Chapter: 4  Research Methodology

4.1 Introduction

This chapter gives an overview of the research methodology undertaken by the researcher in order to meet the aim and objectives of the study. The contents of this chapter give an idea about the research design, sample design, survey design; statistical tools used and interpretation methodologies incorporated in the research.

4.2 Aims and Objectives of the study

The gap in automotive segmentation from what it is to what it is going to be is really crucial due to the nature of industry. The historical bases of segmentation such as Demographic, Geographic etc., will not help the industry to sustain in new market place.

New trends in market such as price sensitivity of customer along with environmental safety concern are going to make a real competition in market, and it will force industries to broaden their horizon of designing and making a new automobile in order to fulfill maximum need of customer in particular time.

As it mentioned earlier Pune a hub of automobile industries in India inviting lots of worlds leader into competition, and current bases of segmentation is no longer going to be the competitive advantages for most of the industries, and it is crucial to think about the new base of segmentation in order to sustain in this competitive market place. There are a very few academic research in order to find out what is going to be the bases of segmentation in future and how a company can compete with other based on these advantages.

In this research work we will try to find out the answer of this question that what is going to be the changes on certain factors of segmentation? And how a company can compete in that market place based of these competitive advantages?
4.3 Purpose of the study

During the second half of the 1990's, the globalization of the automotive industry has greatly accelerated due to the construction of important overseas facilities and establishment of mergers between giant multinational automobile manufacturers. Over the years, it is being observed that Asia is emerging as a global automotive hub. Exports of automobiles including components from Asia are also increasing by leaps and bounds. Asia has become the major consumer as well as supplier of automobiles. With increasing competition in the automobile sector manufactures are emerging with new ideas everyday in order to gain competitive advantage and stand as a leader in the market place.

This study is intended to explore the bases for market segmentation, an important marketing tool that are possible to be introduced in the automobile market in order create a greater demand for product, gain competitive advantage and increase satisfaction. This study has chosen, Pune city, which is one of the greatest automobile markets situated in Maharashtra, India as the research target in order to fulfill the objectives of the study.

4.4 Research Framework

Pune is one of the premier industrial centers of India. It is home to one of the world's three largest two-wheeler manufacturers, Bajaj Auto. Other global automobile names like Telco, Mercedes Benz and Bajaj Tempo also have huge manufacturing facilities here. Apart from the auto giants, a large number of engineering, electronic and electrical industries have set up base in the large, medium and small scale sectors. The industrial township of Pimpri Chinchwad, adjacent to the main city, is dotted with over 4,000 manufacturing units and more than 83 automobile companies which gives us an immense opportunity to tack our sample. It has been planned to collect the responses from nearly 50% of total sample which is 40 companies out of 83, in order to find out the answer for the proposed research question.
4.5 Objectives of the study

This research will focus on answering the following questions:

5. To study the role of segmentation base in automobile industries.

6. To study the current parameters of segmentation in automobile industry in India.

7. To find whether the focus on parameters of segmentation in automobile industry in India has changed.

8. To study the changes that automobile industry in India has encountered.

4.6 Hypothesis

The above mentioned objective and research questions lead to the following hypothesis:

4.6.1 Hypothesis 1

Null Hypothesis Ho: There is no change in the focus of parameters of segmentation in automobile industries in India

Alternate Hypothesis H1: There is a change in the focus of parameters of segmentation in automobile industries in India-a

4.6.2 Hypothesis 2:

Null Hypothesis Ho: Customer demand has not changed the focus of parameter of segmentation in automobile industries in India

Alternate Hypothesis H1: Customer demand has changed the focus of parameter of segmentation in automobile industries in India-p

4.6.3 Hypothesis 3:

Null Hypothesis Ho: Competitiveness has not changed the focus of parameter of segmentation in automobile industries in India
Alternate Hypothesis H1: Competitiveness has changed the focus of parameter of segmentation in automobile industries in India

4.6.4 Hypothesis 4:

Null Hypothesis Ho: Customer satisfaction has not changed the focus of parameter of segmentation in automobile industries in India

Alternate Hypothesis H1: Customer satisfaction has changed the focus of parameter of segmentation in automobile industries in India

Limitations of the study

The limitations of study are mainly related to the broadness of the topic under investigation, generalizability issues, lack of homogeneous organizational experiences, time constraints and the limited access to information. Within the core processes of sourcing, this study narrows its scope to focus upon the sample size is another limitation of this study. The sample consists of well-established large Automobile industries in Pune, which may subject it to regional clustering bias. Samples of small or mid-sized firms might provide different sets of results. The results from a larger and heterogeneous sample might provide a better basis to completely revise the theoretical model. The response rate is another limitation; however, given the complexity and subject matter, this is considered reasonable.

4.7 Significance of the study

In light of the paucity of the present state of empirical research in the marketing segmentation in automobile industries, this is one of the first empirical studies to find out the new bases of segmentation in automobile industries in a larger research base. The study represents a model as a new perspective to segmentation research by improving the discriminatory power of existing variables. This research is also intended to increase the awareness of the strategic benefits that arise from new bases of segmentation

4.8 Research Strategy and Design

The following figure shows the types of research applied by researchers for any study.
There are many types of research some of them are:

4.8.1 Pure Fundamental or Theoretical Research

According to Fox W (2008) Developing scientific theories or basic principles are called pure or basic or fundamental research [2]. Pure research is the research concerning principles of laws or rules. This type of research is original or basic in character. An imagination and painstaking research worker with his qualities of honesty and integrity and his lust for the search of truth, makes persistent and patient efforts to discover something new to enrich the human knowledge in a fundamental fashion is known as fundamental research.

4.8.2 Applied Research

This type of research is concerned with the solution of particular problems, while pure research discovers principles and law, applied research discovers their applications in order to tackle some social problems. Hence applied research is concerned with the applied aspect of life. The applied research is conducted to test the empirical content or the basic assumptions or the very validity of theory under given conditions.
4.8.3 Action research

Blessing L T M (2009) says that it is a research through which launching of a direct action with the objective of obtaining workable solution to a given problem [3]. Action research is spread over different phases such as a base live survey, where all the possible information of research interest is collected to enable the researcher to acquaint himself with the existing or operational situations. In action research the researcher appears as a participant rather observer and therefore is actively and even emotionally involved in the results and their application.

4.8.4 Evaluation research

Neuman L (2007) says that this type of research is a product of developmental programming which has been adopted on a very large scale of recent years. [4] It aims to evaluating programs that have been implemented. Evaluation means some sort of measurement of the end product and impact of an effort in the light of the stated goals for which the program undertaken. Evaluation is held to mean comprehensive concept of measurement.

4.8.5 Coordinated/Interdisciplinary Research

This research is characterized by exchange of views or ideas from one discipline to another. The widen facts become uncovered quicken and discoveries are made fruitful and thereon integrated development because of contribution of various disciplines. If different disciplines work in coordination, a conductive and productive research may come out.

This study makes use of Descriptive research.

Descriptive research, as the name suggests, describes the attitudes and behaviors observed during the investigation. This approach is in many ways converse of experimental research with respect to advantages and disadvantages. It takes place in a natural, real-life settings. The main aim of descriptive research is to discover new facts about a situation, people, activities or events, or the frequency with which certain events occur. Descriptive research
can be conducted using a range of methods like surveys and correlational studies to explore the relationship between variables.

This study will gather information such as; The current nature of segmentation, Customer demand for product, Significant of new bases of segmentation, Segmentation priorities, Advantages of segmentation as pursued by the managers, Bases of segmentation adopted by the organization, Importance of segmentation as pursued by the organization, Product customization, Influence of competition on segmentation, Influence of attitude on segmentation, Influence of segmentation on customer satisfaction, Status of customer satisfaction, Segmentation for competitive advantages, Changes of buying behavior of Indian customer and Factors influencing buying behavior.

4.9 Approaches of Research

There are two types of research

1. Qualitative research and

2. Quantitative Research.

The below table shows the differences between qualitative and quantitative research:

<table>
<thead>
<tr>
<th>Comparison points</th>
<th>Qualitative Research</th>
<th>Quantitative Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus of research</td>
<td>Understand and interpret</td>
<td>Describe, explain and predict</td>
</tr>
<tr>
<td>Researcher development</td>
<td>High researcher is participant or catalyst</td>
<td>Limited; controlled to prevent bias</td>
</tr>
<tr>
<td>Research purpose</td>
<td>In depth understanding, theory building</td>
<td>Describe or predict; build and test theory</td>
</tr>
<tr>
<td>Sample design</td>
<td>Non probability; purposive</td>
<td>Probability</td>
</tr>
<tr>
<td>Sample size</td>
<td>Small</td>
<td>Large</td>
</tr>
<tr>
<td>Research design</td>
<td>May evolve or adjust during the course of the project, consistency is not expected, involves</td>
<td>Determined before commencing the project, consistency is critical, involves either a cross sectional or</td>
</tr>
</tbody>
</table>
longitudinal approach.  

<table>
<thead>
<tr>
<th>Participant preparation</th>
<th>Pre-tasking is common</th>
<th>No preparation desired to avoid basing the participant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data types and preparation</td>
<td>Verbal or pictorial descriptions, reduced to verbal codes.</td>
<td>Verbal descriptions, reduced to numerical codes for computerized analysis.</td>
</tr>
<tr>
<td>Researcher sponsor involvement</td>
<td>May participate by observing research in real time or via taped interviews</td>
<td>Rarely has either direct or indirect contact with participant</td>
</tr>
<tr>
<td>Data security</td>
<td>More absolute given use of restricted access facilities and smaller sample sizes</td>
<td>Act of research in progress is often known by competitors; insights may be gleaned by competitors for some visible and field based studies.</td>
</tr>
</tbody>
</table>

**Table 4.1 Differences between qualitative and quantitative research**

**Source:** Dawson C (2002), *Practical Research methods*, How To Books Limited, UK.

### 4.9.1 Qualitative research

According to Bless C (2000) Qualitative research is a loosely used term. It means that the research findings are not subject to quantification or quantitative analysis. [5] Qualitative research is used to provide rich narrative descriptions of phenomena that enhance understanding with words. Qualitative research focuses on in-depth understanding of social and human behavior and the reasons behind such behavior. Qualitative researchers are interested in understanding, exploring new ideas, and discovering patterns and behavior.
4.9.2 Quantitative Research

Dawson C (2002) says that Quantitative research is closely associated with deduction, reasoning from general principles to specific situations. [1] Quantitative researchers place great value on outcomes and products. Quantitative research because of its deductive nature tends to be more theory based from the onset. Quantitative researchers look for more context free generalizations. They are more attuned to standardized research procedures and predetermined designs. Quantitative research is done to determine relationships, effects and causes. Quantitative research has their own characteristics based on different purposes and paradigms underlying the research.

This research mainly use quantitative research approaches.

4.10 Research Design

Richey R (2007) says that a research design is a plan or strategy for conducting the research. [6] Research design deals with the matters such as selecting participants for the research and preparing for data collection activities that comprise the research process. The need for research design is implicit. There must be a plan by which the specific activities of the research can be conducted and brought to successful closure. The purpose of research design is to provide answers to research questions, control variance, collect information, predict the availability of research technique, Explain the problem and reason, find the time factor available for research and finally calculate the availability of money for research.

A traditional research design is a blueprint or detailed plan for how a research study is to be completed, operationalizing variables so they can be measured, selecting a sample of interest to study, collecting data to be used as a basis for testing hypotheses and analyzing the results. A research design is a procedural plan that is adopted by the researcher to answer questions validly, objectively, accurately and economically.

4.11 Sample Design

The sample design used in this study is convenience sampling. According to Pathak R P (2008) convenience sampling is a non probability sampling technique. [7] In this type of
sampling a convenience sample is obtained when the most convenient or accessible units of population are selected. The choice of the sample is left completely to the convenience of the investigator. The investigator obtains a sample according to his convenience. The results of the convenience samples are estimated and there is no way that the possible errors can be quantified. It is therefore suggested that convenience sampling should not be used in both descriptive and casual studies. This method is useful in testing the questionnaire.

The population for the study comprised of:
Total sample size is comprised of managers (including marketing managers and persons in the marketing department who deals with marketing issues of company and aware of segmentation) of 30 companies out of 53 and 200 customers in order to find out the answer for the proposed research question.
Sample has been collected from 100 managers and 200 customers of automobile industries.

4.11.1 Size of sample survey

Pune is one of the premier industrial centers of India. The industrial township of Pimpri Chinchwad, adjacent to the main city, is dotted with over 4,000 manufacturing units and more than 83 automobile companies. It has been planned to conduct a quantitative study with 43 managers working with automobile companies in an around Pune and, And customers who own a car aprox.150, The master list including details of marketing or sales managers of the automobile companies will obtain from the association of automobile industries, and our research center, The sample of 38 managers and 135 customer will select for survey purpose.

4.11.2 Sampling plan

The data collection method involved in this study was questionnaire and interviews from customers. Questions structured including total 26 questions for manager and 31 question for customer. The data has been collected from the sample respondents by either distributing the questionnaire in person or emailing them through electronic mails.
The data collected from the sample respondents by:

Distributing the questionnaire in person, 200 questionnaire for customer and 100 for manager has been distributed. Out of them 135 (with response rate of 67.5%) correct questionnaire of customer and 38 (with response rate of 38%) questionnaire of manager has been selected for the purpose of data analysis.

4.11.3 Type of study

This study is descriptive, descriptive research can be conducted using a range of methods like surveys and correlational studies to explore the relationship between variables.

In this study, we gathered information such as: The current nature of segmentation, Customer demand for product, Significant of bases of segmentation, Segmentation priorities, Advantages of segmentation as pursued by the managers, Bases of segmentation adopted by the organization, Importance of segmentation as pursued by the organization, Product customization, Influence of competition on segmentation, Influence of attitude on segmentation, Influence of segmentation on customer satisfaction, Status of customer satisfaction, Segmentation for competitive advantages, Changes of buying behaviour of Indian customer and Factors influencing buying behaviour.

4.11.4 Sampling technique

The sampling technique used in this study is Random sampling, in random sampling, each item or element of the population has an equal chance of being chosen at each draw. A sample is random if the method for obtaining the sample meets the criterion of randomness (each element having an equal chance at each draw). The actual composition of the sample itself does not determine whether or not it was a random sample, Sampling will done without replacement.

4.11.5 Sample size determination

Sample size determined using: Mean and proportion method
4.11.6 Time dimension

Time dimension will adopt multiple cross sectional, a type of research design in which two or more samples of respondents and information from each sample is obtained only once. Often, information from different samples is obtained at different times over long intervals. These types of designs allow comparison at the aggregate level but not at the individual respondent level. Information for this study opted from two samples that are:

1. Manager and
2. Customers of automobile industries

4.11.7 Research environment

The research environment of this study is Field setting; Field setting is the collecting the data by doing a field survey, analyzing them & drawing a conclusion, the study will carry out under the actual environment condition.

Fieldwork is scholarly work that requires first hand observation, recording or documenting what one sees and hears in a particular setting - a rural artisan community, a city market place, hunting and gathering with a highland tribe or the plush interiors of a corporate head office. The term is mainly used in the social sciences studies, such as in anthropology, linguistics, sociology, management and economics. It is also known as Participant Observation. “Participant observation is a structured type of research strategy. It is a widely used methodology in many disciplines, particularly, cultural anthropology, but also sociology, communication studies, and social psychology. Its aim is to gain a close and intimate familiarity with a given group of individuals (such as a religious, occupational, or sub cultural group, or a particular community) and their practices through an intensive involvement with people in their natural environment, usually over an extended period of time. The method originated in field work of social anthropologists, especially the students of Franz Boas in the United States, and in the urban research of the Chicago School of sociology.”

Edward J. Nell (1998) argued; Fieldwork means finding out what people actually do, how they actually think and behave, and what they mean when they say something. [8]
Fieldwork calls for participation; to know the meaning of a social practice it is necessary to experience it in some way. It may be possible to gain an understanding imaginatively, or through discussions with participants, (e.g. Lawrence Klein, 1982). [9] But participation ensures that the observer directly experiences the social practice, and can check the meaning and appreciate the nuances by asking other participants.

The advantages of fieldwork are that people are closer to real world conditions and that the business can design the research in the best way to discover the particular information required. Business can also be sure that the information gathered is up to date.

Disadvantages of fieldwork are that it takes time for the business to gather the information and that it is likely to be of a small sample size due to the high costs and time it takes.

4.12 Sources of information

There are two types of data used in any research. They are:

1. Primary data
2. Secondary data.

4.12.1 Primary Data

Srivastava (2011) says that Primary data does not actually exist until and unless it is generated through the research process as part of the consultancy or dissertation or project. [10] Primary data is closely related to and has implications for the methods and techniques of data collection. Primary data are the data that the researcher generates they can be considered to be specific to the research project at hand. Primary data tend to be more reliable of the two types of data.

4.12.2 Secondary Data

According to Khurana S K (2009) Secondary data is the data that were collected by someone else for a different purpose. [11] When gathering secondary data every source of information used must be identified in the paper. Secondary data is often the starting point
of data collection in as much as it is the first type of data to be collected. Secondary data are cheaper and quicker to gather. A researcher using secondary data must make sure that data are reliable, pertinent to the research study and adequate. The secondary data can be obtained from the data available in published research journals, reports, and books open to the public in libraries, search of data generated within the organization through reports, log books, records of unions, minutes of meetings, proceedings, accounting documents, home journals and so on, computer search of databases and the World Wide Web.

Secondary data relatively takes less time and are less expensive. Secondary data help to understand gaps in the existing knowledge and new research questions. The secondary data may produce deliberate or unintended bias. Secondary data are useful to undertake exploratory, descriptive and explanatory research. On the basis of secondary data the researchers may formulate the problem and design a new research project.

Readily available information will collect through both internal and external sources, Sources such as books on market segmentation, marketing research, Business magazines and journals, Internet, publication from syndicate organization, company record and publications.

### 4.13 Data Collection

The data collection method involved in this study is questionnaire. Questions are non designed, formal, structured including total 26 questions for manager and 31 question for customer, and Questions including: Dichotomous, Rank order, Interval scale, multiple choices.

McNabb D E (2010) says that questionnaires are preferred in most surveys because they are less expensive. [12] Skills required to administer them are also less than what is required for interviewing. Large samples can be dealt with simultaneously in questionnaires as mailing as possible. The impersonal and standardized formats of questionnaires have uniformity. Careful planning and construction of the questionnaire is a critical step in research. Questionnaires can be used to gather information about large numbers of respondents or small groups. A questionnaire has many advantages. The greatest of these is
the considerable flexibility of the questionnaire. Questionnaires can be custom designed to meet the objectives of almost any type of research project. Researchers can also purchase the rights to employ many different types of prepared questionnaires. Questionnaires can be designed to gather information from any group of respondents. Questionnaires can be short or long, simple or complex, straightforward or branched. Questionnaires can be designed to determine what people know, what they think, or how they act or plan to act.

Questions of this study Structured, Questions are limited probing formulized, standard and structured, the purpose of questions is to extract straightforward answers to a set of close ended questions.

### 4.14 Method of data analysis and interpretation

Data Analysis in Qualitative research begins soon after data collection begins, because the researcher checks on working hypotheses, unanticipated results and the like. In fact data collection and data analysis usually run together, less data are collected and more analysis is produced as the research progresses. There is considerable overlap of these steps in practice. Qualitative data analysis requires organizations of information and data reduction. The data may suggest categories for characterizing information. Comparisons can be made with initial theories or working hypotheses. Early data collection may suggest hypotheses or theory and then more data might be collected to support, disconfirm or extend the hypotheses or theory. Analysis in qualitative research is a process of successive approximations towards an accurate description and interpretation of the phenomenon.

In Quantitative research Formula and modeling will use to generalize the statements, and will use Statistical analysis, Statistical analysis is used to test hypothesis, generalization are based on the finding of the representative sample, data will be analyzed using simple percentage, cross tabulation, co-relation, regression, multiple response analysis, chi-square, using SPSS and Mathematical analysis such as Formula and modeling will use to generalize the statements.
4.15 Hypotheses Testing

Hypothesis is usually considered as the principal instrument in research. Its main function is to suggest new experiments and observations. In fact many experiments are carried out with the deliberate object of testing hypotheses. Decision makers often face situations wherein they are interested in testing hypotheses on the basis of available information and then take decisions on the basis of such testing. Thus hypothesis testing enables us to make probability statements about population parameters. The statistical tool used for testing the proposed hypothesis in this thesis are, Independent sample T-test, Cluster analysis, Chi-Square Test of contingency, Pearson Correlation, Multiple regression analysis using backward method and mean rating deference’s.
References

1. Dawson C (2002), Practical Research methods, How To Books Limited, UK


