CHAPTER – 3

Chapter 3: RESEARCH METHODOLOGY

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3.1. INTRODUCTION

The section for methodology illustrates research approach and design considered for current study. It has been noted as an endeavor towards the process of elucidating as well as justifying apt mode of research design in terms of apprehending the problem of the research. It is the source to imply the collection of data as well as techniques to attain analysis of the data. According to Lee and Lings (2008) methodology is subject to offer connection between research problem and the procedure by which this problem can be analyzed. This section has been categorized under two distinctive parts. These are – implication of types of data and the method of the research; and the in-depth analysis of collected data. The conclusion of methodology is a brief note about the ethics related to the research and relevance of accuracy towards the same.

This chapter on Methodology offers an overview about the research design, types of data to be collected, sampling design and relevant interpretation towards the conducting of respective research and necessary statistical tools selected for proposed hypotheses of the research.

3.2. RESEARCH DESIGN

Research design has been explored under diversified definitions. In respect to this report, research design will be considered as a blueprint or framework with determined procedures towards the
collection and analysis of collected valid data, as attained from different sources. The motive is to identify or rather react towards the respective research problem or relevant scopes of the research. The aim is to get the difference among cost of attaining varied accuracy levels and expected value towards information in reference to all the accuracy levels on a maximized structure.

According to many scholars, a successful mode of research design is about comparing following tasks:

- Define problem of the research;
- Determination of data for resolving research problem as per need;
- Designing of descriptive, exploratory or causal research phases;
- Specify scaling and measurement procedures;
- Construct as well as pre-test questionnaire or select apt mode of collecting data;
- Specify the process of sampling and its size;
- Develop data plan through analysis as well as tabulation;
- Evaluate research ethics;
- Specify financial and time constraints; and
- Follow complete study or the research.

It is important to maintain necessary caution in order to avoid defining symptom instead of underlying problem (Cravens, 2000). It turns imperative to identify a framework as well as implement the
same in the research design. This however, relies on the kind of research problem and can be formulated by the application of descriptive, exploratory or causal research.

According to Groenewald (2004), research design has been noted as an advanced set of decisions that creates the master plan for the determined methods as well as proceedings for the collection of data and analysis of the same. Research design is about detailed types of approaches meant for the research and the implementation of the same. It also concentrates on the measuring of variables as well as data collection from participants. It devises a notable strategy in order to sample the selected participants and plans the way to analyze the collected data.

3.2.1. Research Design adopted:

This research has followed descriptive research analysis. According to Kothari (2005) descriptive approach illustrates the ideologies of population. It never stands as any literary or poetic approach, yet offers concrete and concise illustration about originality. Some of the collected data are quantitative in nature and are validated through numbers and percentages, while others are qualitative with why and how elements. Descriptive research can identify or rather justify practical conditions. It is capable of making assessments and can compare factual data depicting relevant phenomena. Kumar (2005) states that descriptive research can assist the researchers in
terms of creating data about similar population. Descriptive study tries to illustrate systematically structured instance, phenomenon, problem, service or data related to living conditions meant for the community or to illustrate attitudes for the same. As against this, Gregory (2002) illustrates descriptive research as the way to assist researchers in terms of creating data to illustrate composition and features of similar groups. Such groups can be that of consumers, employees, service providers and amalgamation of some other organizations. The process of descriptive research is liable to generate perfect comprehensiveness about the selected inquiry groups and thereby can establish interrelationships among the notable variables. It is quick and is noted for identifying investigation made over sufficient interpretation.

This research makes use of descriptive research design as it analysis in detail the preference of consumers of Karnataka towards’ BSNL services.

3.3. STATEMENT OF THE PROBLEM

Research is essentially an investigation, a record and an analysis of evidence for the purpose of gaining knowledge. In other words, research is an organized enquiry to find out facts. The inherent aim of every research is gaining knowledge. Knowledge is a tool to solve the problems of individuals, institutions, and the society at large.
In research problem means a question which is put forward to be answered. In business there are plenty of problems which require immediate solution. The problems may be pertaining to production, marketing, finance and the like. These problems need immediate solution and the research and development wing of the business organization offer the enterprise expertise to solve such problems.

Today's global market witnesses a cut-throat competition. Many new products enter the market, stay for a while, and then go obsolete. Fads come into existence and vanish even quicker than they appear. Rapid changes in the consumers' choices, increases in their disposable income, globalization, media exposure, and influence of global and psychological trends attribute to this behaviour. In order to sustain themselves in the market, it is necessary for every telecom operator to know the consumer perception and attitude towards telecom services. Consumer tastes and preferences keep on changing. In keeping with the changing tastes and preferences of consumers, the telecom operators have to constantly innovative and offer features and services to match. The survival and the growth of any enterprise largely depend on meeting the requirements and aspirations of present and future consumers. Hence, the study of consumer behaviour is the key for the success of cellular industry.
3.4. NEED FOR THE STUDY

As the average revenue per user is decreasing because of cutthroat competition, the cellular service providers are increasingly looking for an additional revenue stream. This study outcome contributes valuable learning about the field of mobile communication to the broader academic knowledge base. This research may serve as useful input to telecommunication companies, researchers and media futuristic. The advantage of present study is that it will make available hither to unavailable data to the existing body of knowledge.

The Changing competitive structure brought in by the liberalization of Telecom Industry necessitates that any enterprise engaged in providing telecom services need to adopt marketing orientation in providing telecom services. The adoption of services marketing concepts is a precondition for the survival and growth of enterprises engaged in this sector. Keeping in view the strategic nature of Telecom Industry in view and the adoption of marketing concepts to provide effective services as means to create and expand markets. Hence the research study entitled “A study on Consumer Behaviour in telecom industry with reference to BSNL” has been undertaken.
3.5. OBJECTIVES OF THE STUDY

1. To study the growth and development of Telecom Industry in India.

2. To study in detail the preference of consumers of Karnataka towards’ BSNL services

3. To examine the perception of customers on BSNL telecom services in Karnataka.

4. To examine the level of customer satisfaction of BSNL telecom service in Karnataka.

5. To evaluate the effectiveness of BSNL services in Karnataka.

6. To offer suitable suggestions for the effective functioning of BSNL telecom services in Karnataka.

3.6. SCOPE OF THE STUDY

The scope of the study is related to the services rendered by Telecom service provider in the Karnataka state namely BSNL. The study has been conducted to know the consumer preference and perception towards BSNL in Bangalore, Tumkur, Chickballapur, Kolar.

Period of the Study: The primary data for the study has been collected from April, 2012 to March, 2013.
3.7. METHODOLOGY

For the purpose of the research study, both the primary and secondary data have been collected. Primary data has been collected through comprehensive questionnaire administered to the customers of BSNL.

Secondary data has been collected from the various research publications, journals, magazines, daily newspapers, pamphlets, published reports and published and unpublished literature related to the above mentioned service providers.

3.8. PRE-TESTING OF QUESTIONNAIRE

The questionnaire has been pre-tested on a sample of 50 customers of BSNL cellular service provider in Bangalore, Karnataka State. The pre-testing of questionnaire has helped the researcher to modify some questions and alternative answers. Some of the respondents were happy to reveal their experiences and asked the researcher to make provision for other alternative answers which were duly incorporated. The final (modified) questionnaire after pre-testing was used for collecting the data.

3.9. SAMPLE OF THE STUDY

Sample size of the study was 400. The customer sample after leaving out not properly filled questionnaires the real sample size was 383. The area of the study was restricted to BSNL service provider
operating in Karnataka. All 400 respondents have been administered with a structured questionnaire for the purpose of the study. The selection of the respondents has been randomly made from the cities like Bangalore, Tumkur, Chickballapur, Kolar of Karnataka State. The sample size for the survey has been drawn from various categories of consumers, and thus appropriate representation of all market segments has been ensured. The size and the length of the survey questionnaire have been kept optimum. Convenience sampling method has been adopted for selection of the respondents.

3.10. ANALYSIS AND INTERPRETATION

The classification of raw data was essential for analysis and interpretation. The computer system was used for classification of data. As most of the questions, included in the questionnaire were close-ended, classification was not complex.

The classified raw data had to be displayed in compact form for analysis. This was done through tabulation. The tabulation has been done using excel sheet in the computer. All the tables were prepared from the questionnaire using SPSS package specially designed software. Cross-tabulation has also been done for the sake of analysis. For the data analysis various statistical techniques such as regression analysis, percentages and Chi square Test, factor analysis etc. have been employed depending upon the requirements.
As per Groves (1989)\textsuperscript{143}, interpretation and analysis of data is relevantly connected to the operations performed for summarizing the process of collecting data and thereby organizing the same to meet the demands of the research problem. It is also liable to offer research hypothesis or relevant kinds of questions. Data analysis is inclusive of objective material within the researcher’s possession as well his subjective reaction added by desires in order to derive inherent data to resolve research problem. In order to avoid conclusions from insufficient or relevantly noted invalid data, the mode of final analysis should get anticipated under detailed aspects as the plans are made to collect data. It is necessary to analyze the research problems in detail; so that necessary data with solution as well as confirmed methods are used for definite answers. It is the responsibility of the researcher to determine if the selected factors can satisfy the problem of the research. He must decide if the collected sources offer requisite data. This is an effort as well as time consuming aspect in analyzing data and the same depends on the selected research methodology. As the analysis finishes the researcher needs to step back and thereby make assumptions for invented resolutions. It is the role of the researcher to determine perfect analysis with valid internal and external interpretations (David and Mathew, 2002)\textsuperscript{144}. 
3.10.1. Hypothesis testing:

Couper (2000) described that hypothesis testing is a well-defined procedure which supports to decide objectively whether to reject or accept the hypothesis based on the available information from the sample. When a researcher establishes an assumption or hypothesis then the sample statistics will be close to the parameter of hypothesized population. A hypothesis is a formalized procedure that succeeds a standard series of performances. In this way the researcher has a standardized method for calculating the research studies outcomes. Other researchers will understand and identify exactly how the data were evaluated and how the conclusions were reached.

Similarly Dillman and Bowker (2001) in hypothesis testing two kinds of hypotheses are involved. The first kind is called null hypothesis which can be evaluated in terms of probabilities provided by the sample statistics. The second is research hypothesis which is intended to test the research prediction. The null hypothesis is the logical opposite to the research hypothesis. Thus if the null hypothesis is rejected then the research hypothesis is considered acceptable.
3.10.2. Hypotheses:

**H₀₁:** Consumers who prefer BSNL services are not influenced by deposit amount, brand image, tariff rates on SMS and MMS facility, mode of payment, company responsiveness in dealing with customers and regarding quality and performance of service provider.

**H₀₂:** Consumers who are loyal to the BSNL services are not influenced by deposit amount, availability of mobile connection, promotional activities, SMS and MMS tariffs and Image of BSNL.

**H₀₃:** BSNL customers are not satisfied when compare to others service providers in terms of monthly rental charges, charges for cell phone to landlines.

**H₀₄:** Consumers who are satisfied about BSNL services are not influenced by brand image, availability of mobile connection, customer care services, services charges, company delivery on time performance and their commitment to meet their delivery expectations.

**H₀₅:** Promotional activities of BSNL do not have a positive relation with call tariff and network coverage of BSNL in Karnataka.

**H₀₆:** Consumers of Karnataka are not satisfied about BSNL services in relation to brand name, easy process, and signal strength of network coverage.
3.11. STATISTICAL TOOLS EMPLOYED:

The statistical tools that are used for the analysis of the primary data are given below:

- Factorial analysis
- Graphical method
- Simple percentage method
- Mann-Whitney U test
- Chi-square test
- Regression analysis

**Graphical Method:** After the measurements the gathered data are organized, examined and displayed by using different graphical techniques. There are several graphical representation forms such as bar charts, histograms, scatter figures and pie charts.

**Simple percentage analysis:** The analysis of simple percentage is used in comparing between more than two collections of data. In this method the percentages are used to represent relationship percentages can also be used to compare similar terms.

\[
\text{Percentage} = \frac{\text{No. of responses} \times 100}{\text{Total number of responses}}
\]

**Mann Whitney U Test:** The Mann – Whitney U test is non – parametric test that could be utilized in the place of an unpaired t – test. It is utilized to test the hypothesis which is null in that two
samples come from the similar population or otherwise, whether the observations in the one sample be inclined to be greater than the remarks in the other. Even though it is a test of non-parametric it does presume that the two distributions are alike in shape. Even though Mann and Whitney had developed the test of Mann–Whitney U test under the postulation of constant replies with the alternative hypothesis being that one of the distributions is stochastically higher than that of the other, there are numerous other ways to create the alternative and null hypotheses such that the test of Mann–Whitney U test may provide a applicable test (Daymon, 2002).

**Chi-square Test:** The Chi-Square distribution is merely the distribution of the sum of the squares of a set of normally distributed random variables. Its value stems from the fact that the sum of random variables from any distribution can be closely approximated by a normal distribution as the sum includes a greater and greater number of samples. Thus the test is widely applicable for all distributions. A chi-squared test, also referred to as chi-square test or \( \chi^2 \) test, is any statistical hypothesis test in which the sampling distribution of the test statistic is a chi-squared distribution when the null hypothesis is true. Also considered a chi-squared test is a test in which this is asymptotically true, meaning that the sampling distribution (if the null hypothesis is true) can be made to approximate a chi-squared distribution as closely as desired by making the sample size large enough.
3.12 SOFTWARE TOOL USED

The following tools are used to analyze the primary data collected and test the proposed research hypothesis.

**Microsoft Excel 2007:** To produce graphs for the calculated percentages from the gathered primary data Microsoft Excel 2007 is used.

**SPSS:** SPSS is the acronym for Statistical Package for Social Sciences. It is a famous statistical package used in different scientific disciplines. SPSS is used for making statistical analysis in research and social science practices. The most similar area of SPSS uses are product research, marketing research, government research, marketing organizations, medical and health research, companies survey, educational research and so on. The data analysis and management can be handled well with SPSS. Using SPSS the user can make graphs, manipulate data and perform statistical techniques varying from means to regression.

3.13 RELIABILITY AND VALIDITY OF THE RESEARCH

The results obtained by the primary data analysis are validated for correctness with the support of two parameters like validity and reliability of the research.
3.13.1. Reliability:

Reliability is referred as the extent to which a test, measurement procedure or a questionnaire generates common outcomes on repeated trials. Shortly it is the consistency or stability of scores across raters or over time (Sandelowski, 2000). Similarly (Hooley et al. 2008) has mentioned that reliability is the degree to which the measures yield stable results and are free from error i.e. the measurement procedure stableness. If a procedure or measurement device stably assigns similar score to objects or individuals with common values, the components is assumed reliable. Reliability involves the reproducibility or consistency of scores test i.e., the degree to which one can expect similarly stable individual's deviation scores across testing situations on parallel or verifying components. Reliability is adopted in this study by ensuring that no question is answered twice by the same respondent and all respondents have answered all the questions in the questionnaire.

**Table.3.1 - Reliability Statistics**

<table>
<thead>
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<th>Cronbach's Alpha</th>
<th>N of Items</th>
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<td>.827</td>
<td>17</td>
</tr>
</tbody>
</table>

**Scale Statistics**

<table>
<thead>
<tr>
<th>Mean</th>
<th>Variance</th>
<th>Std. Deviation</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>51.91</td>
<td>67.044</td>
<td>8.188</td>
<td>17</td>
</tr>
</tbody>
</table>
**Inference:** Cronbach’s alpha has been run to check their reliability. The above table displays some of the results obtained. The overall alpha for the all items is 0.827, which is very high and indicates strong internal consistency among the given items.

### 3.13.2. Validity:

According to Bryman and Bell (2003) Questionnaires are referred to always lack validity for many reasons. Several individuals may lie; give responses that are desired and so on. Reliable measurement instruments are free of random error. Validity is a degree to which an instrument or test measures what is needs to measure can be classified as content, criterion, logical or construct validity. Similarly Myers (2009) has mentioned that validity of measurement denotes the degree to which the scores from the test or instrument measures what it is supposed to measure. Validity is adopted in this study by ensuring that the questions in the questionnaires are relevant to that of the proposed research objectives and literature review.

### 3.14. ETHICAL CONSIDERATIONS

Ethics is an important aspect in any research. There has to be some basic ethics to be adopted in any research. In the study ethics is handled by the researcher by keeping the answers acquired strictly confidential. Besides, a prior permission was taken by the researcher from the target respondents before conducting the research.
3.15. RESEARCH LIMITATIONS

Every care has been taken to study the stated objectives in detail; however the study has been subjected to the following limitations.

- Since the study is a sample based and undertaken in Karnataka, the findings of the study may have the limitation of generalization to the entire population.
- Despite the care taken to understand the feelings and opinions of the respondents, some articulation error may have crept into the study.
- The areas selected were few and as such the scope of the study is limited.
- Since the sample is represented by various strata of the universe, they may be biased in certain responses.
- The conclusion may or may not be generalized since the study is confined to Karnataka only.

In spite of the above limitations, the study throws some light on the consumer behaviour towards telecom service providers in Karnataka.