Chapter - V

Research Methodology for the Present Study
RESEARCH METHODOLOGY FOR THE PRESENT STUDY

Introduction

“All progress is born of inquiry. Doubt is often better than over confidence, for it leads to inquiry, and inquiry leads to invention” is a famous Hudson Maxim in context of which the significance of research can well be understood. Research inculcates scientific and inductive thinking and it promotes the development of logical habits of thinking and organization.

The apt and appropriate Methodology and systematic operational steps with well-controlled tools leads the successful conduct of any research in any field. It is the key aspect which governs the outcome of the research. It encompasses and directs the researcher to conduct the research in a systematic process which ensures and facilitates the accuracy of the outcomes. It deals with the data collected for the study, sources of data, sampling plan of the study, population of the study, location of the research, instrument used to collect data, method of collecting data, analysis and interpretation of the collected data with different statistical tools in order to find out the strength of the collected data and limitations of the study.

Hypotheses of the Study

1. There is no significant relation between the gender and the main objectives for choosing the Endowment Policy.
2. The respondents educational standards do not have any direct influence in choosing the Endowment Policy of LIC.
3. There is no association between the marital status and the main objectives for choosing the Endowment Policy.
4. There is no relationship between the type of family and the main objectives for choosing the Endowment Policy.

5. The occupation of the respondents differs significantly from choosing the main objectives of Endowment Policy.

6. The income level do not have significant relationship among the factors which influences the consumer behaviour towards procuring the Endowment Policy.

7. There is no considerable relationship between the Age and the factors influencing the consumer behaviour towards the Endowment Policy.

8. There is no significant relationship existing among the four major dimensions such as product attributes, product services, product information and risk coverage aspects.

**Sampling Plan**

**Sample Unit**

The sampling unit to carry out the research work is Life Insurance Corporation of India, Perambalur branch, from Perambalur District. Life Insurance policies are classified into five categories namely Term policy, Endowment policy, Whole life policy, Unit linked policy and Pension policy. The Researcher has taken the Endowment policy alone for the in-depth study. This policy consists of 14 plans, out of which top seven polices specifically

1. Endowment with Profits
2. Limited payment with profits
3. Marriage / Education Annuity with profits
4. New Janaraksha
5. Jeevan Anand
6. Jeevan Saathi and
7. Jeevan Chhaya
are taken to carry out the research work. Since the other plans as compared to the top major plans have obtained the very lowest percentage during the past five years, the other eight polices are not incorporated in the study. The existing Endowment policyholders who are the customers during the period from 2006-2007 to 2010-2011 are taken for the study. In this study period, there are 32,899 Endowment Policyholders among the three taluks of Perambalur district. Hence, the size of the population for the present study is 32,899. The stratified simple random sampling (disproportionate) method is used to collect the data from the sample respondents.

Sample Size

The Endowment Policyholders of the Life Insurance Corporation of India, Perambalur branch in Perambalur District are considered for the study. According to the Scientific method for the above mentioned Research population, the sample size required at 90% level of significance is 269. The sample size required at 95% level of significance is 380 and for 99% level of significance was 651.

The sample of 200 respondents is taken from each plan and the questionnaire was distributed for collection of data from the respondents. The investigator in person, along with the constant support of an agent went to three Taluks of Perambalur District namely Perambalur, Kunnam and Veppanthattai and distributed the questionnaire to the respondents.

Since the Respondents response rate ranges from 70% to 75%, the researcher has decided to take 140 sample respondents from each plan for the convenient and effective calculation purpose. Hence the size of the sample for the present study is 980 by using stratified simple random sampling (disproportionate) method.
Sample Design

<table>
<thead>
<tr>
<th>Endowment Policyholders</th>
<th>Total Endowment Policyholders</th>
<th>Selected Sample Size (Disproportionate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endowment with Profits</td>
<td>4347</td>
<td>140</td>
</tr>
<tr>
<td>Limited Payment Endowment</td>
<td>1203</td>
<td>140</td>
</tr>
<tr>
<td>Marriage/Education Annuity with profits</td>
<td>2031</td>
<td>140</td>
</tr>
<tr>
<td>New JanaRaksha</td>
<td>13400</td>
<td>140</td>
</tr>
<tr>
<td>Jeevan Chhaya</td>
<td>1460</td>
<td>140</td>
</tr>
<tr>
<td>Jeevan Anand</td>
<td>9426</td>
<td>140</td>
</tr>
<tr>
<td>Jeevan Saathi</td>
<td>1932</td>
<td>140</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>32899</strong></td>
<td><strong>980</strong></td>
</tr>
</tbody>
</table>

*Source: Secondary Data, Life Insurance Corporation of India, Perambalur-Annual Records.*

**Tools Used for Data Collection**

A structured questionnaire is used as a tool for collecting the data for the study. The questionnaire contained VI parts.

**Part I** deals with the demographic profile and awareness level of the Policyholders.

**Part II** has details relating to the major factors influencing the Policyholders in the choice of Endowment Plans. It consists of 10 items. The ANOVA and Chi Square test are applied in this segment in order to prove or disprove the hypothetical statement framed.

From Part III to Part V of the questionnaire, the respondents were asked to rate the various factors using Likert’s Rating Scale.

**Part III** contains the four dimensional factors which influences the Policyholders in the selection of policy. It consists of 35 items which were related to Product attributes, Product services, Product information and Risk coverage aspects. It helps to find out the Policyholders behavioural relationship among the various
dimensions as stated above. The respondents are asked to rate their opinion in a 5 point Likert’s Rating scale (Part III - Product attributes - from Very High to Very low and Product services, Product information, Risk coverage from Highly satisfied to Highly not satisfied) and the values are assigned according to the relevant information provided by the sample respondents.

The Confirmatory Factor Analysis is used to confirm the 35 components and Regression weights are assigned to find out the level of significance. The structural Equation Modeling (SEM) is built-in to evaluate the relationship among the four major dimensions and also to find out the entire fit indexes which were satisfactory and above the required standard fit index.

The Part IV of the questionnaire is for assessing the opinion of Policyholders in connection with the Policy lapse and Revival of policy. The respondents use the Likert’s rating scale to give their preferred values. The policy lapse and revival of policy is examined by using Factor analysis based on 10 individual statements and the reliability of the subsequent factor is tested by KMO and Barlett’s Test for internal consistency of the grouping of items. Kaiser - Meyer - Olkin measure of sampling adequacy index is 0.720, which indicates that the factor analysis was appropriate for the given data set. The High value between 0.5 and 1.0 indicates that the factor analysis was appropriate. The values below 0.5 imply that the factor analysis is not appropriate for the required data. The Factor analysis helps to reduce the factors on a whole and indicates the highest contributing factor to the study.

The Part V provides details regarding the Physical facilities existing in LIC. The questionnaire consists of 10 items and bar graph is used to show the order of importance among the 10 individual factors.
Part VI deals with the reasons to switch over from LIC to other Private Companies in India. It consists of 3 items and Henry Garrett Technique is used to evaluate the reason for switching over from LIC to other Private Companies in future.

Types of Data Used for the Research

The Secondary data as well as Main data have their importance in any research. When the main data gives first hand information, secondary data gives an idea about the research done earlier in the related topic. The Main and Secondary data was very useful to supplement any research. Hence both Main and Secondary data were used for the research study.

i) Main Data

The Research focuses on the behaviour of the Endowment Policyholders in the selected District. Hence collection of first hand information from the target group is crucial for the study. The target group selected for the study was purely the Endowment Policyholders in Perambalur district. The researcher used the field survey method to collect the main data from the sample respondents of three different Taluks of Perambalur district. For this purpose, the Researcher has collected data from the sample Respondents with the help of a well structured questionnaire.

ii) Secondary Data

The secondary data was collected from different sources like books, journals, magazines, publications, websites, libraries, Educational institutions, agent training centre, and research reports etc. The Endowment Policyholders list is collected from the past year records maintained in the Life Insurance Corporation of India, Perambalur branch, Perambalur District in order to collect data from the pertinent respondents.
Pilot Study

Questionnaire is the main tool to collect the pertinent data from the selected sample respondents. First, a pilot study is conducted among 50 sample respondents with an initial questionnaire. The Questionnaire so drafted is circulated among the employees, top executives of LIC and Respondents for the critical view with regard to wording, format, sequence and the like. The researcher identified difficulties in answering few questions by the respondents which is not precise. After the careful consideration, the questionnaire was modified by adding, deleting, reforming few questions and again retested and data collection is continued after conforming to the objectivity of the result got from modified questionnaire. In order to make it convenient, the entire questionnaire was converted into local language i.e., Tamil, which made the respondents to answer easily.

Reliability of the Tool

Reliability test was carried out using SPSS software and the reliability of the items was measured. Cronbach’s alpha is the most common form of internal consistency reliability coefficient. Alpha equals zero when the true score is not measured at all and there is only an error component. Alpha equals 1.0 when all items measure the true score and there is no error component.

<table>
<thead>
<tr>
<th>Construct</th>
<th>No. of Items</th>
<th>Alpha Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factors influencing consumer behaviour towards Endowment policy</td>
<td>10</td>
<td>.786</td>
</tr>
<tr>
<td>Product Attributes</td>
<td>10</td>
<td>.794</td>
</tr>
<tr>
<td>Product service</td>
<td>10</td>
<td>.896</td>
</tr>
<tr>
<td>Product Information</td>
<td>10</td>
<td>.884</td>
</tr>
<tr>
<td>Product Risk coverage</td>
<td>5</td>
<td>.757</td>
</tr>
<tr>
<td>Policy lapse and Revival of policy</td>
<td>10</td>
<td>.840</td>
</tr>
<tr>
<td>Physical facilities</td>
<td>10</td>
<td>.795</td>
</tr>
</tbody>
</table>
**Interpretation**

Cronbach’s alpha can be interpreted as the percentage of variance, the observed scale would explain in the hypothetical true scale composed of all possible items in the universe. Alternatively, it can be interpreted as the correlation of the observed scale with all possible other scales measuring the same thing and using the same number of items.

**Cut off Criteria**

By convention, a lenient cut-off of .60 is common in exploratory research; alpha should be the least .70 or higher to retain an item in an “adequate” scale; and many researchers require a cut-off of .80 for a “good Scale”. It can be seen that the reliability value is more than 0.7. So, the questionnaire framed under various dimensions is highly reliable.

**Validity of the tool**

Thorndike, R.L., “A measurement procedure is valid so for it correlates with some measurement of success in the job for which it is being used as a predictor”. A tool should intentionally measure what it is supposed to measure, only then it is considered to be valid. In this study, the five dimensions are scrutinized and are found to satisfy content validity and item validity.

**i) Content Validity**

Determining the validity of the test contents is indeed the most important aspect of a research endeavor. Content validity of a research tool has to be established because inferences can be made on this basis. The test items are formulated after extensive reviewing of related literature and also after due consultation with field
experts. Based on the experts’ comments and suggestions, suitable changes are made and the tool is made contently valid.

**ii) Item Validity**

Item analysis is employed and invalid items are discriminated and only valid items are retained.

**Reference Period for the Study**

The researcher used survey method to collect the main data. The target respondents are briefed about the research and mode of filling up questionnaire. The researcher made no attempt to influence or bias the opinion or feelings of the target respondents. The reference period for the study was from March 2011 to December 2011.

**Techniques adopted for Analysis**

The primary data collected from the potential respondents from different Taluks have been properly sorted, classified, edited, tabulated in a proper format and analyzed by deploying appropriate statistical tools. The researcher used Windows Excel Spreadsheet for recording and classification of 980 samples. Statistical Packages for Social Sciences (SPSS), a computer aided software package of statistical tools for deploying different basic and advanced statistical tools in the research in order to check the accuracy of procured data are used by the researcher.

The following statistical tools are used for analyzing the data procured from the respondents from different locations selected for the study.

- Simple Percentage
- Chi-square Analysis
- F Test / ANOVA
• Correspondence Table
• KMO and Bartlett’s Test - Factor analysis
• Bar graph - Normalized importance
• Confirmatory Factor Analysis / SEM
• Henry Garrett’s Ranking Method

i) Simple Percentage Analysis

Simple percentage analysis is one of the basic statistical tools which is widely used in analysis and interpretation of main data. It deals with the number of respondents’ response to a particular question in percentage arrived from the total. Simple percentages are used in the study to analyze the following factors like demographic and the behaviour of the Policyholders.

ii) Chi-square Analysis

Chi-square analysis is used in the study extensively to evaluate the association between the demographic variables and the main objective for choosing the Endowment policy. The association between independent variables namely, sex, qualification, occupation, type of family and marital status and other dependent variables like life risk cover, Marriage, Children’s future, savings, Education and tax saving are analyzed to explore any significant relationships between them.

iii) F Test – ANOVA

One-Way Analysis of Variance is a way to test the equality of three or more means at one time by using variances. The ANOVA test is used to analyze the variables like Agent motivation, Colleagues, Friends and Relatives, Advertising, Family member, Familiarity, Habit of savings, Company scheme, Image of company
and Type of family with the Age and Income variables to find any significant relationship existing between both the variables or not in the present study.

iv) Correspondence Table

The correspondence table is a main technique for representing the rows and columns of a two way contingency table in a joint plot. It produces a visual presentation of the relationship existing between the row categories and the column categories in the same space.

v) KMO and Bartlett’s Test – Factor analysis

Kaiser - Meyer - Olkin measure of sampling adequacy index was 0.720, which indicates that the factor analysis is appropriate for the given data set. The High value between 0.5 and 1.0 indicates that the factor analysis is appropriate. The values below 0.5 imply that the factor analysis is not appropriate for the required data.

The Factor analysis helps to group the items or reduce the number of items among the observed variables, in order to find out easily the major contributing factor to the study.

vi) Bar graph - Normalized importance

The bar graph is used to show the order of importance among the individual factors. It is the most commonly used device of presenting data. The bars may be drawn vertically or horizontally based on the order of importance among the dimensional factors.

vii) Confirmatory Factor Analysis / SEM

The confirmatory factor analysis is used when the researcher has an understanding of the constructs that underlie the data. It tests the specific hypothesis
regarding the nature of factors. It is performed using a number of statistical software packages like AMOS, LISREL, EQS and SAS etc. For the purpose of the present study, AMOS has been used because of its ease to use. The first step in confirmatory factor analysis is to obtain the raw data, a variance or covariance matrix, or a correlation matrix of data to be analyzed. In this study, the data are drawn from a study conducted in Perambalur district.

In AMOS, measured or observed variables are always represented by a square or rectangle while latent or synthetic variables are represented by a circle or oval. It also includes ‘e’ or measurement error for this model. The ‘e’ represents the part of the observed variable that is not explained by the factor. In AMOS, different lines signify different relationships that the researcher wishes to impose on the data i.e., from latent constructs (product attributes, services, product features and risk coverage) to the observed variables (35 items). This particular model specifies that the latent constructs is caused by the observed variables. It will fix the correlation/covariances among the measurement errors to one.

In summary, the model is valid only through the process of confirmatory factor analysis. The theory has 35 measured variables and 4 highly correlated synthetic variables.

viii) Henry Garrett’s Ranking Method

Henry Garrett Technique is used to evaluate the reason for switching over from LIC to other Private Companies in future. In this method, Policyholders are asked to rank all the variables such as High Return, Low Premium, Popularity, Maximum Risk converge and Further Growth in future. The order of merits given by the respondents is converted into ranks by using the following formula.
Percent Position = \(100(R_{ij} - 0.5)/N_j\)

By using the Garrett’s table, the percent position is converted into scores. Then in each attributes the scores of each individual are added and then mean values are calculated to rank the position.

**Fit Index**

The assessment of fit is a basic task in SEM (Structural Equation Model) modeling. The Root Mean Square Residual (RMR), Comparative Fit Index (CFI), Goodness-of-Fit Statistic (GFI), Adjusted Goodness-of-Fit Statistic (AGFI), Root Mean Square Error of Approximation (RMSEA) are used to measure the goodness of fit to the data or not.

- The fit RMR, the smaller the root mean square residual, better the model. The smaller is better. The RMR of 0 indicates the perfect fit. The RMR smaller than 0.05 indicates good fit. The fit CFI, the Comparative Fit Index, is one of the most popularly reported fit indices due to being one of the measures least affected by sample size. The criterion for a good model fit to the data of CFI is the values that exceed .90. The CFI \(\geq .95\) is presently recognized as indicative of good fit to the data.

- The fit GFI and AGFI, the Goodness of Fit Index should be equal to or greater than .90 to indicate good fit. The GFI is less than or equal to one. The value of 1 indicates a perfect fit. GFI \(\geq 0.95\) indicates good fit.

- The fit AGFI, the Adjusted Goodness of Fit Index should be at least .90, close to 1 indicates good fit. AGFI \(\geq .90\) indicates good fit.
• The fit RMSEA, the Root Mean Square Error of Approximation is a popular measure of fit. If the value is less than or equal to .05, it indicates good model fit. There is an adequate fit if RMSEA is less than or equal to .08. The RMSEA <= .06 is a cut off for a good model fit. If the value is from .08 to .10, it indicates mediocre fit, greater than .10 indicates poor fit. =0.0 indicates exact fit. The RMSEA values are classified into four categories. The close fit (.00 - .005), fair fit (.05 - .08). Mediocre fit (.08 - .10) and poor fit (over .10).

Conclusion

In this chapter, the investigator explained about the various methods and procedures followed in the present study. The next chapter deals with the analysis and interpretation of the collected data.