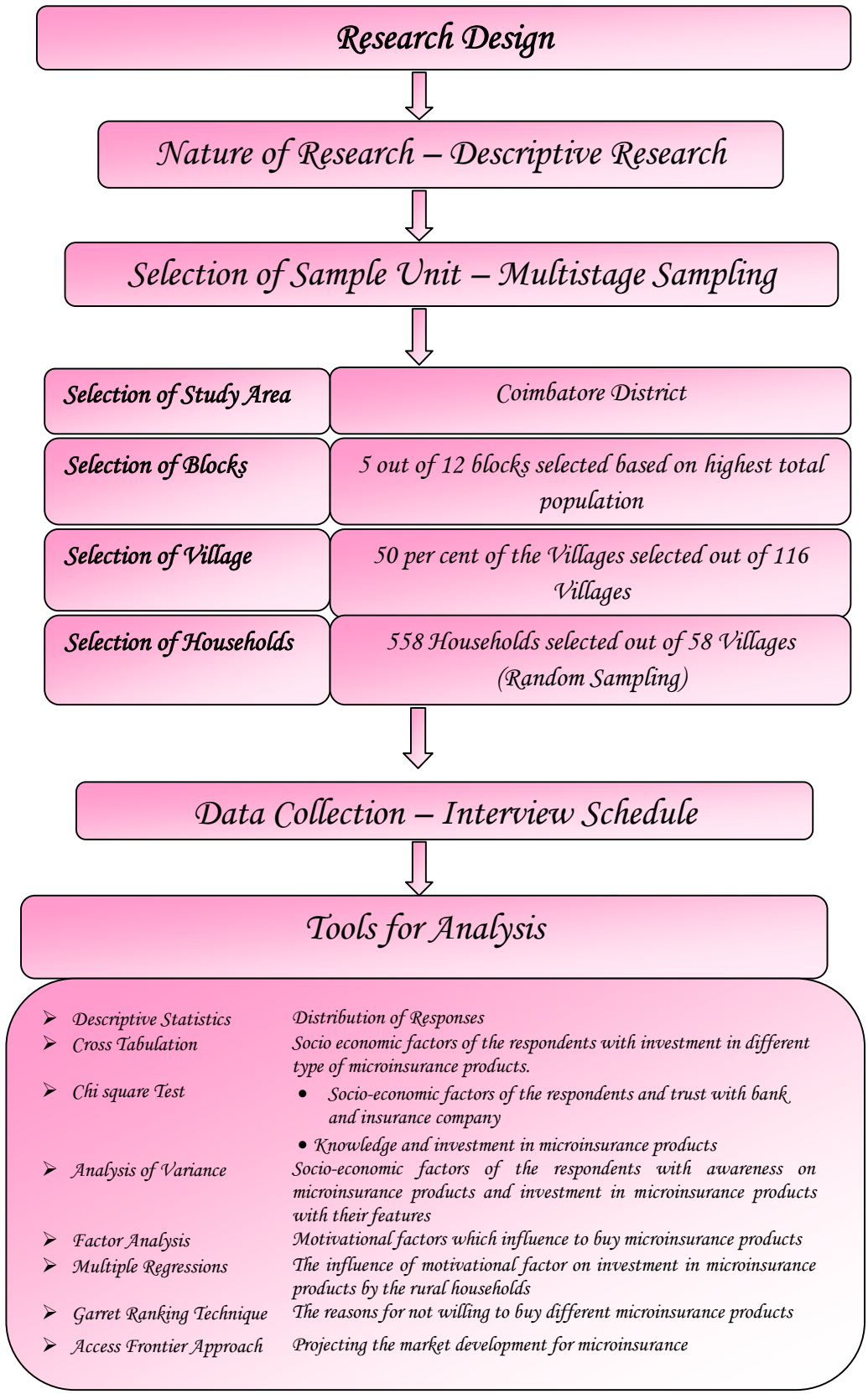

Figure 1 Schematic Representation of Methodology

3.2.1 Profile of the Study Area

The profile of the study area has been divided into administrative setup and demography of the study area.

3.2.1.1 Administrative setup

Coimbatore District is one of the biggest Districts in Tamil Nadu. The District is divided into two revenue divisions with ten taluks and 295 revenue villages for the revenue administration purposes. For the effective implementation of the developmental activities, the district having one corporation, three municipalities, twelve panchayat unions, thirty seven town panchyats and 229 village panchayats. Total cultivated area of the District is 1.77 lakh hectares. Coimbatore District was famous for the dominance of textile mill not only in Tamil Nadu, but for the entire South India. And Coimbatore is also called as the Manchester of South India for its dominance on textile industry.

3.2.1.2 Demography of the Study Area

The total population of Coimbatore District is 34, 58,045 among which male members are 17, 29,297 and female 17, 28,748. Total literacy rate is 76.22 per cent (26, 35,907 members) and male literates are 13, 94,790 and female literates are 12, 41,117 (Census, 2011).

3.3 Selection of the Sample Units

As the sampling is carried out in different stages, the sampling considered for the study is multi stage sampling technique. The stages are

Stage 1: In the first stage, it is the selection of the District. Coimbatore District is selected for this study among the other Districts in Tamil Nadu since it was found to be well developed District based on agro – climate and socio economic condition.

Stage 2: This stage comprised of the selection of blocks from Coimbatore District. It consists of twelve blocks, out of that five blocks are selected based on the highest total population to represent different rural areas.

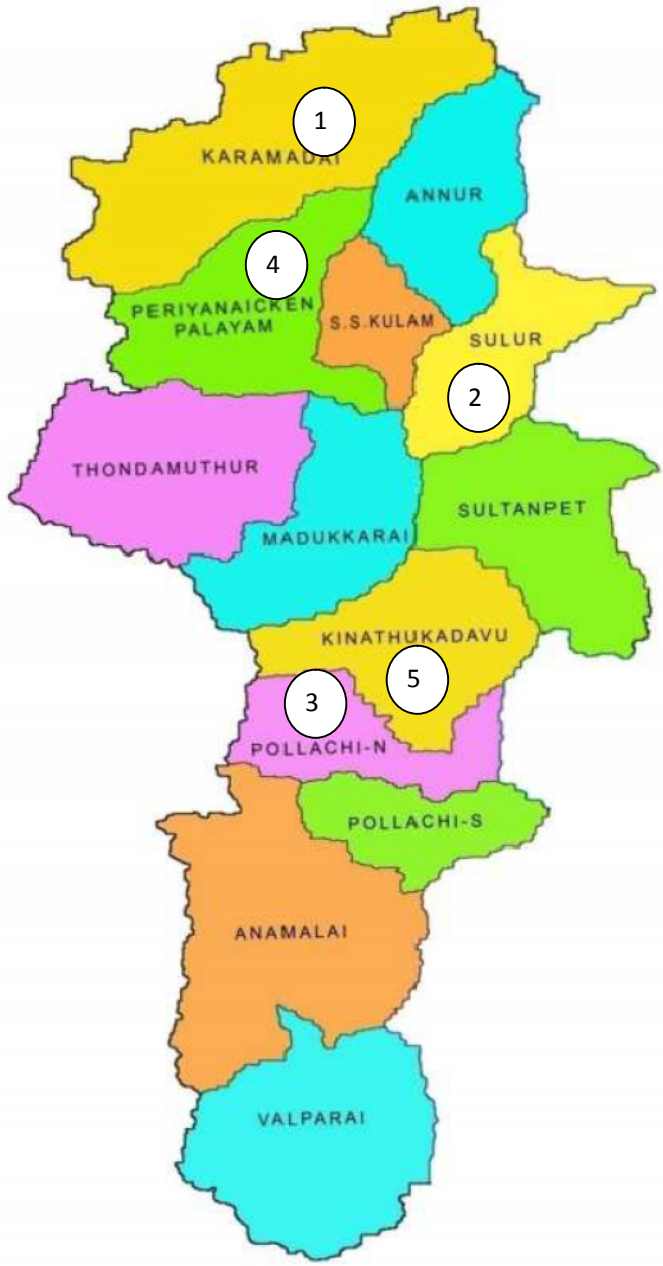

Figure 2

Blocks in Coimbatore District

Table 2

Selected Blocks for the Study

Blocks	Population	Number of Villages
Karamadai	137, 448	17
Sulur	116, 324	17
Pollachi (North)	103, 284	39
Periyanaicken Palayam	101, 930	9
Kinathukadavu	95, 575	34
Total		**116**

Sources: Census of India, 2011

Stage 3: Out of 116 villages in the selected blocks, 50 percent of the villages are selected for the study by adopting random sampling technique.

Table 3

Selected Villages for the Study

Blocks	Number of Villages	Number of Villages Selected
Karamadai	17	9
Sulur	17	8
Pollachi (North)	39	19
Periyanaicken Palayam	9	5
Kinathukadavu	34	17
Total	**116**	**58**

Stage 4: In this stage, from each village 10 households are selected by adopting random sampling technique, it to arrive at 580 respondents for the study. The final sample of 558 resulted and remaining was rejected due to incomplete information provided by the respondents. The details are given in Table 4.

Table 4

Number of Rural Households

Blocks	Number of Villages Selected	Number of Household to be Selected
Karamadai	9	86
Sulur	8	78
Pollachi (North)	19	182
Periyanaicken Palayam	5	49
Kinathukadavu	17	163
Total	**58**	**558**

3.4 Tools for Collection of Data

The task of data collection begins after the research problem has been defined and research design chalked out. While deciding the method of data collection both primary and secondary sources will be used.

3.4.1 Pilot Study

In order to collect primary data from the rural households in the study area, a pre – test was conducted with a sample of hundred rural households. After pre testing necessary modification were made in the interview schedule. Based on the interview schedule, data are collected from the rural households in Coimbatore District.

3.4.2 Primary Data

The primary data collected from 580 respondents through a detailed interview schedule, personally administered and observed from surveying the

locality and from personal interviews. A well structured interview schedule is prepared covering the socio-economic profile of the respondents, financial behaviour, risk and risk management strategies, coping mechanism, insurance knowledge, use, attitude, trust in insurer and product concepts of microinsurance and 558 respondents were validated.

Major variables for data collection included in the interview schedule are

a. Household composition
b. Risks and risk management strategies
c. Insurance – knowledge, use and attitude
d. Product concepts
    i. Health Insurance
    ii. Life Insurance
    iii. Property Insurance

3.4.3 Measurement of Variables

For measurement of variables, Likert scaling technique was adopted for the variables such as financial pressure on different risk, impact of coping mechanism on risk management, awareness on microinsurance, reason for investment in microinsurance and features of microinsurance products.

3.4.4 Reliability and Validity Test

The researcher estimated the reliability of multi-item scales and the index with Cronbach's Alpha Coefficient, which uses the internal consistency approach. This approach treat common item variance as true score (reliable variance) and both unique item variance and random error as error. Calculation of alpha used for the data collected on a single administration of the item.

3.4.5 Secondary Data

Secondary sources of information includes newspaper, magazine, published reports, journals and from the Insurance Regulatory Authority of India.

3.4.6 Period of the Study

- The study was conducted from September 2011 to March 2015.
- The data collection was done for a period of six months from December 2013 to May 2014.

3.5 Tools for Analysis of Data

The researcher used a combination of methods to analyse the data. Different statistical tools were employed for analyzing the data. To draw meaningful inference, a sound methodology accompanied by appropriate tools and techniques of analysis were necessary. The statistical tools and techniques used in the analysis are

3.5.1 Percentage Analysis

3.5.2 Cross Tabulation

3.5.3 Index

3.5.4 Chi-square Analysis

3.5.5 Analysis of Variance

3.5.6 Factor Analysis

3.5.7 Multiple Regression Analysis

3.5.8 Garrett's Ranking Technique

3.5.9 Access Frontier Approach

3.5.1 Percentage Analysis

Percentage analysis was used to present the simple summaries of the data about the sample. It is used to show the distribution of the sample. It is an important tool used in a study mainly to assess the distribution of respondents under each category.

3.5.2 Cross Tabulation

Cross tabulation is used to identify the interrelationship between variables in the research study. Cross tabulation done for monthly saving,

source of borrowings and household indebtedness with monthly income and the socio-economic factors of the respondents with investment in different type of microinsurance products.

3.5.3 Index

Index is calculated to study the knowledge of types of microinsurance products and use of the products.

Index = Core options by the respondents/ Maximum score * 100

3.5.4 Chi-square Analysis

The Chi-square analysis is an important test used to test the independence of two attributes. Chi-square test was applied to study the association between socio-economic factors of the respondents and trust with bank and insurance company. Further it found association between knowledge and investment in microinsurance products.

3.5.5 Analysis of Variance

Analysis of Variance (ANOVA) is a statistical models used in order to analyze the differences between group means and their associated procedures (such as "variation" among and between groups). The Analysis of Variance is used to analyse the socio-economic factors of the respondents and awareness on microinsurance products and investment in microinsurance products and their features.

3.5.6 Factor Analysis

The researcher has used multivariate technique called factor analysis in order to classify the selected variables. Factor analysis is used to describe variability among observed variables in terms of fewer unobserved variables called factors. The observed variables are modelled as linear combinations of the factor, plus “error” terms. The information gained about the interdependences can be used later to reduce to it a set of variables in a data sheet. Factor analysis originated in psychometrics and is used in behaviour sciences, social sciences, marketing product management, operations research and other applied science that deal with large quantities of data.

Factor Analysis is a method for investigating whether number of variables of interest Y1,Y2,.....Yn are linearly related to a smaller number of

unobservable factors F1,F2,.....Fn.. Factor analysis is a way of grouping of variables based on the criterion of common characteristics which would serve as a common denominator for such a classification. The factor analysis is performed to identify the motivational factors to invest in microinsurance.

3.5.7 Multiple Regression Analysis

The general linear model which is commonly estimated using ordinary least square and it has become one of the most widely used analytic techniques in social science. Most of the statistics used in social science are based on liner models, which means trying to fit a straight line to data collected ordinary least square and it is used to predict a function that relate dependent variables (Y) to one or more independent variables (X_1,X_2,X_3,……..X_n). It uses linear function that can be expressed as

$Y= a+bx_i+e_i$ where

a= Constant

b= Slope of line

x_i = Independent Variable

e_i = Error term

Multiple regression analysis is performed to identify the influence of motivational factors on dependent factor investment in microinsurance.

3.5.8 Garrett's Ranking Technique

Garrett's ranking techniques are used to study the reason for not invested in microinsurance products by the rural households. As per this method, respondents have been asked to assign the rank for the reason for not invested in microinsurance products and outcome of such ranking have been converted into score value with the help of the following formula:

Percent Position = $100 (R_{ij} – 0.5) / N_j$

Where,

R_{ij} = Rank given for the i^{th} factor by the j^{th} respondents

N_j = Number of factors ranked by the j^{th} respondents

By referring the Garrett's, the percent position estimated is converted into scores. Then factor the each factor the scores of each individual are added and then mean values is considered to be the most important.

3.5.9 Access Frontier Approach

Access Frontier Approach developed by David Porteous is adopted for projecting the market development of microinsurance. Under this approach the total market is divided into four segments as given below:

Table 5

Market Development Segments

Main Market Segments	Description of the Segment	How Defined in the Study
Within Access Frontier Now	The maximum percentage of households who can access the suggested microinsurance product concepts on current terms and conditions.	Those who are willing to buy suggested microinsurance products.
Within Access Frontier in the Future	A group of households who are likely to access the suggested microinsurance product concepts if terms and conditions are more adapted to them. In the case of microinsurance, they are reluctant to buy now due to limited knowledge, distrust or underestimation of their capacities to pay due to poor money management.	The rest of the market.
Supra-Market	A group of households who may wish to buy microinsurance but are unable to, mostly due to lack of surplus income.	It is hard to estimate insurance poverty line because a big part of the lack of capacity to pay is cause by poor money management practices among the low-income households. It is estimated based on the income sources, financial behaviour, and price sensitivity.

Continued.,

Table 5

Market Development Segments

Main Market Segments	Description of the Segment	How Defined in the Study
Natural Limit	The maximum extent of usage possible after eliminating those who can but choose not to use the microinsurance.	It poses the biggest conceptual problem because a big part of those who say "I do not need the microinsurance product" do it because of ignorance. The calculations are based on willingness to buy, age for life insurance, attitude towards life insurance and possession of household assets for property insurance.

The access frontier approach identifies three zones on the market:

- **Market Enablement Zone** – this is a group that can be reached now (within access frontier now) because it is easy to be covered with new microinsurance products that are demanded by enthusiastic consumers.

- **Market Development Zone** – this is a group within access frontier that might be covered if the new products are well-adapted, effective marketing strategies are in place and there is enabling environment.

- **Market Redistribution Zone** – this is a group defined as supra-market. This is a task for the government to extend an adequate safety net and provide affordable risk-management tools for this group.

The above approach is applied to determine the size of the market for the group within access frontier for different types of products namely health, life and property insurance and to develop marketing strategies to reach those within access frontier now and in future.