Chapter-III
Research Design

Research methodology specifies method for acquiring the information needed to structure or solve the problem at hand. By methodology of any research means the selection of the representative sample, collection of relevant data, application of appropriate research tools and techniques for analysis, and interpretation of the same for scientific investigation of the problem.

Keeping in view the objectives and hypotheses formulated for the study, the research methodology for the present study has been divided into two sections. In Section-I, sample design, data collection and various tools of analysis, such as mean, standard deviation, median, Wilcoxon Mann-Whitney tests, Correlation, Regression, DEA, and Malmquist index used for investigating the comparative profitability, efficiency and productivity of the public and private sector general insurance companies for both the pre-and post-reform periods have been discussed. However, in Section-II, the service quality of these insurance companies has been ascertained through the application of certain statistical techniques, such as SERVQUAL Scale, t-test, Chi-square test, Pearson’s correlation analysis and regression analysis. The performance of general insurance companies is affected by both the external and internal factors. Due to difficulties in quantifying the impact of external factors on performance of a specific general insurance company, this study has mainly focused on internal factors, such as efficiency, productivity, profitability and service quality contributing towards the variability of insurance companies’ performance.

3.1 Hypotheses of the Study

To achieve the specific objectives of the study, the main hypotheses formulated for the present study are as follows:

H1: The efficiency of private sector general insurance companies is higher than that of the public sector general insurance companies.
H2: The efficiency of public sector general insurance companies is higher during the post-reform period than the pre-reform period.

H3: The productivity of private sector general insurance companies is higher than that of the public sector general insurance companies.

H4: The profitability of private sector general insurance companies is significantly higher than that of the public sector general insurance companies.

H5: The profitability of public sector general insurance companies is significantly higher during the post-reform period than the pre-reform period.

H6: The private sector general insurance companies are providing better service quality than the public sector general insurance companies. The other relevant sub-hypotheses have been discussed in different chapters of the study separately.

Section-I

In this section, the research methodology used for investigating the comparative profitability, efficiency and productivity of the public and private sector general insurance companies during the post-reform period has been discussed in detail. Also, profitability and efficiency of the public sector general insurance companies during both the pre- and post-reform periods has been studied.

3.2 Sample Design, Data Collection and Tools of Analysis

The study is mainly based on the secondary data which has been collected from IRDA annual reports, annual reports of general insurance companies, various journals related to insurance, websites etc. The primary data, wherever necessary, has been collected through proper interviews with the managers, officers and other employees of various general insurance companies. The reforms in the insurance industry were initiated in the year 1999 and the private sector general insurance companies started their business in 2000.
A total of eight private sector general insurance companies started their business from the year 2002-03. So, to analyze the comparative profitability, efficiency and productivity of the public and private sector general insurance companies in the post-reform period, all the four public sector companies, namely, The Oriental Insurance Company Limited, The New India Assurance Company Limited, National Insurance Company Limited, and United India Insurance Company Limited; and eight private sector companies, namely, ICICI Lombard General Insurance Company Limited, Royal Sundram Alliance Insurance Company Limited, Reliance General Insurance Company Limited, Iffco Tokio General Insurance Company Limited, TATA AIG General Insurance Company Limited, Bajaj Allianz General Insurance Company Limited, Cholamandalam General Insurance Company Limited, and HDFC-CHUBB General Insurance Company Limited, were taken up for the study. The period of the study was 2002-03 to 2007-08. To assess the effect of reforms on the profitability and efficiency of the public sector general insurance companies, a comparison has been made of all the four public sector general insurance companies during the pre- and post-reform period. The pre-reform period includes the years 1993-94 to 1999-00, and the post-reform period 2000-01 to 2007-08.

**Parameters Used to Assess Profitability Performance**

Profitability performance of the general insurance companies has been examined using the following ratios (expressed in percentage form).

1. **Claim Ratio** (Net claim incurred to net written premium).
2. **Expense Ratio** (Expenses of management to net written premium).
3. **Combined Ratio** (Net incurred claim plus expenses to net written premium).
4. **Underwriting Results Ratio** (Net written premium minus claim, expenses and increase in unexpired risk reserve to net written premium).
5. **Investment Income Ratio** (Investment income to net written premium).
6. **Net Retention Ratio** (Net written premium to gross-direct premium).
7. **Operating Ratio** (Profit before tax to net written premium).
8. Net Earning Ratio (Profit after tax to net written premium).
9. Return on Equity Ratio (Profit after tax to net worth).

To have a better view of the performance of general insurance companies these ratios have been analyzed and interpreted by calculating mean, median and standard deviation. The hypotheses regarding profitability have been tested by the application of Mann-Whitney test. The Mann-Whitney test has been applied due to the skewed data. A brief description of some important tools and the formulas are given as under:

(1) Mean ($\bar{x}$) = $\frac{\sum x}{N}$

$\sum$ = Symbol for summation

Where, $\sum x$ = Sum of series of observations

N= Number of items

(2) S.D. ($\sigma$) = $\sqrt{\frac{\sum x^2}{N}}$

where, $x = (x - \bar{x})$, $\bar{x}$ is the mean of the series and ($x - \bar{x}$) is the deviation from the mean

N= Number of items

(3) Median (M) = Value of $\left(\frac{n+1}{2}\right)$ the item, Median is a positional average.

(4) Wilcoxon Mann-Whitney test (U-test)

$U = n_1 \cdot n_2 + \frac{n_1 (n_1 + 1)}{2} - R_1$

Where, $n_1$ and $n_2$ are the sample sizes; and $R_1$ is the sum of ranks assigned to the values of the first sample. (In practice, whichever rank sum can be conveniently obtained can be taken as $R_1$, since it is immaterial which sample is called the first sample).

**Multivariate Profitability Analysis**

To examine the impact of selected factors on public sector general insurers' profitability and to empirically test, which of the identified variables
have significantly contributed towards general insurers' profitability in either direction, the Spearman’s rank correlation analysis and multiple step-wise regression analysis have been used. The Spearman’s rank correlation has been used due to skewed data of profitability parameters. The formulas are as under:

(5) Spearman’s Rank Correlation

\[
\text{Spearman’s ‘r’} = 1 - \frac{6 \sum d_i^2}{n(n^2 - 1)}
\]

Where, \( n \) = number of period observations.

Where \( d \) = Rank difference of given series

(6) Multiple regression equation assumes the form

\[ y = a + b_1 x_1 + b_2 x_2 + b_3 x_3 + \ldots \ldots b_n x_n \]

where, \( x_1, x_2, x_3 \) and \( x_n \) are independent variables and \( y \) being the dependent variable and the constant \( a \).

**Statistical Tools Used to Assess the Efficiency and Productivity of General Insurance Companies**

To evaluate the efficiency of general insurance companies, Data Envelopment Analysis (DEA) was used. DEA is a non-parametric mathematical programming technique used for assessing/evaluating and comparing the relative performance of economic units with minimal prior assumption on input-output relation. The DEA method is a generalization of Farrell's single input single output technical efficiency measure to the multiple output-multiple input case. The methodology was originally developed by Charnes et al. (1978) and was later further extended by Banker et al. (1984).

**Concept of Technical and Scale Efficiency**

The production possibility set can be represented by two alternative but equivalent ways in terms of the input and output set. For any output bundle \( y^0 \), the input requirement set is:

\[ V(y^0) = \{x : (x, y^0) \in Ps\} \]

Similarly, for any input bundle \( x^0 \), the producible output set is
\[ P(x^0) = \{y: (x^0, y) \in Ps\} \]

In the output maximization approach, the firm seeks to maximize output given the input bundle.

Given this, the study has mainly interested in two efficiency measures:

(i) **Technical Efficiency**

It refers to the ability of a productive unit to reduce all variable inputs to produce same level of output, or expand all variable outputs for the given inputs. In this case,

Technical Efficiency = \( Y^0/Ps(x^0) = \text{Actual Output/Best Practice Output} \).

As per Banker et al. (1984) orientation (under the assumption of variable returns to scale), the problem is-

Max \( \Phi \),

\[ \text{S.t} \ Y^0 \leq \lambda Y \]

\[ x^0 \geq \lambda X \]

\[ \sum \lambda_j = 1, \lambda_j \geq 0 \]

In case, however, when constant returns to scale are assumed, the condition \( j = l \) is dropped.

(ii) **Scale Efficiency**

Scale efficiency is the ratio of Technical Efficiency (Technical efficiency CRS/Technical efficiency VRS). It is the indicator of local returns to scale enjoyed by the firm (at the point of observation). If scale efficiency is less than 1, then the respective firm exhibits variable returns to scale (increasing/decreasing). If the ratio is equal to 1, then the firm exhibits constant returns to scale.

The productivity of the general insurance companies was assessed by using Malmquist index.

**Malmquist Productivity Index**

Malmquist productivity index is defined using distance functions. Suppose, the function that describes the technology of production is given as: \( F(X, Y) = 0 \) where, \( X = (x_1, x_2, \ldots x_M) \) is the input vector and \( Y = (y_1, y_2, \ldots y_s) \)
is the output vector. Alternatively, the output distance function as $D_0 (X, Y) = \min_{\mu} \left[ F(X, \frac{Y}{\mu}) = 0 \right]$ where, $\mu_Y$ is the minimum equi-proportional change in the output vector. The output distance function measures the maximum proportional change in output required to place $(X, Y)$ on the efficiency frontier. If the evaluated production unit is efficient, $D_0 (X, Y) = 1$ otherwise, $D_0 (X, Y) < 1$. Distance function may also be computed with input orientation, reference technology in a certain time period and CRS or VRS specification. Let $D_t^0$ (CRS) and $D_v^0$ (VRS) denote the output distance function computed with period $t$ technology and with CRS and VRS specification respectively. The distance function can be determined using the DEA methodology.

The Malmquist index is a summary measure of the change in TFP of a given unit over time. Each unit is identified by its inputs-outputs bundle $x, y$ with the superscript indicating whether it is observed at time $t$ and $t+1$. Following the Malmquist (output- oriented) TFP change index between period $t$ (the base technology period) and period $t+1$ (the reference technology period) is given by

$$M_t^0 (X_{t+1}, Y_{t+1}, X_t, Y_t) = \frac{D_t^0 (X_{t+1}, Y_{t+1})}{D_t^0 (X_t, Y_t)}$$

Alternatively, the output based Malmquist productivity index with reference to period $t+1$ technology as

$$M_{t+1}^0 (X_{t+1}, Y_{t+1}, X_t, Y_t) = \frac{D_{t+1}^0 (X_{t+1}, Y_{t+1})}{D_t^0 (X_t, Y_t)}$$

The output based Malmquist productivity change index can also be explained as follows:

$$M_0 (X_{t+1}, Y_{t+1}, X_t, Y_t) = \left[ \frac{D_t^0 (X_{t+1}, Y_{t+1})}{D_t^0 (X_t, Y_t)} \right]^{1/2} \left[ \frac{D_{t+1}^0 (X_{t+1}, Y_{t+1})}{D_t^0 (X_t, Y_t)} \right]^{1/2}$$

This is the geometric mean of output base Malmquist productivity indices with reference to period $t$ and period $t+1$ technology. A value of less
than 1 in the index indicates a regress (decline) in productivity, equal to 1 indicates stagnation and greater than 1 indicates a productivity growth between period t and t+1 from the perspective of period t.

\[
\frac{D_0^{t+1}(X_{t+1}, Y_{t+1})}{D_0^{t+1}(X_t, Y_t)} \left[ \frac{D_0^t(X_{t+1}, Y_{t+1})}{D_0^{t+1}(X_{t+1}, Y_{t+1})} \right]^{1/2} = \left[ \frac{D_0^t(X_t, Y_t)}{D_0^{t+1}(X_t, Y_t)} \right]^{1/2}
\]

Where, \(D_0^{t+1}(X_{t+1}, Y_{t+1})\) is the change in relative technical efficiency between periods \(D_0^t(X_t, Y_t)\) and \(t+1\)

and \(t+1\)

\[
\left[ \frac{D_0^t(X_{t+1}, Y_{t+1})}{D_0^{t+1}(X_{t+1}, Y_{t+1})} \right]^{1/2} \left[ \frac{D_0^t(X_t, Y_t)}{D_0^{t+1}(X_t, Y_t)} \right]^{1/2}
\]

captures the shift in technology (technological change) between the two time periods evaluated at \((X_t, Y_t)\) and \((X_{t+1}, Y_{t+1})\). Hence, we have Total Factor Productivity Change = Technical Efficiency Change x Technological Change.

Technical efficiency change measures the change in efficiency between current (t) and next (t+1) periods, while the technological change (innovation) captures the shift in frontier technology.

(7) Geometric mean (G.M.) = \(\sqrt[n]{x_1 \cdot x_2 \cdot x_3 \cdots \cdots x_n}\)

Where,

G.M. = geometric mean

N = number of items

\(x_i\) = \(i^{th}\) value of the variable \(x\)

\(\pi =\) conventional product notation.

**Measurement of Inputs and Outputs**

An important step in efficiency analysis is the definition of inputs and outputs. Indeed, the results can be misleading or meaningless if those quantities are poorly defined. This problem is especially acute in the service sector, where
many outputs are intangible and many prices are implicit. Defining inputs also must be done with care, where basic data of some inputs, such as the number of hours worked and number of employees is not available in public sources. In spite of the challenges, researchers have come up with ways to measure inputs and outputs that produce economically meaningful efficiency scores (Communis and Weiss, 1998). Although the choice of inputs and outputs is fundamental to the success of any efficiency analysis it has proved to be problematic in the case of financial services firms.

Particular difficulties can arise in classifying intermediate goods and services, which can have both input and output characteristics. In general, inputs such as land, labour and capital represent the resources that are utilized to produce the firm’s output, and the acquisition of these inputs represents a cost to the firm. Output, on the other hand, represents those goods or services which the customers of the firm are prepared to purchase, and the sale of these outputs generates revenue. For financial services companies such as insurers, the output is often intangible, and therefore, difficult to measure. The pragmatic approach is, therefore, to identify the services provided by such firms and find measurable proxies that are highly correlated with those services. There has been considerable disagreement over the appropriate proxies to use the output for insurance services. When it comes to considering insurance company output, the majority of efficiency studies have used premium income as a proxy for the output (of non-investment related) insurance services even though premiums are really a form of revenue, that is price times quantity rather than a count of output units. Investment income is often used to proxy for the investment related services provided by insurers (since again there is no available count of investment units). The problems with using premium income to proxy output have led some authors to use the value of claim payments.

The rational for the use of claim to proxy for insurance output is that the primary function of insurance is risk pooling, i.e., the collection of funds from the policyholder pool and the redistribution of funds to those pool members who incur losses. Claims are also a good proxy for “real services” provided by
insurers, such as coverage design and providing legal defence in liability suits (Cummins et al., 1999). However, it is difficult to understand why the management of insurance companies would seek to maximize the value of insurance claims, and this therefore, violates the principal characteristic that more output should be preferred to less (Diacon et al., 2002).

When different outputs provide different conclusions, researchers need to be careful about interpreting results. It may not be appropriate to use only one approach and to draw conclusions from the results of that approach (Jeng and Lai, 2005). Therefore, in this study, three models of output have been used to examine the efficiency and productivity of general insurance companies in India. In the first model, net written premium has been taken as proxy for the output; in the second, net claim incurred has been taken as output; and in the third, net premium written and investment income have been taken as output. The premiums are usually paid in advance of loss payment. It is necessary to appropriately account for investment income when measuring insurance output (Cummins and Weiss, 1998).

When it comes to the choice of inputs, there is general agreement that labour (administrative, managerial and sales) and capitals are the main input resources utilized in the production of insurance. Although it may be possible to undertake a head count of staff, most studies use total operating and selling costs as a proxy. In the insurance industry, this approximation is a necessity because of the widespread industry practice of outsourcing administrative and sales functions (so that a simple head count would seriously underestimate staff inputs). This study uses staff and capital resources as the main inputs. The inputs of sales, administrative and managerial staff are proxied by the insurers total operating expenses including commission. Capital inputs included shareholders capital plus reserves & surplus.

In the present study, value measures as proxies for inputs and outputs have been used to assess the efficiency and productivity. The widespread practice of using value measures (such as revenue, costs, and capital) as proxies for the inputs and outputs of financial services firms raises questions about
exactly what type of efficiency is being measured. Technical efficiency strictly requires inputs and outputs to be measured in units. However, the intangible nature of financial services output often means that no homogeneous unit of output can be identified (sometimes even conceptually) and output prices cannot be quality adjusted. Similarly, inputs like capital can only exist in value terms, and the unit cost of capital is difficult to measure in firms that are not publicly quoted. Thus, the technical efficiencies reported here are value-based rather than the more traditional units-based measures found in many non-financial efficiency studies. The term 'value-based' is used to recognize that the technical efficiency measures are based on monetary values for inputs and outputs (using both cost/revenue flows, and capital stocks), but do not capture optimal choices in response to market prices (Diacon, 2001).

Choice of Model

The question that has to be dealt with is whether to use output or input orientation model. Input-oriented model deals with input minimization approach, which holds outputs constant and determines the minimum level of inputs necessary to achieve that level of outputs. While output orientation model deals with output maximization which holds inputs constant and determines the maximum outputs that can be produced for that given level of inputs.

The current study attempts to measure the efficiency and productivity using the output maximization model. The Indian insurance industry, still in its nascent stage, has a huge potential to be tapped. So, it makes sense to use output maximization model. To curve the impact of inflation, the whole analysis of efficiency and productivity has been done at constant prices. The index has been taken from National Income Statistics, July 2008 published by Centre for Monitoring Indian Economy.

Section-II

This section discusses in detail the research methodology used for investigating the comparative service quality level of the public and private
sector general insurance companies and other perceptions which are helpful in improving the service quality of these companies.

**Data Collection**

This study is based on primary as well as secondary data. The primary data was collected with the help of a structured questionnaire based on SERVQUAL scale. The secondary data was collected from various research papers, books, journals, published reports of IRDA, IRDA annual reports, annual reports of general insurance companies, and websites.

**Sample and Sampling Design**

The universe of the study is all general insurance companies operating in India but due to non-feasibility and time constraint, the scope of the study has been restricted to five general insurance companies, i.e., two companies from the public sector, namely, New India Assurance Company Ltd., and Oriental Insurance Company Ltd.; and three from the private sector companies, namely, ICICI Lombard General Insurance Co. Ltd., Bajaj Allianz General Insurance Co. Ltd., and IFFCO-Tokio General Insurance Co. Ltd. The criterion adopted for selecting the private sector companies was their year of registration. The reforms in the insurance industry were initiated in the year 1999 and the private sector general insurance companies started their business in 2000. A total of six companies were registered during this period. However, for the purpose of uniformity, top three private sector general insurance companies registered on the basis of their market share were selected. The primary data was drawn from customers of both public and private sector general insurance companies and only in the state of Punjab. As many as 430 customers were approached to collect the required data for the study. However, 300 questionnaires filled by the respondents, 60 each from all the five selected companies, with a response percentage of 69.8 were found complete in all respects for the analysis. In India, general insurance includes many portfolios like fire, marine, motor, health, workman, compensation, engineering, personal accident, aviation, etc. But the questionnaires were got filled from the customers of motor, health, and fire portfolios. These portfolios were selected due to their major market share.
The number of customers in these portfolios were also decided as per the proportion of these portfolios in gross-direct premium to the maximum possible extent.

**Table 3.1**  
**Premium Underwritten and Market Share of the Top Five General Insurance Companies During the Financial Year 2006-07**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of the Company</th>
<th>Gross Direct Premium (Rs. Crore)</th>
<th>Market Share (%age)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>New India</td>
<td>5936.78</td>
<td>22.90</td>
</tr>
<tr>
<td>2.</td>
<td>Oriental</td>
<td>4020.78</td>
<td>15.51</td>
</tr>
<tr>
<td>3.</td>
<td>ICICI Lombard</td>
<td>2989.07</td>
<td>11.53</td>
</tr>
<tr>
<td>4.</td>
<td>Bajaj Allianz</td>
<td>1786.34</td>
<td>6.89</td>
</tr>
<tr>
<td>5.</td>
<td>IFFCO-Tokio</td>
<td>1144.47</td>
<td>4.41</td>
</tr>
</tbody>
</table>


**Statistical Techniques Used**

To analyse the comparative service quality of the public and private sector general insurance companies a SERVQUAL model was used. T-test was used to assess the significance of gap between customers' perceptions and customers' expectations on 38 items of service quality and perceptions of overall service quality, customers satisfaction level, purchase intention measures, impact of privatisation on overall working of general insurance companies, etc. of the public and private sector respondents. Pearson's correlation analysis was used to analyse the relationship between independent and dependent variables. The regression analysis was conducted to determine the relative importance of service quality items influencing the overall service quality, importance of overall service quality to influence the customer satisfaction and purchase intention behaviour, and the importance of customer satisfaction to influence the purchase intention behaviour. Chi-square test was used to analyse the significant proportional difference between the customers of the public and private sector companies regarding various information related to Ombudsman, websites, customer meetings, etc. The Pearson's correlation and t-test were used due to normally distributed data of service.
quality dimensions. Brief description and formula of some important tools is given as under:

To test the significant gap between perception and expectation within public-sector and private sector, the following t-test was used:

(8) \[ t = \frac{\bar{X} - \mu_{d}}{\sigma_s / \sqrt{n}} \text{ with d.f. } = (n-1) \]

\[ \sigma_s = \sqrt{\frac{\sum (x_i - \bar{x})^2}{n-1}} \]

To test the significant gaps of perception and expectation of public and private sector the following t-test was used:

(9) \[ t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{(n_1-1)\sigma_{1}^2 + (n_2-1)\sigma_{2}^2}{n_1 + n_2 - 2} X \left( \frac{1}{n_1} + \frac{1}{n_2} \right)} \] 

With d.f. = (n_1+n_2-2)

(10) Chi-square : The value of Chi-square is calculated as

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

Where, \( \chi^2 \) = Chi-square value

O = Observed Frequencies

E = Expected Frequencies

(11) Karl Pearson’s co-efficient of correlation

Direct Method

\[ r = \frac{\sum xy}{\sqrt{\sum x^2 \cdot \sum y^2}} \]

where \( x = (X - \bar{X}) \)

\( y = (Y - \bar{Y}) \)

**Developing the Research Instrument**

For analysing the customers' perception and expectation towards service quality of general insurance companies, a modified SERVQUAL type questionnaire relevant to the insurance industry was constructed. A questionnaire included 22-items from the original five dimensions (i.e.
Tangibility, Reliability, Responsiveness, Assurance, and Empathy) of the SERVQUAL instrument developed and updated by Parasuraman et al. (1994). In order to obtain an even more comprehensive and insurance industry specific measure of the service quality, 16 additional items were added to the SERVQUAL scale. The additional items were derived by reviewing the studies conducted in the insurance sector, personal interviews with managers, employees, officers and customers of general insurance companies.

Thus, in total, 38 items were included under seven dimensions (i.e. Tangibility, Reliability, Responsiveness, Assurance, Empathy, Product Availability, and Product Convenience) to measure the service quality. The preliminary draft of the questionnaire was pre-tested on 50 customers of general insurance companies. This helped in improving and finalising the questionnaire. The respondents were asked to evaluate their insurers on 38 items. All the items were measured on the five-point likert scale from 5 (strongly agree) to 1 (strongly disagree). Apart from service quality scale, overall service quality, customer satisfaction and purchase intention were also measured; and respondents were asked to rate their companies on a five-point scale. The pre-testing of questionnaire emphasized the various other factors influencing the perceptions and expectations of customers like usage of internet services, Ombudsman, working of company regarding claim settlement, arrangement of customer meetings, etc. which require further attention. So, in the final questionnaire, items regarding these measures were also included.

3.3 Reliability Analysis

Prior to the analysis of the results, the research instrument was tested for its reliability. The internal consistency of the grouping of the items was estimated using a reliability co-efficient called cronbach's alpha and alpha value of 0.60 or above is considered to the criterion for demonstrating internal consistency of new scales and established scales respectively. The computed reliability co-efficient (α) for 38 items of perceptions and expectations of service quality scale of public sector and private sector are shown in table.
### Table 3.2
Reliability Test of Perceptions of Customers Regarding Service Quality Dimensions

<table>
<thead>
<tr>
<th>Sector</th>
<th>Number of Respondents</th>
<th>No. of Items</th>
<th>Cronbach's Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Sector</td>
<td>120</td>
<td>38</td>
<td>0.972</td>
</tr>
<tr>
<td>Private Sector</td>
<td>180</td>
<td>38</td>
<td>0.953</td>
</tr>
</tbody>
</table>

### Table 3.3
Reliability Test of Expectations of Customers Regarding Service Quality Dimensions

<table>
<thead>
<tr>
<th>Sector</th>
<th>Number of Respondents</th>
<th>No. of Items</th>
<th>Cronbach's Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Sector</td>
<td>120</td>
<td>38</td>
<td>0.938</td>
</tr>
<tr>
<td>Private Sector</td>
<td>180</td>
<td>38</td>
<td>0.920</td>
</tr>
</tbody>
</table>

Note: $\alpha$ value of 0.60 and above testifies strong scale reliability.

The Cronbach’s $\alpha$ values of perceptions and expectations of service quality dimensions of the public & private sector are more than 0.90 testifies strong scale reliability.

(12) Cronbach’s $\alpha$ is defined as

$$\frac{N}{N-1}\left(\frac{\sigma^2 x - \sum_{i=1}^{N} \sigma_{yi}^2}{\sigma^2 x}\right)$$

Where, $N$ is the number of components, $\sigma^2 x$ is the variance of the observed total test scores, and $\sigma^2 y$ is the variance of component $i$.

### 3.4 Limitations of the Study

Every research has its limitations and this study is also no exception.

The present study has the following limitations:

1. The responses for the study have been solicited from the state of Punjab only. The perceptions and expectations of the customers in Punjab may vary from those of the rest of India.

2. The customers of only five General Insurance companies were selected for the present study to compare service quality of the public and private sector. As a result, the generalization of the findings of the present research should be considered carefully.
3. The present research explores the key dimensions of the service quality in the general insurance industry. A total of 38 parameters under seven dimensions were used to measure consumers' perceptions and expectations of the service quality. Although an attempt has been made to extensively identify the attributes of the general insurers' service quality, there may still exist the possibility of missing the key dimensions influencing the consumers' perceptions and expectations of the service quality.

4. Any study which is based on the primary data collected through the pre-designed questionnaire suffers from the basic limitation of possibility of difference between what is recorded and what is truth, no matter how carefully the interview has been conducted. The same may be with the present study because the people may not deliberately report their true opinion due to some biasness.

5. The information collected for the secondary data based study carries all the limitations inherent with the secondary data.

6. This research work assessed only the technical efficiency but allocative efficiency and overall efficiency could not be assessed due to unavailability of data of inputs and outputs prices of general insurance companies.
References


Chapter IV

Reform Process of Insurance Sector in India

The insurance industry in India has witnessed many radial transformations during the last about one hundred ninety years of its inception. The insurance business remained in the hands of private insurers with minimal government intervention up to 1956. Both the life insurance as well as the general insurance companies were nationalized by the government in the years 1956 and 1972 respectively, giving them a chance to have monopoly in the field. But, unlike life insurance, a different structure was created for the general insurance industry. One holding company was formed with four subsidiaries, and again, the private sector was allowed to enter the insurance business in the year 2000.

4.1 Insurance Industry in India: A Historical Perspective

The history of insurance in India can be traced with the establishment of a British company called the Oriental Life Insurance Company in 1818, followed by the Bombay Assurance Company in 1823, and the Madras Equitable Life Insurance Society in 1829. All these companies operated in India but did not insure the lives of Indians. They were insuring only the lives of Europeans living in India. The first general insurance company known as Triton Insurance Company Ltd., was established in 1850. It was owned and operated by the British. The first indigenous general insurance company was the Indian Mercantile Insurance Company Limited set up in Bombay in 1907 (Sinha, 2005; Sharma and Agarwal, 2005). The wholly Indian-owned insurance company, namely, The New India Assurance Company Limited was incorporated on July 23, 1919 which commenced its operations in October the same year (Narayanan, 2006).

There was no exclusive legislation to govern the activities of insurance companies during the 19th century. To control the operations of life insurance in India, the Indian Life Insurance Companies Act, 1912 was enacted. However, the first comprehensive legislation was introduced with the passing
of Indian Insurance Act, 1938. The Act made provision for required equity capital to carry out insurance business, ceiling on shareholding pattern, strict control on investments, agency commission etc. Subsequently, a separate wing was established in the Ministry of Finance to administer the provisions under the Act (Sharma and Agarwal, 2005). Though a number of statutory laws and insurance Acts were passed from time to time to regulate and control the business, yet as many as 66 out of 215 life business companies perished between 1935 and 1955. This was largely due to growing business mismanagement and malpractices, manipulation of life funds to indulge in speculative trading, large scale liquidation of insurance companies, interlocking of funds, and control and influence of large business houses which led to public disenchantment and resentment (Rajan and Dhunna, 2002). This led to the nationalization of life insurance by amalgamating all private companies under one corporation, i.e., L.I.C. The number of companies in the general insurance sector increased steadily, and by 1972 their number had gone to 107. However, out of these 107 companies, more than 50% were in financially bad shape. Taking into account the bad health of private operators and vast fund mobilization potential in this sector, Government of India nationalized the General Insurance sector w.e.f. 1st January, 1973. It formed four subsidiaries, namely, (1) The New India Assurance Company Ltd., (2) The Oriental Insurance Company Ltd., (3) The National Insurance Company Ltd., and (4) The United India Insurance Company Ltd., with a holding company General Insurance Corporation of India.

In spite of the commendable growth and performance of the LIC and GIC on both economic and social fronts, a vast potential still exists as majority of insurable population is still untapped. Macro indicators such as population coverage, per capita premium, contribution to employment and GDP are still very low as compared to developed countries, although they compare reasonably well with other developing countries. The consumers have less choice of products in the absence of tailor-made products to suit different categories of people in terms of their levels of income, nature of profession and
needs. Therefore, the criticism that is voiced against the state monolith is on
grounds of ‘efficiency’. It is believed that competition would lead to reduction
of costs (premium rates) and shall offer a wider choice of products to the
consumers. In consonance with these concerns, the reform process of Indian
insurance sector was initiated by the Government of India.

4.2. Reform Process of Insurance Sector in India

The Government of India constituted the Malhotra Committee to
examine and recommend the measures for the introduction of the reforms
process in the insurance sector. R.N. Malhotra, retired Governor of the Reserve
Bank of India, was named its Chairperson. The committee examined the
structure of the insurance industry and recommended changes to make it more
efficient and competitive, keeping in view the structural changes in other parts
of the financial system of the economy (Sharma and Agarwal, 2005). The
Government accepted the report of the Committee, which was submitted to the

4.3 Recommendations of the Malhotra Committee

The Malhotra Committee had made certain recommendations to the
Government to change the face of the industry and to give it a more meaningful
direction. Regarding the liberalization of the insurance industry, the Committee
made the following important recommendations:

(a) Private sector should be allowed to enter the insurance business:

The Committee had deliberated on the subject and the following issues
weighed in favour of opening the industry to competition:

- Competition would lead to better customer service.
- It would improve the quality and price of insurance products.
- The entry of new players would lead to better penetration of the market.
- When other wings of the financial sector like banking, mutual funds,
  merchant banking, and non-banking financial sectors were exposed to
  competition, there was no reason to keep insurance insulated.
- Public view was converging towards competition in the insurance
  sector.
• As public sector insurance institutions had created a good pool of professional talent and marketing network, there was no fear of them being incapable of facing competition.

(b) No composite Insurance Companies:

The Committee recommended that no single company should be allowed to transact both life and general insurance business. The Committee had so recommended as life and general insurance are two different lines of business, and prudence demands that there should not be any mixing up of funds.

(c) Number of new entrants to be controlled:

The Committee felt that this step was necessary to control the cropping up of small private sector companies and their wilting away during a financial crisis.

(d) Minimum paid-up capital:

With a view to ensure that only companies with a good track record in their line of business apply for licenses to act as insurance companies, the Committee recommended a paid-up capital of Rs.100 crore for the new entrants. At the same time, the Committee felt that this requirement could be lowered in cases where the promoters are state level co-operative institutions.

(e) Obligation to do business in rural areas and for weaker sections of the community:

This stipulation was introduced to ensure a level-playing ground for all insurance companies. New entrants may tend to concentrate on more lucrative business to the neglect of the common people and the rural areas. To avoid this, the Committee had recommended that both life and non-life companies should procure a prescribed percentage of business from these segments.

(f) Selective entry to foreign companies:

The Committee felt that permitting foreign insurance companies would be in the interest of the Indian economy, particularly in the context of globalization. It recommended that entry to foreign companies should be on a
selective basis. Foreign companies entering India should be required to float an Indian company, preferably as a joint venture.

(g) Technology upgradation:

The insurance has become an information-driven industry all over the world. This, in effect, means heavy dependence on IT and development of computer support systems. The industry has to develop software to improve effective customer service and claim management.

(h) Pension Sector:

To popularize the contribution to individual pension funds by self-employed professionals, traders and workers in the unorganized sectors, the Committee recommended income tax concessions up to a prescribed limit for contribution to individual pension schemes floated and managed by insurance companies. The Committee cited the nature of tax concessions available on individual contributions to the pension funds and concessions available to pension funds in the UK; it suggested that substantial concessions should also be available for contributions to pension funds in India, and this should cover schemes managed by all the insurance companies as well.

(i) Privatization of LIC and GIC:

The Committee felt that as a State-owned entity, LIC suffered many operational constraints, and its flexibility and ability to respond to changing situations was limited. Many of the constraints are due to the reason that, in the eyes of law, LIC falls within the definition of 'State'. To overcome this situation, LIC should be taken out of the definition of 'State'. To achieve this, the share of the Government in the equity of LIC should be reduced to 50% or to 49% as the Government had decided in the case of certain PSUs. To enable LIC to run as a board managed company with a dominant shareholding by the Government, the shareholding pattern has to change, and LIC has to be registered as a company under the Indian Companies Act.

As far as GIC is concerned, it was recommended that GIC should cease to be a holding company of four of its subsidiaries, and should act as an Indian Reinsurer under the Indian Insurance Act. It was further recommended that the
share capital of GIC should be raised to Rs.200 crore from its present level of Rs.107.50 crore. Out of this, 50% of the equity should be held by the Government and the rest by the Public at large, including employees of GIC. As far as the four subsidiary companies are concerned, it was suggested that they should function as independent companies run by a board. It was further proposed that the equity capital of each of these companies should be raised to Rs.100 crore with a 50% holding by the Government and the rest by the public and the employees of the respective companies.

(j) Establishment of an Insurance Regulator:

While considering the implications of opening up the industry to competition, the Committee also examined the role of the Controller of Insurance, and the need for a regulatory body for the insurance sector. The Controller of Insurance was vested with wide powers under the Indian Insurance Act, 1938. With the progressive nationalization of the life and general insurance sectors, the powers of the Controller of Insurance were reduced as many of the functions were transferred to the nationalised companies themselves or, wherever necessary, the Government itself started exercising the powers directly. The Committee felt that this dispensation was flawed even in the context of a State monopoly and would have to change in a competitive environment. The Committee suggested restoring the office of the Controller of Insurance to its full statutory powers and segregating it from the Ministry of Finance. The Committee had also suggested setting up an Insurance Regulatory Authority as a multi-member body and as a highly professional and compact organisation with adequate IT support, similar to the Securities and Exchange Board of India (SEBI). With this in view, the Committee proposed the establishment of a powerful and autonomous regulatory body on the lines of SEBI. The Committee also further stated that the regulatory authority should have full functional autonomy and operational flexibility to discharge its functions in a free and fair manner (Narayanan, 2006).
4.4. Mukherjee Committee Report

Immediately after the publication of the Malhotra Committee Report, a new committee (called the Mukherjee Committee) was set up to make concrete plans for the requirements of the newly formed insurance companies. Recommendations of the Mukherjee Committee were never made public. But, from the information that filtered out it became clear that the committee recommended the inclusion of certain ratios in insurance company balance-sheets to ensure transparency in accounting. But the Finance Minister objected. He argued (probably on the advice of some of the potential entrants) that it could affect the prospects of a developing insurance company (Banga, 2007).

4.5 Insurance Regulatory Authority (IRA)

Based on the recommendations of the Committee, the Government constituted an interim authority, called the Insurance Regulatory Authority, to look into the implementation aspects of the report. The Authority comprised a Government nominee and a member each from the life and general insurance industries. The primary task of the Authority was to frame regulations on its functioning and act as the insurance regulator. Subsequently, based on the recommendations of a standing committee, the Authority was vested with the responsibility of developing the insurance business in India and also train and develop professionals and intermediaries for the purpose. In August 1997, when the Insurance Regulatory Authority Bill was piloted in the Lok Sabha, it could not be passed. The Bill was strongly criticized and denounced and had to be withdrawn.

4.6 Insurance Regulatory and Development Authority (IRDA)

The IRA Bill, renamed as Insurance Regulatory and Development Authority Bill, 1998 was passed by the Lok Sabha on December 2, 1999 and subsequently by the Rajya Sabha on December 7, 1999, and notified on December 29, 1999. The enactment of the Insurance Regulatory and Development Authority Act, 1999 ended the State monopoly of the sector. The IRDA, as an autonomous body, was constituted on April 19, 1999 vide Government of India notification no. 277. The Act vested the IRDA with the
responsibility of regulating and developing the business of insurance and re-
insurance in India.

The principal responsibility of the IRDA includes:

- Framing various regulations governing the activities of the insurance companies and corporations—both Indian and Indian companies with foreign business partners.
- Discharging the responsibility of the Controller of Insurance in opening offices, licensing intermediaries, etc.
- Monitoring the activities of the Tariff Advisory Committee (TAC), divesting the GIC of its authority to transact non-life business and designating it as the Indian Reinsurer.

Objectives of the Insurance Regulatory and Development Authority (IRDA):

- To protect the interest of and secure fair treatment to policyholders.
- To bring about speedy and orderly growth of the insurance industry for the benefit of the common man, and to provide long-term funds for accelerating growth of the economy.
- To set, promote, monitor and enforce high standards of integrity, financial soundness, fair dealing and competence of those it regulates.
- To ensure speedy settlement of genuine claim, to prevent insurance frauds and other malpractices and put in place effective grievance redressal machinery.
- To promote fairness, transparency and orderly conduct in financial markets dealing with insurance and build a reliable management information system to enforce high standards of financial soundness amongst market players.
- To take action where such standards are inadequate or ineffectively enforced.
- To bring about optimum amount of self-regulation in day-to-day working of the industry consistent with the requirement of prudential regulation (Annual Report of IRDA 2002-03).
Functions of Insurance Regulatory and Development Authority:

The IRDA has been established to perform the following regulatory functions:

- Issue and withdraw licenses.
- Specify qualification codes of conduct and training for intermediaries and agents.
- Specify the form and manner in which books of accounts shall be maintained.
- Regulate investment of insurance funds.
- Specify and percentage of life insurance business to be undertaken by the insurer in both rural and social sectors.
- Approve the appointment of the managing directors (Ali et al., 2007).

The IRDA began functioning on April 19, 2000 with N. Rangachary as its first Chairperson and with 4 full-time directors and 2 part-time directors, in addition to the 25-member Insurance Advisory Council. The members of the council represented various industries and professions. The IRDA appointed its first advisory panel with 23 members on May 25, 2000.

4.7 Insurance Councils

The insurance councils that were in existence under the provision of the Indian Insurance Act 1938, were not effective and practically defunct during the days of State monopoly. After the advent of the IRDA in February 2001, vide the power vested in it under Sections 64C and 64F of the Insurance Act, 1938, the IRDA revived the Life Insurance Council and the General Insurance Council. These two councils, each headed by a member of the IRDA, play significant roles in establishing industry standards. As a need was felt for the constitution of an appellate authority for the various decisions of the IRDA, on the lines of the Securities Appellate Tribunal, the Government notified the setting up of an appellate authority for the insurance industry, and also set up a single bench and a division bench; it is expected that shortly a full-fledged appellate body would be set up as envisaged in the Law Commission Report on the subject.
Regulation of insurance is not an exclusive Indian phenomenon. Insurance is amongst the highly regulated businesses in the world. Interestingly, a view is strongly emerging that, in India, the insurance council representing the industry and the IRDA should become a self-regulatory body and address itself to issues relating to the management of the industry as is being done in some countries abroad. However, some industry experts opine that while regulatory mechanisms are regaining lost ground in many countries, as self-regulation had turned out to be a poor proxy, a switchover from well-established regulatory systems to a liberal, self-regulatory mechanism might not be in the interest of the customers.

4.8 Detariffication of Insurance Sector in India

Detariffication has been the most awaited reform in the general insurance industry ever since the Malhotra Committee recommended gradual removal of tariffs in the non-life insurance sector. The detariffing exercise has two phases. The first phase started on January 1, 2007 when the IRDA allowed companies to charge their own premium for all classes of business that had been under a tariff till then. The exception was Motor Third Party Liability Insurance for commercial vehicles. The second phase was started from 1st January, 2009 as the General Insurance Companies have given more freedom to design their own products. IRDA in its circular issued on November 6, 2008 has given the general insurance companies the freedom to offer certain covers outside the scope of the descriptions in the erstwhile tariffs (GIC Re News, 2008).

The reforms have changed the whole scenario of Indian insurance industry. Its character has changed altogether in the wake of transition from a controlled to a competition-driven market. Several new players have entered into the insurance business. The foreign insurers have entered through the joint venture route. Their entry into the field has generated a tough competition in the market which resulted into better customer service. The quality and price of insurance products has greatly improved. The range of products and services has increased so as to give a wider choice to the customers. Both the existing as
well as new players have got ample opportunities to penetrate into untapped areas, sectors and sub-sectors and unexploited segments of population as presently both insurance density and penetration are at a low level. Thus, the reform process started in India has helped the insurance sector to grow in a quick and orderly manner for the benefit of the common man.
References


