CHAPTER III

RESEARCH METHODOLOGY

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3.1 INTRODUCTION

Any organization seeking to attract and retain customers in a competitive environment turns to marketing. In turn, marketing can only create strategies for the attraction of customers and customer loyalty, if the organisation understands its customers. This understanding comes through research.¹ Research problems are unique and require planning to obtain solutions. Research requires the systematic and objective collection, analysis and interpretation of information for decision-making on all kinds of problems by means of recognised, scientific methods.²

Research is a time-consuming process. Researchers have to be systematic in their approach to gather reliable and valid data, which they have to interpret and understand. The interpretation and understanding of this data is based on the researcher’s knowledge of existing theory and literature in the realms of interest, as well as personal experience and perspective³. Researchers generalize and specify limitations to theory generalization. Generalization can be established most effectively through the development of explanatory theory, as it is the application of theory that turns fact-finding into research.

Research Methodology is the way of systematically solving a research problem. Under it, the researcher acquaints himself with the various steps generally adopted to study a research problem, along with the underlying logic behind them. “The Advanced Learner’s Dictionary of Current English” lays down the meaning of research as “a careful investigation or inquiry specially through search for new facts in any branch of knowledge.”⁴ Redman and Mory⁵ defined research as “looking for new facts in any
branch of knowledge.” This chapter provides a theoretical and practical discussion of the research process. A focus is provided on the population and selected sample of the study, the design of the questionnaire, the data collection method selected, as well as the data analysis technique applied to the research study.

3.2 RESEARCH DESIGN OF THE STUDY

The most important stage after defining the research problem is preparing the design of the project report, which is popularly known as the research design. A research design helps to decide upon issues like what, when, where, how much, by what means and the like with regard to an enquiry or a research study.

Seltiz et.al. (1962) defined, “A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. In fact, the research design is the conceptual structure with which research is conducted. It constitutes the blueprint for the collection, measurement and analysis of data”. A research design is a plan or blueprint of how the researcher intends conducting research (Mouton, 2001).

In the present study, the descriptive type research design has been formulated. Descriptive research seeks answers to questions like who, what, when, where and how. Accuracy is very important in descriptive research. Descriptive research aims to describe phenomena and needs accurate observations, and the research design must focus on the validity and reliability of the observations (Terre Blanche et.al.2006). Since this research
describes the profile of the employees, agents and policyholders in LIC and their perception on the customer relationship management in LIC, it is descriptive in nature.

3.3 SAMPLING PROCEDURE

3.3.1 Selection of the Area of the Study

Sivagangai District was purposively selected as the study area by the researcher as Sivagangai is one of the developing districts. Modernization and literacy in the district are growing at a faster rate. Familiarity to the culture, local dialect and infrastructural facilities available at this district would help the researcher to develop a good rapport with the employees, agents and policyholders of the LIC of India in the district and obtain better and valid responses.

3.3.2 Sampling Method

The probability sampling method was chosen for this study because in this method each element of the population had a known, non-zero chance of being included in the sample.

3.3.3 Sampling Technique

Stratified sampling, followed by simple random sampling was used in this study. The reason for selecting this sampling technique is that the sampling frame of the study was divided into strata, namely all the four branches where the LIC of India are located, and the sampling process was performed separately on each stratum.

3.3.4 Sampling Size

The size of the sample determines the statistical precision of the findings. The size of the sample is a function of change in the population parameters under study and
the estimation of the quality that is needed by the researcher. Generally, larger samples result in more precise statistical findings.

Sivagangai District comprises all the four Life Insurance Corporation branches namely Tirupathur, Karaikudi, Devakottai and Sivagangai. The sample comprised 112 employees, 140 agents and 416 policyholders. 668 questionnaires were filled in. Since 18 of these 668 questionnaires were found to have some inconsistent responses for few questions, they were not included for the study. Hence, the conclusions drawn in this study relate to the responses given by only 650 respondents. The sample respondents were chosen on the basis of random sampling method (110 employees) (140 agents) and (400 policyholders). The name of LIC branch and sample policyholders, agents and employees are given in Table 3.1.

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Branch</th>
<th>Sample Policyholders</th>
<th>Final Sample</th>
<th>Sample Employees</th>
<th>Final Sample</th>
<th>Sample Agents</th>
<th>Final Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Tirupatthur</td>
<td>104</td>
<td>96</td>
<td>24</td>
<td>24</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>2.</td>
<td>Karaikudi</td>
<td>104</td>
<td>104</td>
<td>40</td>
<td>38</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>3.</td>
<td>Devakottai</td>
<td>104</td>
<td>100</td>
<td>24</td>
<td>24</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>4.</td>
<td>Sivagangai</td>
<td>104</td>
<td>100</td>
<td>24</td>
<td>24</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>416</td>
<td>400</td>
<td>112</td>
<td>110</td>
<td>140</td>
<td>140</td>
</tr>
</tbody>
</table>

Source: Primary Data.

3.3.5 Collection of Data

The major source of data collection is primary data for this study. Three questionnaires were constructed to three categories of respondents, to whom it was felt
that it can provide real picture for the purpose of the study. The first questionnaire was targeted to policyholders of LIC of India that is people, who insured a policy. This questionnaire starts with basic demographic details like age, education, profession. Then close ended, multiple choice questions were used to know the CRM practices of LIC of India. Later questions with five point likert scale rating about their perceptions on components like service quality, customer satisfaction, customer retention and customer loyalty were given.

The second questionnaire was targeted to employees of LIC of India. Starting with demographics and profiles of employees, it proceeded to some dichotomous and multiple choice close ended questions. Questions on the opinion about CRM strategy factors are made with five point likert scaling technique.

The third questionnaire was targeted to Agents of LIC of India. Starting with demographics and profiles of agents with LIC of India and experience it preceded to some questions like means of approaching the prospective client, awareness programme organized, opinion about the services rendered by their branch are made with five point likert scaling mode asking them to give rating.

As it was felt that these three categories of respondents were the ones who could provide realistic, proper and experienced response for the application of CRM practices the relativity of customer satisfaction questionnaires were made for them.

Secondary data were collected from various sources such as journals, magazines, publications and various websites including the official websites of IRDA and LIC of
India. The published research reports and market studies also helped to probe into the problem.

### 3.3.6 Framing of Questionnaire

Three forms of questionnaires had been prepared in the present study one for examining the policyholders’ perception of service quality, customer retention, customer satisfaction and customer loyalty in Life Insurance Corporation, one for analyzing the CRM practices implemented at LIC of India and another for studying the awareness of insurance agents towards CRM practices. The relevant variables related to customer relationship management had been collected from various previous studies and also the views of the experts in this field.

### 3.3.7 Survey Instrument

The respondents were administered a structured questionnaire (shown in Appendix). The questionnaire begins with a brief introduction indicating the importance and purpose of the study. It also assures respondents about the confidentiality of their identity and that the information given by them would be strictly maintained and the survey would be strictly used for academic purpose. The self-administered questionnaire was developed using scales from previous studies. The questionnaire used multiple choice questions and statements to be rated on Likert’s five point scale. The item scales are adopted from previous studies, collected from literature review. Likert’s five point scale is used to measure the agreement or satisfaction with 5– Strongly agree/Highly
satisfied, 4 – Agree/ Satisfied, 3 – Neither agree nor disagree/ Neutral, 2 – Disagree / Dissatisfied, 1 – Strongly disagree/ Highly dissatisfied.

3.3.8 Discussion on Scales Used

A Likert item is a statement. The respondent is asked to indicate the level of agreement or disagreement. It is considered symmetric or "balanced" because there are equal amounts of positive and negative positions. Often five ordered response levels are used, although many researchers advocate using seven or nine levels.

After the questionnaire is completed, each item may be analyzed separately or in some cases item responses may be summed to create a score for a group of items. Hence, Likert scales are also called ‘summative scales’. Further, Likert scales are arbitrary. The value assigned to a Likert item has no objective numerical basis except indicating that level is more positive than preceding level.

From the above it can be concluded that five or seven point balanced Likert scales are equally preferred. However the preference depends on the application and context of research.

In the survey of evaluation of customer relationship management in LIC, a five point scale is used as it is felt optimal because:

1. The questionnaire has more number of variables and items.
2. Customers may find it difficult to rate on seven point scale.
3. Questionnaire with seven point scale takes more time to fill up and customers are likely to be reluctant to spend more time.
4. Traditionally customer surveys use five point scale.
3.3.9 Pilot Study

The purpose of pilot study is to get an idea on the validity of conceptual approach and see how the content of questionnaire is understood by the respondents and carry out necessary corrections before a full-fledged survey is conducted. Approximately 30 Policyholders, 15 Employees and 15 Agents of LIC in the district were approached. The respondents were requested to fill in the questionnaire on the spot and identify any areas of questionnaire which are not clear or confusing or offer suggestions about the language. This also helped us to understand the time taken by the respondent to complete the questionnaire. It took about 15 to 20 minutes to complete the questionnaire. There was no confusion or vagueness on the instructions, and content. The researchers also did not have much difficulty in getting the cooperation of the respondents. The exercise went off smoothly. Minor corrections in language to make questions clear were carried out for improving clarity.

The pilot study was considered satisfactory and full survey was planned. The responses collected from pilot study were not used in the analysis.

3.3.10 Reliability of the Questionnaire

Reliability and validity are the hallmarks of good measurement and the keys to assessing the trustworthiness of any research conducted. Reliability is the degree to which a measurement or scale produces the same results if repeated. The reliability of a measurement scale used in a survey questionnaire can be assessed by determining the association between scores from different administrations of the scale. If the association
is high, the scale produces consistent results and is therefore regarded as a reliable measure. The reliability measurement for this study was the internal consistency reliability test. This approach compares different samples of the items being used to measure a phenomenon, during the same time period. This can be done by means of a split-half reliability test, also known as the co-efficient alpha or Cronbach’s alpha, and results exceeding 0.60 reflect the lower level of acceptability. Cronbach’s Alpha reliability co-efficient normally ranges between 0 and 1. The closer Cronbach’s alpha co-efficient is to 1, the greater is the internal consistency of the items in the scale. Nunnaly (1978) has indicated 0.7 to be an acceptable reliability co-efficient. In the study, as the Cronbach’s alpha is above the lower limit of acceptability, it is confirmed that the measurement set used in the study was reliable.

3.4 FRAMEWORK OF ANALYSIS

For analyzing the data collected during the investigation, the following statistical tools were used based upon the nature of data and relevance of the information required:

3.4.1 Percentage Analysis

Conventional percentage analysis has been used to discuss the demographic characteristics of sample respondents.

3.4.2 Likert-type Scale

The interview schedule used comprises both optional type and statements in Likert’s five points scale. The responses relating to perception regarding the components of Customer Relationship Management (CRM) are obtained from the policyholders,
employees and agents of LIC in Sivagangai District in the five point scale, which ranges as follows: 5 – strongly Agree(SA), 4 – Agree (A), 3 – Neutral (N), 2 – Disagree (DA) and 1 – Strongly Disagree (SDA).

3.4.3 Analysis of Variance (ANOVA)

It is used for examining the differences in the mean values of the dependant variable associated with the effect of the controlled independent variables, after taking into account the influence of the uncontrolled independent variables. Essentially, the ANOVA is used as a test of means of two or more populations. The one-way analysis of variance involves only one categorical variables or a single factor. The ANOVA is applied when the categorical variables in interval scale is calculated and compared with the respective table value of $F[\frac{(K-1)/(n-K+1)}]$ degree of freedom where as K – number of groups and n- number of samples.

$$F = \frac{\text{Variance between Groups}}{\text{Variance within Groups}}$$

In the present study, the one way analysis of variables has been used to examine the association between the profile of employees and their opinion about CRM strategy in Life Insurance Corporation of India.

3.4.4 Garrett’s Ranking Techniques

To find out the most significant factor, which influences the respondent, Garrett’s ranking technique was used. As per this method, respondents have been asked to assign
the rank for all factors and the outcomes of such ranking have been converted into score value with the help of the following formula:

$$\text{Percept position} = \frac{100 (R_{ij} - 0.5)}{N_j}$$

Where

$$R_{ij} = \text{Rank given for the } i\text{th variable by } j\text{th respondents}$$

$$N_j = \text{Number of variable ranked by } j\text{th respondents}$$

With the help of Garrett’s Table, the percent position estimated is converted into scores. Then for each factor, 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.

3.4.5 Chi-Square Test

This test is used to test whether the discrepancy between expected and observed values may be attributed the chance (fluctuations of sampling) or whether the deviation is really because of the inadequacy of the theory to fit the observed data.

In order to apply the Chi-square test either as a test of goodness of fit or as a test to judge the significance of association between attributes, it is necessary that the observed as well as theoretical or expected frequencies must be grouped in the same way and the theoretical distribution must be adjusted to give the same total frequency as we find in case of observed distribution. $\chi^2$ is then calculated as follows:
\[
\text{Chi-square} = \sum \frac{(O - E)^2}{E}
\]

Where

\(O_{ij}\) = observed frequency of the cell in ith row and jth column

\(E_{ij}\) = expected frequency of the cell in ith and jth column

In the present study, chi square test has been used to examine the association between the profile of the agents and their overall opinion about CRM in Life Insurance Corporation.

3.4.6 The Kruskal-Wallis H Test

The Kruskal-Wallis H Test is a non parametric test that can be used to compare more than two populations in a completely randomized design. The Kruskal-Wallis H test is calculated by

\[
H = \frac{12}{N(N+1)} \left( \frac{R_1^2}{n_1} + \frac{R_2^2}{n_2} + \cdots + \frac{R_k^2}{n_k} \right) - 3(N + 1)
\]

Where

\(n_1, n_2, \ldots, n_k\) are the number in each of K samples

\(N = n_1, n_2, \ldots, n_k\) and \(R_1, R_2, \ldots, R_k\) are rank sums of each sample.

The statistical analysis was done using the Statistical Package for Social Science (SPSS)
In the present study the test has been used to find out the significant difference in the perception score of the policyholders on service quality of LIC based on personal variables such as age, education, occupation, family size, monthly income.

3.4.7 Factor Analysis

Factor analysis identifies common dimensions of factors from the observed variables that link together the seemingly unrelated variables and provides insight into the underlying structure of the data. Varimax Rotation is one of the most popular methods used in the study to simplify the factor structure by maximizing the variance of a column of the pattern matrix. The common factors themselves are expressed as linear combinations of the observed variables.

In the present study, factor analysis has been applied to narrate the variables into the factors related to 1) Problem aspects 2) Claim aspects 3) Policyholders aspects 4) Premium aspects and 5) Policy aspects.

3.4.8 Kendals Co-efficient Analysis

This is a non–parametric test. This test can be used for measuring the ranking, which is in the top position. It can be applied for when there are more than two ranking to be measured. The ranks are given to statement based on the total scores. In the present study the test has been applied to know the policyholders’ opinion about customer loyalty in Life Insurance Corporation of India.

3.4.9 Friedman Test

This is a non – parametric test. This test can be used to find out the mean ranking, as per the mean rank which one is in the top position under the ten segments of CRM
services in LIC of India and in the study, the test has been applied to examine the agents’ opinion about the services rendered by their branch in LIC of India. The ranks were assigned based on the total scores by using SPSS packages.

**3.4.10 Student ‘t’ Test**

Student ‘t test’ has been used which is considered an appropriate test for judging the significance of a sample mean or for judging the significant difference between the means of two samples in case of small samples when population variance is not known. In case two samples are related, the researcher uses paired ‘t’ test for judging the significance of the mean of difference between two related samples. It can also be used for judging the significance of the co-efficient of simple and partial correlations. The relevant test statistic, ’t’, is calculated from the sample data and then compared with its probable value based on ‘t’ – distribution at a specified level of significance for concerning degrees of freedom for accepting or rejecting the null hypothesis. It may be noted that ‘t’ test applies only in the case of small samples when population variance is unknown.

In the present study this test has been framed to examine the significant difference between “the favourable and the unfavourable opinion of the policyholders about Customer Retention at Life Insurance Corporation of India”.

**3.4.11 K.S. test**

Kolmogorov-Smirnov one-sample test assesses the degree to which an observed pattern of categorical frequencies differs from the pattern that would be expected on the
null hypothesis. The test statistic here designated $D_{\text{max}}$, is the maximum difference between the cumulative proportions of the two patterns.

Formula $D = O - E$

$D$ – refers to calculated value

$O$ – refers to cumulative observed proportion and

$E$ – refers to cumulative expected proportion.

In the present study, this test has been used to find if there is any difference in the importance of ratings given by the employees on various statements with regard to how they solve the problems of the policyholders.

**3.5 SUMMARY**

The chapter deals with the components of Research Methodology. Research is a time consuming process. Research methodology is a scientific process of solving a research problem. The chapter provides a theoretical and practical discussion of the research process. Hypotheses are formed and they are verified to validate the study. Care is bestowed on the sampling method, design of the questionnaire and the method of data collection, besides the data analysis technique applied to the dissertation. The tools adopted for the analysis and the reliability of the results have also been discussed in this chapter. In the next chapter, the conceptual framework of CRM is discussed.
REFERENCES