# Chapter-III

# RESEARCH METHODOLOGY

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## 3.1 INTRODUCTION

India, as an agrarian economy, plays a major role in economic development. As most of the people in India live in rural areas, there is need for rural development programmes. All such programmes are routed through the commercial banks especially nationalized and co-operative banks. The Reserve Bank of India introduced the lead bank scheme and service area approach to bring about a balanced development in rural and urban India. Hence an attempt is made here to study rural banking and its impact on the rural poor. This will be a base for policy implications of the RBI. In Tamilnadu, Pudukkottai district is the most backward district. Majority of people in the district live in rural areas and depend more on agriculture and allied activities.

## 3.2 PERIOD OF THE STUDY

The study is based on both primary and secondary data. The secondary data are collected from the Lead Bank in Pudukkottai district from 1995-96 to 2002-03. The field survey was conducted during the year ending March 31$^{st}$ 2003 and the data pertaining to the year 2002-03 were collected from the customers and bank employees.

## 3.3 SAMPLING PROCEDURE

In Pudukkottai district, there are 13 blocks namely Annavasal, Aranthangi, Arimalam, Avudayarkoil, Gandarvakottai, Karambakudi, Kurnandarkoil, Manamelgudi, Ponnamaravathy, Pudukkottai, Thiruvarankulam, Thirumayam and Viralimalai. In each block, one bank was selected. The total sample size includes rural branches from all the thirteen blocks. The bank which covers large number of villages has been selected for the sample.

Convenience sampling has been adopted to select 260 customers. Twenty each from one rural branch is selected from each block in the district. The total sample size covers 260 (13 blocks x 1 bank x 20 customers) customers.

To study the attitude of bank employees, four employees have been selected from each bank in the 13 blocks with the compulsory inclusion of bank manager in the samples. The total of sample size employees comes to 52.

## 3.4 METHOD OF DATA COLLECTION

The objectives of the study were clearly explained to the respondents and their responses and co-operation were solicited. Data relating to socio-economic, psychological profile for the household, nature of loan borrowed, loan utilization, repayment of loan and attitude of customers towards banking were collected from the respondents (customers).

Data relating to the profile of bank employees and attitude towards rural banking were collected from the selected bank employees. Comprehensive, pre-tested questionnaires were used to collect primary data through personal interview method from customers and bank employees.

The secondary data at the state level and the district level were collected from the following offices:

1. Lead Bank Department of the IOB Office, Chennai.
2. Lead Bank of the IOB Office, Pudukkottai.
3. Office of the Directorate of Economics and Statistics, Chennai.
4. Office of the Assistant Director of Statistics, Pudukkottai.
5. IOB Head Office, Madurai.

## 3.5 FRAMEWORK OF ANALYSIS

In order to analyse the data to fulfill the objectives of the present study, various statistical tools have been used. In order to measure the personality traits of the customers, the personality index is prepared as like the behavioural empowerment index and economic and social empowerment index prepared by Debra Nelson[1] and Singh[2] in their studies.

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1. Debra Nelson and James Campbell Quick, **Organisational Behaviour,** Thomson, South–Western Australia, 2003, pp.203-204 and 304-389.

2. Singh, Padam and Rattan Chand, "Quality of Live Approach for Identification of Poor", **Journal of Rural Development,** 2000, 19 (1), pp.27-68.

$$\text{Personality Index} = \frac{\sum_{i=1}^{n} PS_i}{\sum_{i=1}^{n} MPS} \times 100$$

Whereas

PS    — Score of the personality variables.

MPS  — Maximum score of the personality variables.

1,...n  — Number of personality variables.

The T-statistic were calculated to measure the significant differences among the bank employees in selecting the rural branches to work as applied by M.V.V.S.Murthy[3] in his study, "Jawahar Rozgar Yojana: An impact study in Visakhapatinam Districts of Andhra Pradesh".

To test the differences in the selected variables among the bank employees, mean difference test has been used. For testing whether there is any significant difference in mentoring, the reasons for selecting the rural branch among the male and female bank employees 't' test has been used.

$$t = \frac{\overline{X_1} - \overline{X_2}}{\sqrt{n_1 S_1^2 + n_2 S_2^2}} \sqrt{n_1 n_2 (n_1 + n_2 - 2)}$$

Where     $X_1$ is the mean of the variable in the male group.

$X_2$ is the mean of variable in the female group.

$S_1^2$ is the variance in the male group.

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3. M.V.V.S. Murthy, "Jawahar Rozgar Yojana: An Impact Study in Visakhapatinam District of Andhra Pradesh", **Asian Economic Review,** 2003, 45(1), April 2003, pp.184-186.

$S_2^2$ is the variance in the female group.

$n_1$ is the sample size in male group.

$n_2$ is the sample size in female group.

For measuring the attitude of the employees towards the various aspects of rural banking, Analysis of Variance was done. The F-statistic is calculated and tested at 5 per cent level as applied by Saxena.[4]

To analyse the customers satisfaction towards the banking services and the employees attitudes towards rural banking, the factor analysis is applied. It is used to convert the plenty of variables into factors and to exhibit the inter relationship between the variables and the factors with factor loadings as applied by Sangeetha Arora (2000).[5]

The Multiple Regression analysis is applied to analyse the determinants of loan amount, loan utilization, impact of profile variables on overall satisfaction towards rural banking and the impact of attitude to various aspects of rural

4. R.P. Saxena, "Owners of Premium Cars and their Satisfaction Level: An Empirical Investigation", **Paradigm**, 4 (1), January–June, 2000, pp.99-110.

5. Sangeeta Arora, "Factor Analysis–An Application to access Customer Satisfaction", **Paradigm**, 4(1), January–June, 2000, pp.28-34.

banking and the overall attitude to rural banking as applied by Sri Hari et al.,[6] (2001) and Moniruzzaman (2002).[7]

The log linear model applied in the present study is $Y = a_1 X_1 b^1, X_2^{b2} \ldots X_n^{bn}.e$ which is converted into log form.

$$\log y = \log a + b_1 \log X_1 + b_2 \log X_2 + \ldots + b_n \log X_n + e$$

Where Y is dependent variable; $X_1, X_2, \ldots X_n$ – are independent variables; $b_1, b_2 \ldots b_n$ – are regression co-efficients of independent variables and a is intercept and e–error terms.

Discriminant function analysis was used to examine the related indicators that are important in distinguishing the customers into defaulters and non-defaulters; wilful defaulters and non-wilful defaulters. The equality of variance-co-variance matrics of multivariate normal population was tested before testing the mean differences between the groups through $D^2$ analysis.

The functional form for the analysis is as follows:

$$Z = a_1 X_1 + a_2 X_2 + \ldots + a_n X_n$$

Where Z – total discriminant score for two groups.

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6. Sri Hari Naidu, G. Sunil Kumar Babu, R. Srinivasulu and S.K. Apsar Jahan, "Resource Use Efficiency in Groundnut in IPM Technology", **The Andhra Pradesh Agricultural Journal**, 48 (3 & 4), 2001, pp.321-323.

7. Mohamed Moniruzzaman, "Loan Utilisation Pattern of Bangaladesh Rural Development Board (BRDB) Women Co-operatives and Grameen Bank (GB) Groups: A Comparative Analysis", **Journal of Rural Development**, 21 (1), January–March, 2002, pp.67-84.

$X_1, X_2, \ldots X_n$ – Discriminatory variables.

$a_1, a_2, \ldots a_n$ – Discriminant co-efficients.

The application of discriminant function analysis as in the study done by

Subburaj et al., (2003),[8] Nagaraja et al., (1996),[9] Ambiga Devi (2003)[10] and Arene

(1996)[11].

## 3.6 LIMITATIONS

The present study was conducted through personal interviews with a

pre-tested questionnaire. Although all the customers did not maintain adequate

records, they were able to answer the questions orally from their memory. The

information so collected might suffer from a certain degree of recall bias. The

recall bias was minimized by cross–checking. The study was confined only to the

selected customers and bank employees. The scope of the present study is limited

to the blocks in Pudukkottai. All the subjective variables are measured by scaling

8. B. Subburaj, R. Karunakaran and R. Karthikeyan, "What Discriminates a member of a Co-operative from a Non-member? An application of Discriminant Function Analysis", **Indian Co-operative Review**, 40 (3), January, 2003, pp.161-165.

9. N. Nagaraja, S.K. Surekha and M.J. Chandreganda, "Factors Discriminating High and Low Management Efficient Serculturists", **South Asian Journal of Management**, 3 (2 and 3), April–September, 1996, pp.58-63.

10. P. Ambiga Devi, "Share of Women in Total Family Income–A two group Discriminant Analysis", **Asian Economic Review**, 45 (2), August 2003, pp.373-378.

11. C.J. Arene, "Agricultural Financial Ratios, Discriminant Analysis and Prediction of Corporate Bankruptey in the Community Banking System in Nigeria", **Vikalpa**, 21 (3), July–September, 1996, pp.37-45.

techniques. The applied statistical tools have their own limitations like the linear relationship between the dependent and independent variables.

## 3.7 HYPOTHESES

The null hypotheses framed during the course of the study are as follows:

1. There is no significant difference in the target of various financial agencies in lending to agricultural sector.

2. There is no significant difference in the target of various financial agencies in lending to non-farming sector.

3. There is no significant difference in the target of various financial agencies in lending to other priority sector.

4. There is no significant difference in the performance of various financial agencies in lending to agricultural sector.

5. There is no significant difference in the performance of various financial agencies in lending to non-farming sector.

6. There is no significant difference in the performance of various financial agencies in lending to other priority sector.

7. There is no significant difference among the different age groups of bank employees in their attitude to rural customers, rural banking, job analysis, rural branches and overall satisfaction.

8.   There is no significant difference among bank employees in different jobs regarding their attitude to rural customers, rural banking, job analysis, rural branches and overall satisfaction.

9.   There is no significant difference among the different levels of educated bank employees in their attitude to rural customers, rural banking, job analysis, rural branches and overall satisfaction.

10.   There is no significant difference among the different family sizes of bank employees in their attitude to rural customers, rural banking, job analysis, rural branches and overall satisfaction.

11.   There is no significant difference among the bank employees under different grades in their attitude towards rural customers, rural banking, job analysis, rural branches and overall satisfaction.

12.   There is no significant difference among the different job experiences in rural branches of bank employees regarding their attitude to rural customers, rural banking, job analysis, rural branches and overall satisfaction.

13.   There is no significant difference among the bank employees hailing from various geographical areas in their attitude to rural customers, rural banking, job analysis, rural branches and overall satisfaction.