Chapter 3

RESEARCH METHODOLOGY

A systematic process and methodology is needed to conduct a research in a successful manner. This section highlights the methodology and process used to conduct the present research. This section highlights the objectives and procedure of the study. Further, this section discusses the research methodology adopted for attaining the objectives of the study. Properly conducted research reduces the uncertainty level for the top management in making critical decisions. Hence it is extremely important to describe the research methodology here.

3.1: Justification of the Present Study

The present study “Challenges and Opportunities in Life Insurance Sector of India (A comparative study of public and private sector)”, includes impact of privatisation on public sector. Many attempts have been made to explore this area, but no systematic research has been specifically conducted on “Challenges and Opportunities in Life Insurance Sector of India (A comparative study of public and private sector)” due to non availability of sufficient data, this field has remain untouched by the researchers. Hence, there is need and justification for comprehensive study to evaluate it. The present study aims to bridge such a gap and hence the present study has been taken up.

3.2: Objectives of the Study

The overall objective is to evaluate the “Challenges and Opportunities in Life Insurance Sector of India (A comparative study of public and private sector)”. To achieve overall objective various sub-objectives have been established, these are:

- To compare the business earned by the LIC of India and the private life insurance companies.

- To compare & study the trend after introduction of private life Insurance companies on LIC of India.
➢ To compare the business earned amongst the private insurers.

➢ To investigate the consumer behavior towards life insurance in the state of Haryana

➢ To investigate and compare the satisfaction of intermediaries of public and private insurance sector in the state of Haryana

➢ To determine and investigate which of private insurance companies has gained more popularity among the rural and urban respondent in the state of Haryana

➢ To offer suggestions and recommendations for improvement in private and public life insurance sector.

In modern times, management research has reached a stage of development where the traditional methods and techniques require synthesis and extension. Now, research has become a more complex, cost incurring and time consuming activity. Therefore, a systematic process and methodology was needed to conduct the research in a successful manner. Research methodology is the systematic method/process dealing with enunciation of identifying a problem, collection of facts or data, analyzing these data and reaching a certain conclusion either in the form of solutions towards the problem concerned or certain generalizations for some theoretical formulation (Hasouneh, 2003). It also comprises of a number of alternative approaches and interrelated and frequently overlapping procedures and practices. Since there were many aspect of research methodology, the line of action had to be chosen from a variety of alternatives. The decision of a suitable method can be arrived at through the assessment of objectives and comparison of various alternatives. Research methodology used in the present study is as under:

3.3: Research Type
Type of research is based on the nature of data. In the light of the nature of data, the present research is mainly of a quantitative nature, as most of the findings of the
present study are based on quantified measures. However, the researcher also manipulated the casualty and consequences, which also represented a sign of qualitative research. In the light of purpose of research, the present study was mainly of applied nature as the researcher tried to test the impact of private life insurance companies on public sector life insurance i.e. life insurance corporation of India. Further, the survey method was adopted by selecting and studying a sample chosen from the population (Life Insurance companies providing services to their policyholders, channel partners and employees etc.) to discover the relevant incidence, distribution and interrelation of variables.

3.4: Research Design
Reliability and validity of the research required planning of inquiry, i.e. the detailed strategy of how the research would be conducted. A good research design depends on two aspects of its designing: first, specifying what one wants to find out, i.e., properly posing the problem or properly phrasing the issues to be studied or the logical structure of inquiry; and second, determining how to do it, i.e., collecting data through scientific and appropriate methods, using effective techniques of data analysis and rational and meaningful deductions (Ahuja, 2001). Therefore, the researcher had to take great care in the preparation of the research design (Thanulingom, 2003). There are many types of research design and there was no standard or ideal research design to guide the researcher; much different research design may accomplish the same objectives. Broadly, research design can be of three types: (1) Exploratory (2) Descriptive and (3) Casual/Experimental.

In the present study, mainly exploratory research design had been adopted, as the main purpose of this study was to make comparative study of private and public sector life insurance companies in India and to achieve new insights into it. Since the scope of the study was very vast, the present study also represented some characteristics of descriptive research design.

3.5: Sample Design
In most if the cases of research studies, it becomes almost impossible to examine the entire universe; the only alternative thus, was to resort to sampling. The present study is also of the same nature. According to Manheim (1977), “a sample is a part of the
population which is studied in order to make inferences about the whole population”. Thus, a good sample would be a miniature version of the population, which would involve the following:

- Sample Unit (Unit of Analysis)
- Sample Techniques and
- Sample Size

### 3.5.1: Sample Unit

The sample unit is the individual, group, or other entity that is selected for the survey. This is also known as the unit of analysis when the survey data are examined statistically (Fink, 1995). Since the major objectives of the present study was to make comparative study of private and public sector life insurance companies in India, to compare the business earned by the LIC of India and the private life insurance companies, eight life insurance companies of India (Life Insurance Corporation of India, ICICI Prudential Life Insurance Company, HDFC Life Insurance Company, Bajaj Allianz Life Insurance Company, SBI Life Insurance Company, Reliance Life Insurance Company, Birla SunLife Life Insurance Company and Kotak Life Insurance Company) had been considered as sample unit. The life insurance companies of India selected above as sample units for this study on the basis of their respective market shares, to compare and study the trend after introduction of private life Insurance companies on LIC of India, the premium underwritten by the two segment i.e. public sector and private sector is taken, to compare the business earned amongst the private insurers, all twenty two life insurance companies of private sector ( ICICI Life Insurance Company, Bajaj Allianz Life Insurance Company, SBI Life Insurance Company, HDFC Standard Life Insurance Company, Birla Sunlife Life Insurance Company, Reliance Life Insurance Company, Max New York Life Insurance Company, Tata AIG Life Insurance Company, Aviva Life Insurance Company, Kotak Life Insurance Company, Metlife Insurance Company, ING Vysya Life Insurance Company, Canara HSBC Life Insurance Company, Shriram Life Insurance Company, IDBI Federal Life Insurance Company, Star Union Dai-ichi Life Insurance Company, Bharti AXA Life Insurance Company, Future Generali Life Insurance Company, India First Life Insurance Company, Sahara Life Insurance Company, DLF Pramerica Life Insurance Company and Aegon Religare Life Insurance Company) had been considered as sample unit. One of the major purposes of the present study was to find out the policyholders
behaviour and preference towards different life insurance companies in India in the state of Haryana; therefore, policyholders of selected life insurance companies was also considered as sample unit. The Haryana state is divided into four commissioned viz. Ambala, Hisar, Rohtak and Gurgaon. Respondents belongs to these districts and nearby villages were contacted for the study of behavior and preference towards life insurance sector in India, to examine which of private insurance companies has gained more popularity among the rural and urban respondent, ten private life insurance companies of India (ICICI Prudential Life Insurance Company, HDFC Life Insurance Company, Bajaj Allianz Life Insurance Company, SBI Life Insurance Company, Reliance Life Insurance Company, Birla SunLife Life Insurance Company, Kotak Life Insurance Company, Tata AIG Life Insurance Company, Max New Life Insurance Company and Future Generali Life Insurance Company) had been considered as sample unit, to analyse the satisfaction among intermediaries (advisors, assistant sales manager, sales managers etc.), related to the factors that motivates the employees to excel, eight life insurance companies of India (Life Insurance Corporation of India, ICICI Prudential Life Insurance Company, HDFC Life Insurance Company, Bajaj Allianz Life Insurance Company, SBI Life Insurance Company, Reliance Life Insurance Company, Birla SunLife Life Insurance Company and Kotak Life Insurance Company) had been considered as sample unit. The life insurance companies of India selected above as sample units for this study again on the basis of their respective market shares and their popularity among the people in the state of Haryana.

3.5.2: Sampling Techniques:
The procedure that a researcher adopts in selecting the unit for the sample is known as sampling technique. There are mainly two types of sampling, the first type of sampling is known as Probability Sampling and the second type of sampling is known as Non Probability Sampling. In Probability Sampling each sample has a known probability of being included in the sample, but Non-Probability Sampling does not allow the researcher to determine this probability. Such samples are chosen based on judgment regarding the characteristics of the target population and the needs of the survey.
In the present study, Non-Probability sampling technique was used. The selection of the units was made on the basis of non-probability sampling technique, viz, ‘QUOTA’ sampling. The data was obtained from the various respondents within the organizations (Customer Support Executives, advisors, assistant sales manager, sales managers etc). Officials of the selected life insurance companies of India) and from outside the organizations (Policy holders of the selected life insurance companies of India) also, through appropriate questionnaires and schedules. In the present study the researcher approached only those prospective respondents (policyholders) who have to previous experience related to services offered by selected Life Insurance Companies. The researcher approached prospective respondents (policyholders) in branches and divisional offices of selected life insurance companies in selected cities. This method proved very beneficial, as it was really difficult and in fact impractical to compile an exhaustive list of the respondents (policyholders) from the entire population.

3.5.3: Sample Size:

Sample size means the number of sampling units selected from the population for the purpose of investigation. No doubt, sample size must be sufficiently large so that we can have a representative sample. But, money and time constraints tend to limit the size of sample. The population addressed under the present study consists of life insurance sector of India. The sample unit included Eleven leading Life insurance companies (based upon market share) viz, Life Insurance Corporation of India, (ICICI Prudential Life Insurance Company, HDFC Life Insurance Company, Bajaj Allianz Life Insurance Company, SBI Life Insurance Company, Reliance Life Insurance Company, Birla SunLife Life Insurance Company, Kotak Life Insurance Company, Tata AIG Life Insurance Company, Max New Life Insurance Company and Future Generali Life Insurance Company, which a large number of policyholders and offices located in Haryana and Delhi were chosen.

To achieve research objectives of present study, information was collected from two types of respondents. One, the internal respondents targeted was from the middle management and lower management. Total 500 persons (customer care executives, advisors, assistant sales manager, sales managers etc.) were contacted for the purpose. Second, the external respondents targeted were those policyholders of selected life
insurance companies, who had taken life insurance policies offered by different Life Insurance companies. 300 external respondents were selected from the state of Haryana. Exhibit No. 3.1 and Exhibit No. 3.2 indicates the details of both types of samples of respondents.

### Table 3.1 Sample from Internal Respondents (Employees)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Insurance Company</th>
<th>Sample Quota</th>
<th>Per cent of Sample Quota</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Life Insurance Corporation of India</td>
<td>185</td>
<td>37</td>
</tr>
<tr>
<td>2</td>
<td>ICICI Prudential Life Insurance Company</td>
<td>45</td>
<td>9</td>
</tr>
<tr>
<td>3</td>
<td>Bajaj Allianz Life Insurance Company</td>
<td>45</td>
<td>9</td>
</tr>
<tr>
<td>4</td>
<td>Birla SunLife Life Insurance Company</td>
<td>45</td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td>Tata AIG Life Insurance Company</td>
<td>45</td>
<td>9</td>
</tr>
<tr>
<td>6</td>
<td>HDFC Life Insurance Company</td>
<td>45</td>
<td>9</td>
</tr>
<tr>
<td>7</td>
<td>SBI Life Insurance Company</td>
<td>45</td>
<td>9</td>
</tr>
<tr>
<td>8</td>
<td>Kotak Life Insurance Company</td>
<td>45</td>
<td>9</td>
</tr>
</tbody>
</table>

### Table 3.2 Sample from External Respondents (Policyholders)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Insurance Company</th>
<th>Sample Quota</th>
<th>Per cent of Sample Quota</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PUBLIC SECTOR</td>
<td>200</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td>Life Insurance Corporation of India</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>PRIVATE SECTOR</td>
<td>100</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>Private Life Insurance Companies</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Five conditions were established to permit collection of the most representative samples:

1) Customers should be allowed to rate and review about the various services of life insurance companies based on their own service experience;

2) Customers should not be financially, socially, and emotionally motivated to express their opinions favoring the reviewed insurance companies;

3) Customers should be encouraged to post both dissatisfied and satisfied reviews.
4) The results of market survey are accurate. The validity of the model is based around the results of empirical studies.
5) Policyholders responses can be documented and captured and they remain stable during the whole process.

3.6 Data Collection

In research process, the result will be good if the data put in is good. If poor and unrelated data are collected, naturally poor and misleading conclusion will be drawn. Therefore, due consideration should be given to the type and method of data collection (Wilkinson and Bhandarkar, 2000). There are two types of data: primary data and secondary data. Since the scope of the study was really very vast, both types of data have been collected.

Primary data was collected through the well-structured comprehensive questionnaire. Sets of two questionnaires were prepared which have been given in Annexure 8.1 and 9.1.

- Annexure 8.1: Questionnaire for customer care executives, advisors, assistant sales manager, sales managers etc., of the selected life insurance companies of India.
- Annexure 9.1: Questionnaire for the Policyholders of selected life insurance companies of India.

Well-structured questionnaires were prepared for the purpose of collecting the necessary information. The questionnaires were prepared in the two phases. In the first phase, unstructured in-depth interviews were conducted to create initial questionnaire. Further, expert opinions on the questionnaires were collected supported by extensive literature review of similar studies carried out in various countries of the world and improvements were made to the questionnaires. This necessitated some changes in the final version of the questionnaire. In the second phase, a pilot survey was also conducted with 4 life insurance companies (Life Insurance Corporation of India, SBI Life Insurance Company, ICICI Prudential Life Insurance Company and Bajaj Allianz Life Insurance company) and 50 customers to evaluate how well the questionnaire was understood, and also to test alternative wordings of questions,
alternative response options and determining whether some other response should be provided. During the interview process, some weaknesses in the design were also found. Some of the respondents had reservations about some questions in the initial questionnaire, due to the sensitive nature of topic addressed. In various questions, internal respondents were asked to rate (highly satisfied to highly dissatisfied) the various reasons behind the factors affecting customer retention process and also factors that motivates intermediaries to provide excellent services for customer satisfaction, rather than asking only one reason. The survey also helped the researcher in rewording and restructuring the questionnaire. The validation of the questionnaires was done by the feedback from the academicians, practitioners and by the issues identified by relevant literature. Finally, the structured questionnaires were prepared and the survey was conducted by explaining the purpose of the research to the respondents.

The content of the first questionnaire (for intermediaries) included the company profile; some strategic questions like commission/salary, working environment, promotional avenues in the organisation etc. were asked to rate (highly satisfied to highly dissatisfied) in the questionnaire. The second part of the first questionnaire (for intermediaries) included statements related to factors affecting the satisfaction level of the intermediaries. These statements were included after extensive literature review of the similar studies. According to Jillian Dawes Farquhar (1994), study findings financial service retailers were aiming to retain customers through building relationships but lack of management appreciation for staff expertise and the burden for service quality and retention appears to fall upon staff. The study also finds that the staff appeared to view themselves as key players in retaining customers and, since information systems and structure appear not to provide the required support, there are grounds for this view. Dennis J. Adsit Rath & strong Inc., and Steven Crom and Dana Jones Rath & Strong, Inc., (1996) study found positive relationships between employee attitudes, departmental performance and customer satisfaction with service quality. Krosnick and Petty (1995) found strong evidence for effect of attitude strength on behaviour and the fact that behavioural intentions leads towards satisfaction. Krosnick and Petty also referred to the strong impact of attitude strength on behaviour and the processing of information.
Reichheld and Sasser (1990), found that Customer Retention requires a positive climate in which everyone in the organization works towards keeping customers. According to Bowen and Lawler (1995), study if staffs were given more power, greater access to information and adequate knowledge, they would be in a better position to recover situations or delight customers. Internal marketing supports the creation of a positive climate of cooperation where everyone in the organization was working towards keeping customers (Reichheld and Sasser, 1990). Segments focused HRM policies, practices and procedures activated employee’s energies and provided direction and, activation and direction were the keys to the motivation of employee’s (Locke and Latham, 1990). This focusing of employees was recognized as “culture” and others have called it “climate” (Schneider, 1990). Steve Macaulary and Sarah Cook (1995) concluded that teamwork is a term most people pay more lip-service to than practice. Deanne N. Den Hartog and Robert M. Verburg (2002) study provided more insight into the relationship between perceived leader behaviour and employees’ willingness to provide excellent service as well as their perceptions of service quality. Supervisors’ supportive behaviours, providing useful information, giving feedback, fair evaluations of performance and their direct stimulation of service related behaviours were all found to be positively related to service outcomes. Neeru Malhotra and Avinandan Mukherjee (2004) study indicated that job satisfaction and organizational commitment of employees had a significant impact on service quality delivered. Avinandan Mukherjee and Neeru Malhotra (2006) research revealed that role clarity plays a critical role in explaining employee perceptions of service quality. Yong-Ki Lee, Jung- Heon Nam, Dae-Hwan, and Kyung Ah Lee (2006) analysed the structural relationship between empowerment, service training, service reward, job attitudes such as job satisfaction and organizational commitment, and customer-oriented prosocial behavior of employees. Respondents of the first questionnaire (for employees) and asked to rate (highly satisfied to highly dissatisfied) these statements.

Based on above discussion the researcher had used these key dimensions and their respective service features to develop survey questionnaire for policyholders to assess the perceived level of consumer services provided by selected life insurance companies of India.
The policyholder’s questionnaire included expectations regarding different dimensions (Reliability, Responsiveness, Competence, Easy to use, Product Portfolio, Security and Convenience) of customer services offered to policyholders by the concerned life insurance company. This questionnaire also included perceptions regarding different dimensions (Reliability, Responsiveness, Competence, Easy to use, Product Portfolio, Security and Convenience) of consumer services provided to policyholders by the concerned life insurance company. The same questionnaire included questions regarding importance weight related to different dimensions (Reliability, Responsiveness, Competence, Easy to use, Product Portfolio, Security and Convenience) of consumer services offered by the selected life insurance company of India.

The questionnaires mentioned above, contain several type of questions keeping in view the objectives of the present study. Easily understandable and answerable questions were prepared and were carried to the respondents to be filled up by the. In all the cases, personal interviews are conducted by the researcher to secure correct and collect necessary information.

The present study analysis was also based on the secondary data, which were collected from various international and national journals of repute, annual reports of various Government institutions of India like IRDA, RBI etc., text books, magazines of repute, annual reports of selected life insurance companies, annual reports of various financial institutions and commercial and social associations like CII, FICCI, Gartner, Oxford’s Economic survey etc. For this purpose researcher explored many libraries (CII, ICSAR, FICCI, American Cultural and British Library, and also of various universities). Online libraries, Internet and online database were highly used for the purpose of data collection. Some important information was also complied from the different international and national newspapers.

3.7 Frequency Distribution Tables of Questionnaire-1 (Employees)
Table 3.3: Survey Response Rate

<table>
<thead>
<tr>
<th>Total Sample Size</th>
<th>Response Received</th>
<th>Usable Response Received</th>
<th>Response Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
<td>350</td>
<td>314</td>
<td>62.8</td>
</tr>
</tbody>
</table>
Table 3.4: Insurance Company wise response rate

<table>
<thead>
<tr>
<th>Name of Insurance Company</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life Insurance Company of India</td>
<td>104</td>
<td>33.13</td>
<td>33.13</td>
</tr>
<tr>
<td>ICICI Prudential Life Insurance Company</td>
<td>30</td>
<td>9.554</td>
<td>42.684</td>
</tr>
<tr>
<td>HDFC Standard Life Insurance Company</td>
<td>30</td>
<td>9.554</td>
<td>52.238</td>
</tr>
<tr>
<td>Bajaj Allianz Life Insurance Company</td>
<td>30</td>
<td>9.554</td>
<td>61.792</td>
</tr>
<tr>
<td>RELIANCE Life Insurance Company</td>
<td>30</td>
<td>9.554</td>
<td>71.346</td>
</tr>
<tr>
<td>Birla Sunlife Life Insurance Company</td>
<td>30</td>
<td>9.554</td>
<td>80.9</td>
</tr>
<tr>
<td>SBI Life Insurance Company</td>
<td>30</td>
<td>9.554</td>
<td>90.454</td>
</tr>
<tr>
<td>KOTAK LIFE Insurance Company</td>
<td>30</td>
<td>9.554</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>314</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

However 350 respondents gave the information as per our requirement. Later on the information given by 36 (10.29%) respondents was not found satisfactory. Hence finally information given by 314 (89.71%) respondents was taken into study according to the requirement of the objective. Out of 314 persons in total 104 (33.13%) belongs to LIC and 30 (9.554%) each belongs to ICICI, HDFC, Bajaj Allianz, Reliance, Birla Sunlife, SBI and Kotak Life Insurance Company.

3.8 Frequency Distribution Tables of Questionnaire-2 (Policyholders)

Table 3.5: Survey Response Rate

<table>
<thead>
<tr>
<th>Total Sample Size</th>
<th>Response Received</th>
<th>Usable Response Received</th>
<th>Response Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>154</td>
<td>121</td>
<td>40.33</td>
</tr>
</tbody>
</table>

Table 3.6: Insurance Companies wise Response Rate

<table>
<thead>
<tr>
<th>Name of Insurance Company</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Sector</td>
<td>96</td>
<td>79.34</td>
<td>79.34</td>
</tr>
<tr>
<td>Life Insurance Corporation of India</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private Sector</td>
<td>25</td>
<td>20.66</td>
<td>100</td>
</tr>
<tr>
<td>Private Life Insurance Companies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>121</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>
Table 3.7: Gender of the Policyholders

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>81</td>
<td>66.94</td>
<td>66.94</td>
</tr>
<tr>
<td>Female</td>
<td>40</td>
<td>33.06</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>121</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.8: Age Group of Policyholders

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;25 yrs</td>
<td>16</td>
<td>24.5</td>
<td>24.5</td>
</tr>
<tr>
<td>25-45 yrs</td>
<td>74</td>
<td>46.5</td>
<td>71</td>
</tr>
<tr>
<td>&gt;45 yrs</td>
<td>31</td>
<td>29</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>121</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.9: Profession of Policyholders

<table>
<thead>
<tr>
<th>Nature of Profession</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business</td>
<td>15</td>
<td>12.4</td>
<td>12.4</td>
</tr>
<tr>
<td>Service</td>
<td>56</td>
<td>46.3</td>
<td>58.7</td>
</tr>
<tr>
<td>Professional</td>
<td>11</td>
<td>9.1</td>
<td>67.8</td>
</tr>
<tr>
<td>Farmers/Others</td>
<td>39</td>
<td>32.2</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>121</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.10: Monthly Income of Policyholders

<table>
<thead>
<tr>
<th>Income Group</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;15000 p.m.</td>
<td>24</td>
<td>19.8</td>
<td>19.8</td>
</tr>
<tr>
<td>15000-25000 p.m.</td>
<td>70</td>
<td>57.9</td>
<td>77.7</td>
</tr>
<tr>
<td>25001-50000 p.m.</td>
<td>20</td>
<td>16.5</td>
<td>94.2</td>
</tr>
<tr>
<td>&gt;50000 p.m.</td>
<td>7</td>
<td>5.8</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>121</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Residential Status</td>
<td>Frequency</td>
<td>Percent</td>
<td>Cumulative Percent</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------</td>
<td>---------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Urban</td>
<td>60</td>
<td>49.6</td>
<td>49.6</td>
</tr>
<tr>
<td>Rural</td>
<td>61</td>
<td>50.4</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>121</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.12: Qualification of Policyholders

<table>
<thead>
<tr>
<th>Qualification</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under Graduate</td>
<td>40</td>
<td>33.1</td>
<td>33.1</td>
</tr>
<tr>
<td>Graduate</td>
<td>46</td>
<td>38.0</td>
<td>71.1</td>
</tr>
<tr>
<td>Post Graduate</td>
<td>35</td>
<td>28.9</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>121</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Out of 154 responses received, 121 (78.36%) were usable responses and of which 81 (66.94%) were males and 40 (33.06%) were females; 96 (79.34%) were policy holders of LIC, 25 (20.66%) were policy holders of ; 74(46.5%) surveyed policy holders belong to 25-45 yrs, 31 (29.0%) belong to >45 yrs, and 16 (24.5%) belong to <25 yrs age group; 56(46.3%) of the surveyed policy holders belong to service class, 15(12.4%) were businessman’s, 11(9.1%) were professionals and 39(32.2%) were farmers/others; 70 (57.9%) surveyed policy holders 24(19.8%) belong to <15000 household income, belong to 15000-25000 household income, 20 (16.5%) belong to 25001-50000 household income, and 7(5.8%) belong to >50001 household income group; 60(49.6%) of surveyed policy holder were residents of urban area, 61(50.4%) were residents of rural area; 40 (33.1%) surveyed policy holders were under graduates, 46 (38%) were graduates and 35 (28.9%) were post graduates.

3.9 Data Processing and Analysis

The task of data collection would be complete when all entries (or almost all) would be filled with the appropriate responses or values (Galtung, 1967). After the data had been collected the researcher turns to the task of data processing and further analyzing these data. “Data Processing and analysis”, the task was to take the completed data matrix, which is amenable to processing, and do two things with, in this order: (1)
Processing: to recast the matrix, concentrate and otherwise deal with it so that the data would be as amenable to analysis as possible and (2) Analysis: to see the data in the light of the objectives and theories, and draw conclusion that would be amenable to the theory formation as possible (Galton, 1967).

In the present study, responses from respondents were coded and tabulated in SPSS 11.0 and Microsoft excel-2003 statistical and analytical packages. The process was used for the each type of the questionnaires. The responses of respondents were given in all the tables in the term of both the frequency, percentages and cumulative.

For analyzing the data, both simple and advanced statistical tools were used. In some cases simple statistics like average, percentage, weighted average and mean score were applied. Exploratory research required some advanced tools; therefore to find out and analyse the results of the study statistical tests like Variate Difference Method, Comparative Mean, Standard Deviation, Chi Square test, Independent t-test, Paired t-test and ANOVA analysis etc were used. The test was conducted at 95 percent confidence level (or 5 per cent level of significance).

3.10 Statistical Tools Used
To facilitate the analysis in a meaningful way, certain statistical tools were found to be useful; most prominent of these have already been named above. A brief description of these tools is provided below:

3.10.1 Variate Difference Method
Variate Difference Method is an important tool of “Time Series Analysis” given by O. Anderson and enables us to estimate the variance of the random component of the series. The variate difference method essentially consists of the following steps:
1. First the difference table is prepared for the original series as shown:

<table>
<thead>
<tr>
<th>Time (t)</th>
<th>Premium</th>
<th>$U_t$</th>
<th>$\Delta U_t$</th>
<th>$(\Delta U_t)^2$…</th>
</tr>
</thead>
</table>

Where $U_t = \text{Actual Premium/log value of actual premium}$
$\Delta U_t = \text{Deviation from } U_t$
$(\Delta U_t)^2 = \text{Square of } \Delta U_t$
2. Then values for $V_1 = \mu_2'(\Delta U_t)$, $V_2 = \mu_2'(\Delta^2 U_t)$, $V_3 = \mu_2'(\Delta^3 U_t)$ … are calculated till $V_i$ and $V_{i+1}, i = 1, 2, 3…$ do not differ significantly, i.e. if $V_1$ and $V_2$ do not differ significantly then either of them is regarded as an estimate of variance $\sigma^2$. If they differ significantly then we calculate $V_3$. If $V_2$ and $V_3$ do not differ significantly than any of them can be taken as an estimate of variance $\sigma^2$ otherwise $V_4$ is calculated and the same process is repeated till two successive estimates are homogeneous.

3. The significance of difference between two successive estimates is then tested obtaining the following test statistic:

$$R_k = \frac{V_k - V_{k+1}}{V_k}$$

If magnitude of $R_k > 1.96$, the difference is interpreted as significant at 5% level of significance otherwise non significant.

If $V_1 = V_2$ then degree of polynomial which is best fitted to the data may be taken as 1 i.e. the straight line is best fitted to the given data. Similarly, if $V_2 = V_3$ than the curve of second degree will be the best fitted to the given data and so on.

The above procedure is applied simultaneously for log $U_t$ in place of $U_t$. First it is tested as to whether $V_1 = V_2$ in case of the original values and also this is tested for the values of log $U_t$. If no significant difference is found then exponential curve of the form $y = ab^x$ is fitted to the given data. If no significant difference is found in both the cases i.e. in case of $U_t$ and log $U_t$ values, then the case where magnitude of $R_k$ is lesser is taken and accordingly that curve is taken as best fitted to the given data.

### 3.10.2 Trend Line by Method of Least Square

Method of least square is the best method of measuring trend. This method can be fitted to economic and business time series to make future predictions.

**Linear Trend:**

Linear trend is represented by:

$$Y = a + bX$$

where
Y = trend value
X = t − A; t denote the given years and A is assumed mean taken in such a way that \( \Sigma X = 0 \)
a = a constant that represents value of Y variable when X = 0
b = a constant that represents slope of trend line. This discloses the change in value of Y variable when there is a unit change in X.
The trend line drawn with the help of linear equation: \( Y = a + bX \), is called as line of best fit.
The values of a and b are obtained using the following two normal equations:
\[
\Sigma Y = na + b\Sigma X \\
\Sigma XY = a\Sigma X + b\Sigma X^2
\]
where n is the number of observations.
This implies that
\[
a = \frac{\Sigma Y}{n}, \quad b = \frac{\Sigma XY}{\Sigma X^2} \quad (\because \Sigma X = 0)
\]
Values of a and b so obtained can be substituted in \( Y = a + bX \) to get the trend line.

**Exponential Trend:**
If the time series is increasing or decreasing by a constant percentage rather than constant absolute amount, the fitting of exponential trend is considered appropriate. Such tendency is found in many business data.
Exponential trend is represented by:
\( Y = ab^X \)
Where a is Y –intercept and b the slope of the curve at the origin of X
In the logarithmic form, the above equation is written as under:
\[
\log Y = \log a + X\log b
\]
When plotted on a semi-logarithmic graph, the curve gives a straight line (or called logarithmic straight line). However, on an arithmetic scale chart, the curve gives a non linear trend.
Under the method of least square, the values of the constants a and b are obtained by solving following two normal equations:
\[
\Sigma \log Y = \log a + \log b \\
\Sigma(X \log Y) = \log a\Sigma X + \log b\Sigma X^2
\]
Values of a and b so obtained can be substituted in \( Y = ab^X \) to get the trend line.
Remark: While making the calculations taking logarithms the base has been taken as 10
3.10.3 t-Test

In the present study, t-test has been used for testing

(i) if the sample mean ( \( \bar{x} \) ) differs significantly from the hypothetical value \( \mu_0 \) of the population mean

(ii) the significance of the difference between two sample means

**t-Test for Single Mean**

Suppose we want to test if the sample means differ significantly from hypothetical value \( \mu_0 \) of the population mean.

The null hypothesis, therefore, is \( H_0 : \mu = \mu_0 \)

The test statistic under null hypothesis is given by

\[
t = \frac{\bar{x} - \mu_0}{S.E.} = \frac{\bar{x} - \mu}{S/\sqrt{n}}
\]

It follows student’s t-distribution with \( n - 1 \) d.f.

where

\[
\bar{x} = \frac{1}{n} \sum_{i=1}^{n} x_i, \quad S^2 = \frac{1}{n-1} \sum_{i=1}^{n} (x_i - \bar{x})^2
\]

(\( x_1, x_2, \ldots, x_n \) is a random sample of size \( n \))

Calculated value of \( t \) is compared with the tabulated value of \( t \) at certain level of significance. If calculated \( |t| > \) tabulated \( t \), the null hypothesis is rejected and if calculated \( |t| < \) tabulated \( t \), \( H_0 \) may be accepted at the level of significance adopted.

**t-Test for Difference of Means**

Suppose we want to test if the means of two independent sample (\( x_1, x_2, \ldots, x_{n_1} \) ) and (\( y_1, y_2, \ldots, y_{n_2} \) ) of sizes \( n_1 \) and \( n_2 \) are equal:

The null hypothesis is

\( H_0 = \mu_1 = \mu_2 \)

where \( \mu_1 \) and \( \mu_2 \) are respective population means. The test statistic under null hypothesis is given by

\[
t = \frac{\bar{x} - \bar{y}}{S.E.} = \frac{\bar{x} - \bar{y}}{S \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}
\]

where
It follows student’s t-distribution with $n_1 + n_2 - 2$ d.f.

### 3.10.4 Paired t-Test for Difference of Means

This test is applied when the

(i) sample sizes are equal, and

(ii) the two samples are not independent but the sample observations are paired together, i.e., the pair of observations $(x_1, y_1), (x_2, y_2), \ldots, (x_n, y_n)$ corresponds to the same sample unit. The problem is to test if the sample means differ significantly or not. Let $d_i = x_i - y_i, \ i = 1, 2, \ldots, n$.

The null hypothesis is

$$H_0 : \mu_1 = \mu_2$$

where $\mu_1$ and $\mu_2$ are respective population means.

The test statistic under null hypothesis is given by

$$t = \frac{\bar{d}}{S/\sqrt{n}}$$

where

$$\bar{d} = \frac{1}{n} \sum_{i=1}^{n} d_i, \quad S^2 = \frac{1}{n-1} \sum_{i=1}^{n} (d_i - \bar{d})^2$$

It follows student’s t-distribution with $(n - 1)$ d.f.

**Note:** One-tailed test has been applied for single mean and two-tailed test has been applied for difference of means. A test for any statistical hypothesis where the alternative hypothesis is one tailed (two-tailed) is called one-tailed (two-tailed) test. For example, a test for testing the mean of a population $H_0 : \mu = \mu_0$ against the alternative hypothesis $H_1 : \mu > \mu_0$ (right tailed) or $H_1 : \mu < \mu_0$ (left tailed) is a single tailed test; and against the alternative hypothesis $H_1 : \mu \neq \mu_0$ is known as two-tailed test.

The tabulated values of $t$ used in the present study can be seen from the following table:
### Level of significance

<table>
<thead>
<tr>
<th></th>
<th>1%</th>
<th>2%</th>
<th>5%</th>
<th>10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>d.f. = 8</td>
<td>3.36</td>
<td>2.92</td>
<td>2.90</td>
<td>2.58</td>
</tr>
<tr>
<td>d.f. = 16</td>
<td>2.90</td>
<td>2.58</td>
<td>2.31</td>
<td>2.12</td>
</tr>
<tr>
<td>d.f. = 16</td>
<td>1.86</td>
<td>1.75</td>
<td>1.75</td>
<td>1.40</td>
</tr>
<tr>
<td>Two-tailed test</td>
<td>3.36</td>
<td>2.92</td>
<td>2.90</td>
<td>2.58</td>
</tr>
<tr>
<td>One-tailed test</td>
<td>2.90</td>
<td>2.58</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

### 3.8.5 Analysis of Variance (ANOVA)

Analysis of variance is an elegant and versatile technique. It is being widely used in determining whether or not the means of more than two samples are equal. Basically it is a procedure by which the variation is analysed into its various components corresponding to the various sources of variation. Thus analysis of variance is a method of splitting the variance for analytical purposes for testing the difference between different groups of data for homogeneity. This technique in short is referred to as ANOVA and enables us to make inferences about whether samples are drawn from populations having same means.

**Anova Table for One-Way Classified Data**

<table>
<thead>
<tr>
<th>Sources of Variation</th>
<th>Sum of Squares (S.S)</th>
<th>d.f.</th>
<th>Mean Sum of Squares (MS)</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>SST</td>
<td>k-1</td>
<td>MST = ( \frac{SST}{k-1} )</td>
<td>F = MST/MSE</td>
</tr>
<tr>
<td>Error</td>
<td>SSE</td>
<td>n-k</td>
<td>MSE = ( \frac{SSE}{n-k} )</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>TSS</td>
<td>n-1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

where \( n \) is the total number of observations and \( k \) is the number of treatments. \( F \) is F-statistic used for testing whether the means of different treatments are equal. It follows Snedecor’s F-distribution with \((k \,-1, n-k)\) d.f. Calculated value of \( F \) is compared with tabulated value of \( F \) at certain level of significance. If calculated value of \( F > \) tabulated value of \( F \), we reject the null hypothesis that mean treatment effects are equal, otherwise we accept the hypothesis.

Steps for calculating various sums of squares are as follows:

1. First of all grand total (G) of all the observations is obtained.
2. Correction Factor (C.F.) = \( \frac{G^2}{n} \)

2. Raw sum of squares = Sum of squares of all the observations.

3. TSS = Raw sum of squares - C.F.

4. SST = \( \sum \left( \frac{T_i}{n_i} \right)^2 - C.F. \)

where \( T_i = \) sum of observations of ith treatment

\( n_i = \) number of observations of ith treatment.

5. SSE = TSS - SST

The study had also applied SERVQUAL (Berry, Parasuraman, Zeithaml, 1985) model with few modification supported by various studies, to assess the satisfaction of intermediaries of selected life insurance companies. A five point Likert scale was used to measure the intensity of the attitude of customers and officials of selected insurance companies, towards the selected dimensions of consumer services. The respondents were asked to rate the variables, using five point Likert scale, which ranged from highly satisfied (1) to highly dissatisfied (5). The weighted average scores were also calculated at the appropriate places where the respondents were asked to rank/rate different statements, either according to degree of their importance or according to the extent they agree with the statement as the case may be.

3.10.6 Chi-Square test

The Chi-square test (\( \chi^2 \)-test) is an important test amongst several tests of significance developed by the statisticians. Chi-Square, symbolically written as \( \chi^2 \) (pronounced as Ki-square), is a statistical measure used in the context of sampling analysis for testing the significance of a population variance. As a non-parametric test, it can be used as a test of goodness of fit and as a test of independence of attributes. Chi-Square test is applicable to a very large number of problems in practice and as a non-parametric test, it is described as follows:

\( \chi^2 \)-test as a non-parametric test

\( \chi^2 \)-test is an important non-parametric test and as such no rigid assumptions are necessary in respect of the type of population. We require only the degrees of freedom.
for using this test. As a non-parametric test $\chi^2$-test can be used (i) as a test of goodness of fit and (ii) as a test independence of attributes.

(i) $\chi^2$-test as a test of goodness of fit

$\chi^2$-test is used in testing the hypothesis that the observed sample distribution agrees with the theoretical distribution i.e. there is no difference between the observed and expected frequencies. The significance of the difference between observed and expected frequencies are tested as follows:

Given that:

- $O$ (Observed frequency): $O_1', O_2', O_3', \ldots, O_n$
- $E$ (Expected frequency): $E_1', E_2', E_3', \ldots, E_n$

We calculate

$$\chi^2 = \sum \left[ \frac{(O - E)^2}{E} \right]$$

d.f. = k-1

Now if the calculated value of $\chi^2 <$ tabulated $\chi^2$ for (k-1) d.f., we accept the hypothesis and conclude there is no significant difference between the observed and expected frequencies otherwise we reject the hypothesis.

(ii) $\chi^2$-test as a test independence of attributes

In case of contingency table, we set up the hypothesis that the two attributes are independent and on the basis of this assumption, we calculate expected frequency of each cell with the following formula:

Expected frequency ($E$) = Total of row in which it occurs X Total of column in which it occurs / Total number of observations

And finally, we calculate

$$\chi^2 = \sum \sum \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$$

Here, degrees of freedom = $(r-1) (c-1)$, where $r$ is the number of rows and $c$ is the number of columns

Now if calculated value of $\chi^2 <$ tabulated value of $\chi^2$ at 5% level of significance for $(r-1) (c-1)$ d.f., we accept the hypothesis otherwise reject it and conclude accordingly

3.11 Limitations of the Study
The rapid growth of insurance sector and use of latest information technology created new opportunities for the researcher to gather and analyse data in order to learn about individuals, companies and societies. Thus the topic ‘comparative study of public and
private life insurance sector’ offered a vast scope for the study. However, it was not possible to cover all the aspects of comparative study. Hence the researcher

- As the main objective of the present research was to study the public and private life insurance sector in the Indian context, technical aspect of electronic customer relationship management technologies was not covered properly.
- Since the scope of the study in this particular field was really very vast and the collected data provided huge information; therefore the researcher might reveal some other interesting results. But, the researcher limited the result of present study according to objectives of the study. However, the researcher tried to include all the necessary information for justifying the result of the study.
- The sample size of present study was relatively small to generalize the results in the Indian context. But time and financial factors did not allow the researcher to select very large sample size. However the researcher made the justification by taking into consideration mainly one insurance Company of Public Sector and seven life insurance companies of private sector on basis of their market share, and the region selected for study was really highly technical. Therefore, it would be logical to conclude that the result might be generalized in the context of Haryana State. The Haryana state is divided into four commissioned viz. Ambala, Hisar, Rohtak and Gurgaon. Respondents belongs to these districts and nearby villages were contacted for the study of behavior and preference towards life insurance sector in India and analyse the satisfaction among intermediaries (advisors, assistant sales manager, sales managers etc.), related to the factors that motivates the employees to excel. But, for future research this factor should be taken into consideration.
- The result of the present study was based on the opinions and experiences of the respondent. In opinions survey there would always be possibilities of individual biasness in opinions, and results look unreliable. This biasness could not be eliminated.
- There might be drop error i.e. the respondents who are willing as well as able may not be contacted.
There might be go error i.e. the respondents who are unable or unwilling may included in the sample. However, the large sample base as well as the pre-testing would further reduce the chances of these errors.

There might be chances of different perceptions on the wording of the questionnaire or scale. Besides, training was also imparted to the survey staff so that the wording as well as the presentations can homogenized.

3.12 Organisation of the Study
The study comprises of seven chapters:

Chapter 1 – Introduction: gives a detailed introduction and role of the insurance sector.

Chapter 2 – Review of Literature: gives a brief survey of the existing studies.

Chapter 3 – Research Methodology: gives a lucid description of the research methodology, the objectives of the study, and the sources from where information has been collected, the techniques/statistical tool applied for analysing the data collected, the period of study under observation and profile of the organisations under study.

Chapter 4 – Trend and Comparative Analysis of Business Earned by Various Life Insurers: concentrates on the comparison of business earned by LIC and Private Life Insurance companies.

Chapter 5 – Consumer Behaviour and Preferences: concentrates on the consumer behavior and their preferences.

Chapter 6 – Satisfaction of Intermediaries: concentrates on satisfaction of intermediaries in public and private life insurance sector.

Chapter 7 – Summary-Findings and Suggestions: is the concluding chapter which takes up the major findings of the study related to the results, the reasons for such results, implications of the results apart from incorporating a few suggestions with a view to ensure the role of insurance sector in the economic development in an effective manner.

Bibliography
Appendices.