CHAPTER III

RESEARCH METHODOLOGY

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Research methodology involves various steps that are generally adopted by the researchers in understanding the research problem along with the logic behind them. It may be understood as a science of studying how research is also done scientifically. It is the way to systematically solve the research problem. Methodology adopted for the study "A study on the Extent of Financial Inclusion among Rural Households in Tirupur District, Tamilnadu" is explained below.

3.1 Hypothesis of the Study:

3.1.1 Formulation of Hypothesis to be tested for Measuring Views of Bankers on Financial Inclusion Initiatives of the Commercial Banks in India:

The following are the hypotheses which are to be tested.

H_0 – There is no significant difference between designation and bankers' views on financial inclusion.

H_1 – There is significant difference between designation and bankers' views on financial inclusion.

H_0 – There is no significant difference between bank type and bankers' views on financial inclusion.

H_2 – There is significant difference between bank type and bankers' views on financial inclusion.

H_0 – There is no significant difference between place of operation and bankers' views on financial inclusion.

H_3 – There is significant difference between place of operation and bankers' views on financial inclusion.

H_0 – There is no significant difference between age and bankers' views on financial inclusion.

H_4 – There is significant difference between age and bankers' views on financial inclusion.

H_0 – There is no significant difference between gender and bankers' views on financial inclusion.

H_5 – There is significant difference between gender and bankers' views on financial inclusion.

H_0 – There is no significant difference between educational qualification and bankers' views on financial inclusion.

H_6 – There is significant difference between educational qualification and bankers' views on financial inclusion.

H_0 – There is no significant difference between years of experience and bankers' views on financial inclusion.

H_7 – There is significant difference between years of experience and bankers' views on financial inclusion.

3.1.2 Formulation of Hypothesis to be tested for Measuring Views of Business Correspondents (BCs) on Financial Inclusion Initiatives of the Commercial Banks in India:

The following are the hypotheses which are to be tested.

H_0 – There is no significant difference between bank type and BCs' views on financial inclusion.

H_1 – There is significant difference between bank type and BCs' views on financial inclusion.

H_0 – There is no significant difference between place of operation and BCs' views on financial inclusion.

H_2 – There is significant difference between place of operation and BCs' views on financial inclusion.

H_0 – There is no significant difference between age and BCs' views on financial inclusion.

H_3 – There is significant difference between age and BCs' views on financial inclusion.

H_0 – There is no significant difference between gender and BCs' views on financial inclusion.

H_4 – There is significant difference between gender and BCs' views on financial inclusion.

H_0 – There is no significant difference between educational qualification and BCs' views on financial inclusion.

H_5 – There is significant difference between educational qualification and BCs' views on financial inclusion.

H_0 – There is no significant difference between marital status and BCs' views on financial inclusion.

H_6 – There is significant difference between marital status and BCs' views on financial inclusion.

H_0 – There is no significant difference between years of experience and BCs' views on financial inclusion.

H_7 – There is significant difference between years of experience and BCs' views on financial inclusion.

H_0 – There is no significant difference between monthly income and BCs' views on financial inclusion.

H_8 – There is significant difference between monthly income and BCs' views on financial inclusion.

3.2 Research Design:

Research design is the blue print for conducting the research plan i.e., how, when and where the data were collected and analysed. Further, it paves the path to answer the research questions and to test the hypothesis stated. The research is descriptive and also analytical in nature since the study focuses to provide a detailed picture of how the financial inclusion initiatives have been implemented among the rural households and analysed the data in various dimensions.

3.3 Sampling Design:

Sampling is the process of selecting a representative group from the population under the study. For the purpose of the study and to fulfill the research objectives the primary data has been collected and the following ideas are considered while designing the sample.

3.3.1 Population of the study:

For the present study, Households, Bankers and Business Correspondents are the target population from which the samples were chosen in Stage I, Stage II and Stage III.

3.3.2 Sampling Frame and Sampling Technique:

3.3.2.1 Households:

Stage I:

Tirupur District has been selected through Convenience sampling.

Stage II:

In Tirupur district, two blocks have been selected on the basis of the parameters viz., salaried, trading and self-employed, farmers and agricultural labourers/wage earners (Hand Book on Census 2011).

Stage III:

In two blocks, 12 villages have been selected on the basis of size of the population given in the State Level Bankers Committee, Tamilnadu. The researcher has selected 6 villages from each block and 2 villages from each population size on the basis of simple random sampling.

i.   Population above 2000 (2 villages in each block)

ii.   Population between 1600 to 2000 (2 villages in each block)

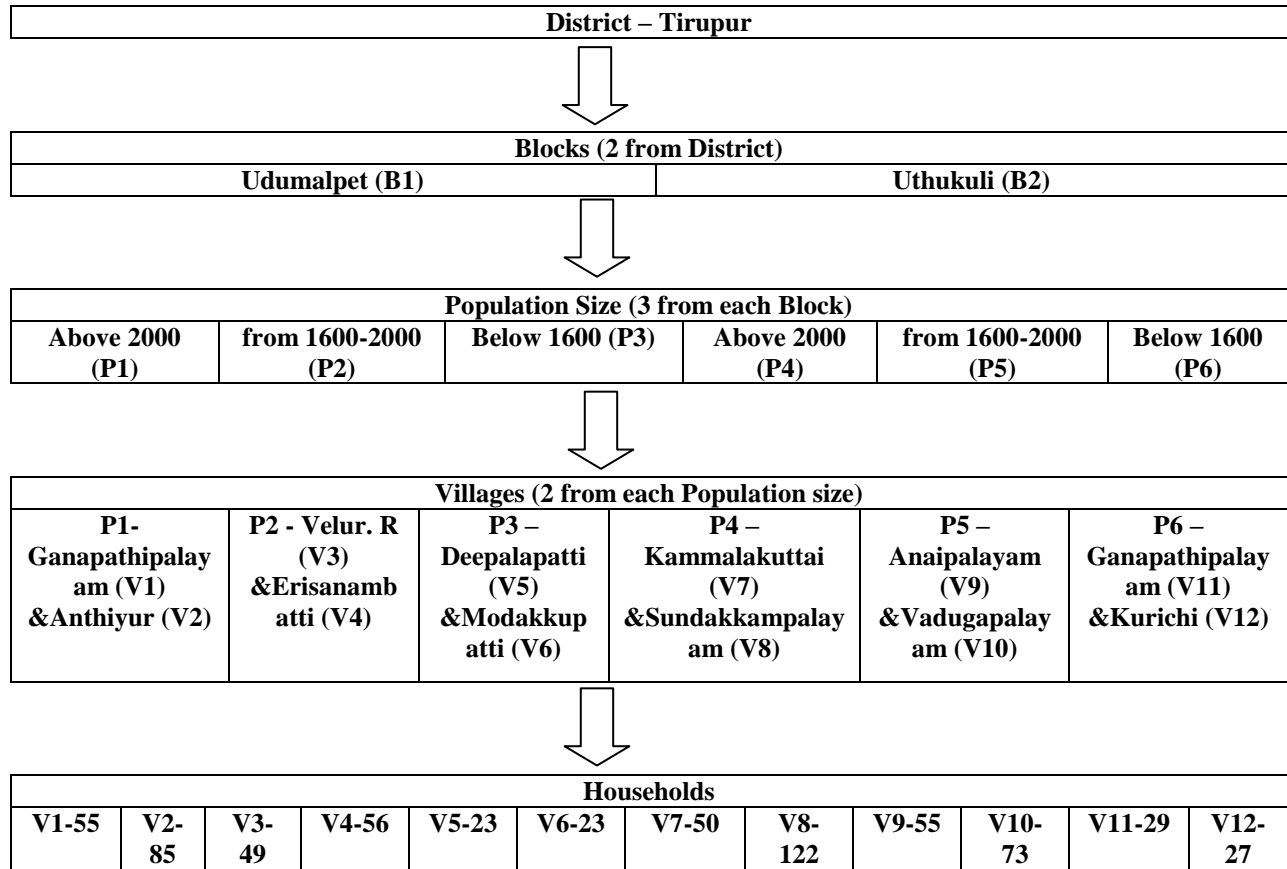iii.   Population below 1600 (2 villages in each block)

Stage IV:

Out of 6283 households, around 10 per cent, i.e., 647 households have been selected systematically by taking every 10th household in each village. Table 3.1 shows how the samples have been chosen for the study.

Table 3.1: Sampling Frame and Sample Size

S. No.	Name of the Block	Category	Name of the Village	No. of Households	10%
1.	Udumalpet	Population above 2000	Ganapathipalayam	547	**55**
			Anthiyur	851	**85**
		Population from 1600-2000	Velur. R	493	**49**
			Erisanambatti	563	**56**
		Population below 1600	Deepalapatti	234	**23**
			Modakkupatti	227	**23**
2.	Uthukuli	Population above 2000	Kammalakuttai	503	**50**
			Sundakkampalayam	1222	**122**
		Population from 1600-2000	Anaipalayam	552	**55**
			Vadugapalayam	732	**73**
		Population below 1600	Ganapathipalayam	285	**29**
			Kurichi	273	**27**
		Total		6283	**647**

The Chart 3.1 clearly explains the sample design for household survey.

Chart 3.1: Sample Design for Household survey

District – Tirupur

⇓

Blocks (2 from District)	
Udumalpet (B1)	Uthukuli (B2)

⇓

Population Size (3 from each Block)					
Above 2000 (P1)	from 1600-2000 (P2)	Below 1600 (P3)	Above 2000 (P4)	from 1600-2000 (P5)	Below 1600 (P6)

⇓

Villages (2 from each Population size)					
P1- Ganapathipalay am (V1) &Anthiyur (V2)	P2 - Velur. R (V3) &Erisanamb atti (V4)	P3 – Deepalapatti (V5) &Modakkup atti (V6)	P4 – Kammalakuttai (V7) &Sundakkampalay am (V8)	P5 – Anaipalayam (V9) &Vadugapalay am (V10)	P6 – Ganapathipalay am (V11) &Kurichi (V12)

⇓

Households											
V1-55	V2-85	V3-49	V4-56	V5-23	V6-23	V7-50	V8-122	V9-55	V10-73	V11-29	V12-27

3.3.2.2 Bankers and Business Correspondents:

Out of 239 Commercial Banks (Public sector and Private sector banks) in both the blocks, 60 bankers (around 25 per cent) have been selected on the basis of simple random sampling method. Likewise, out of 224 Business correspondents of the same Commercial Banks, 56 Business Correspondents (BCs) have been selected for the study.

3.4 Period of Study:

The main survey has been conducted among the households and collected information from bankers and BCs during January 2015 – March 2016.

3.5 Data Collection Method:

The study includes both primary and secondary data collection methods. The primary data has been collected from households of the selected villages of Tirupur district, the bankers and business correspondents. The secondary data is also used to analyse the banking sector development and the extent of financial inclusion in the rural areas of Tamilnadu.

3.6 Data collection instruments:

The researcher prepared an interview schedule for collecting the data from selected households and a printed questionnaire to collect the information from the bankers and business correspondents.

The Secondary sources of information were also collected from the reports of Reserve Bank of India (RBI), reports of State Level Bankers' Committee (SLBC), Census of India, reports of NABARD, All India Debt and Investment Survey (AIIDS), District Lead Bank Tirupur, the various rounds of NSSO Surveys, various published sources of Government of Tamil Nadu such as Directorate of Economics and Statistics, Planning and Development Department, and also from some of the published sources of Government of India like the Planning Commission, the Ministry of Finance, and various independent studies and reports, etc.

3.7 Pilot Study:

The interview schedule and questionnaires were pre-tested with 30 samples among the selected households, bankers and BCs. Based on the opinion and feedback of sample respondents, necessary modifications were incorporated in the interview schedule and questionnaires.

3.8 Tools of Analysis:

In order to analyse the data on the basis of the objectives of the study, the following statistical tools were applied. The "Statistical Package for the Social Sciences" (SPSS) is used to analyse the data with the following tools.

a) Percentage Analysis:

The absolute figures could not help to interpret exact or correct information, therefore percentage method is applied. The data has been tabulated under suitable headings and wherever necessary percentages have been worked out to summarize the data.

b) Multidimensional Scaling (MDS):

Multidimensional scaling is a powerful statistical technique used for representing the preferences of respondents into the groups of 'Dimensions and Map'. MDS is useful in measuring the perception and distinctive images of the stimuli used in research. Perceived relationships among stimuli are then represented by means of a visual display using geometric relationships among points in a multidimensional space. The geometric representation is often called spatial maps. It attempts to plot these data in a map, indicating the similarities and dissimilarities as there are distances between the points .The distance between plotted points in spatial map based on preference data indicates the differences in preference. The important aspect of MDS is the identification of dimensions of favouring and not favouring the stimuli.

c) Index Method and Score Method:

To measure the depth of financial inclusion/exclusion, two methods have been developed – score method and index method. For measuring the level of financial inclusion in rural areas of all the districts of Tamilnadu for the year 2015,

three dimensions have been taken viz., Bank Penetration (BP), Deposit Penetration (DP) and Credit Penetration (CP) as per CRISIL Inclusix and found Financial Inclusion Index (IFI) and ranked the districts according to IFI Score. The reliability for each parameter in the study can be found, since it consists of different units of measurements. Therefore, it has to be normalized by using the Min-Max method in the below listed formula.

$$X_i \text{ (Normalized)} = X_i - X_{(Min)} / X_{(Max)} - X_{(Min)} * 100$$

Where as,

X_i- represents the value of the parameter for the particular district 'i'.

$X_{(Min)}$- represents the minimum value that has been observed over all the districts for a particular parameter.

$X_{(Max)}$- represents the maximum value that has been observed over all the districts for a particular parameter.

The index value of financial inclusion of rural areas in all the districts of Tamil nadu is measured by using the below listed formula:

Index of Financial Inclusion (IFI) = $100 - \dfrac{\sqrt{(100-BP)^2+(100-CP)^2+(100-DP)^2+(100-BC)^2}}{\sqrt{4}}$

Where,

BP = 1st Dimension to measure Branch Penetration in the rural population

CP = 2nd Dimension to measure Credit Penetration in the rural population

DP = 3rd Dimension to measure Deposit Penetration in the rural population

To find out the Index Scores of Financial Inclusion, the researcher has followed Table 3.2 based on CRISIL Inclusix.

Table 3.2: Index Scores of Financial Inclusion based on CRISIL Inclusix

Index Score	Level of Financial Inclusion
>55	HIGH
Between 40.1 and 55.0	ABOVE AVERAGE
Between 25.0 and 40.0	BELOW AVERAGE
< 25	LOW

The financial inclusion score (FIS) and financial inclusion index (FII) for individual household have been developed on the basis of savings, credit and insurance services availed (taking into account both formal and semi formal sources). A household which has access to any of the three financial services, viz. savings, credit and insurance from either formal or semi-formal sources or both is considered as financially included and those who do not have access from either formal or semi-formal sources as financially excluded. The household is assigned financial inclusion score on the basis of use of the financial products and services by sources.

In addition, economic status index (ESI) has also been prepared by taking into account various goods and services possessed by the households to find out the relation between the economic status of the households and their access to financial services.

The methodology used to develop FIS, FII and ESI is discussed in details in Appendix-IV.

d) **ANOVA:**

ANOVA is essentially a procedure for testing the difference among different groups of data for homogeneity. The essence of ANOVA is that the total amount of variation in a set of data is broken down into two types, that amount which can be attributed to chance and that amount which can be attributed to specified causes. In general, ANOVA technique is to investigate any number of factors which are hypothesized or said to influence the dependent variable. One way ANOVA method is used to analyse the views of the bankers and business correspondents on financial inclusion initiatives taken by commercial banks.