CHAPTER 4: RESEARCH METHODOLOGY

4.1 Research Design

The purpose of the current descriptive research was to carry out a comparative analysis of Generation X and Generation Y customers with respect to their psychographic variables while purchasing the household electrical appliances. The psychographic variables considered for the study are attitude, personality and lifestyle. The household electrical appliances selected for this study were Television, Fridge, Air conditioner and Washing Machine.

Pilot study was carried out. Content validity and reliability test were done which suggested that the instrument used for the study was appropriate. Based on the purpose of the study a research framework was designed. Data about the attitude, personality and lifestyle of Generation X and Generation Y customers while purchasing the selected household electrical appliance was collected for analysis.

The study area for this research was municipal corporation area of Pune city (in Maharashtra, India).

This chapter includes research design, research type, research approach, scales used for measurement, population, sample, tools and techniques etc.

The Research Questions for the study were:
1. Do the Generation X and Generation Y differ based on the Attitude, Personality and Lifestyle parameters while purchasing the selected household electrical appliances?
2. Is there a difference between Attitude, Personality and Lifestyle of Generation X and Generation Y customers while purchasing the selected household electrical appliances?
3. Whether the 30 variables defining the Attitude, Personality and Lifestyle can be reduced to a manageable size (factors)?
4. Do the Generation X and Generation Y customers differ based on the factors generated by the data reduction technique?
4.2 Type of Research

This study compares Generation X and Generation Y customers on the basis of their psychography while purchasing the selected household electrical appliances. The problem was discovered with the help of a thorough review of literature which led to the formulation of working hypotheses. The population and sample design were drawn with the help of scientific and statistical methods. Questionnaire was designed with and the sampling method was established as Non-probability –Convenience sampling. Variables were clearly defined. Then the study was carried out with clear objectives and hypotheses that were formulated on the basis of results of the pilot study. Data was then collected, tabulated, edited and coded. Data was then processed and analysed using statistical tools and hypotheses were statistically tested. This makes the current study of descriptive type.

4.3 Research Approach

The research is quantitative in nature. The independent variables of: attitude, personality and lifestyle have been measured using five-point Likert scale and have been converted to quantitative values.

4.4 Scale used for Measurement of Variables

Generation X was coded 1 and Generation Y was coded 2. The independent variables were the 30 metric scaled variables measuring the psychographics. Each variable was measured using a five–point Likert scale (1-strongly disagree, 2- somewhat disagree, 3-neither agree nor disagree, 4- somewhat agree, 5- strongly agree).
4.5 Population and Sample

The population and sample size were determined using scientific methods.

4.5.1 Population Determination

Since the given study deals with the study of buying behaviour of Generation X and Generation Y customers, the target population are the people born in 1961 to 1981 (Generation X) and 1982 to 1987 (Generation Y) customers of Pune city.

Population of Generation X and Generation Y

1. Population of Pune city 3500000 (2011)\textsuperscript{130}

2. According to the socio-economic study conducted by PMC (2011)\textsuperscript{131}
   i. 40 percent of the total population falls in the age group of 21-40 years,
   ii. 32 percent falls in the age group of below 20 years.
   iii. 20 percent of the total population is 40 plus
   iv. Senior citizens constitute around 8 percent of the total population.

3. Total children (0-6) in Pune city around 10.5\%\textsuperscript{132}

Therefore, from the above it can be derived that the population of Generation X and Generation Y of Pune city is 21 lakhs approx. i.e. approx. 60\% of the entire Pune City’s population consists of Generation X and Generation Y.

4.5.2 Sampling

Following is the sampling method and sample size that has been applied to this study.

4.5.2.1 Sampling Method

Since the list of the entire population is unknown, the sampling method used for the research is non-probability sampling. Convenience / deliberate sampling technique was used to select the sample.

4.5.2.2 Sample Size

Since the population of Pune city is 21 lakhs, according to The Research Advisors (2006) & Krejcie & Morgan (1970) (as shown in the Appendix C of the Annexure) and with 0.05 margin of error the sample size considered for the study is 384 customers. Therefore 192 Generation X and 192 Generation Y customers have to be considered for examination for the said research. The actual sample of Generation X was 205 and Generation Y was 194 which were well above the required number.

4.6 Data Collection Method
The data was collected scientifically and systematically. Following are the details regarding the Sources of the data.

4.6.1 Sources of Data Collection
The source of data for the research was a Primary Source.

4.6.1.1 Primary Source
Primary source of data is the data that is collected first hand by the researcher. e.g.: interviews, questionnaire, observation, discussion, video photography.
A questionnaire was prepared by referring to various research papers and keeping in mind the objectives of the study. It was then administered to the customers visiting the various sales outlets (displaying Television, Fridge, air conditioner and Washing Machine) of Pune city.

4.6.1.2 Secondary Source
Secondary source of data is the data which is already available and found out by somebody else. e.g.: Books, Journals, Magazine, and Company Publications such as Newsletters, Advertisement, Brochure, Annual Reports, Company Profiles and Websites.
Secondary data in the form of research papers were referred for the preparation of questionnaire. The questionnaire prepared by Enrique J. Fernandez (2002)\textsuperscript{135} for his dissertation on the consumer attitudes and behavioural patterns of Generation Y teenage consumers of Puerto Rico, and the one used by Talha Harcar and Erdener Kaynak (2004)\textsuperscript{136} for the study of the Lifestyle orientation of US and Canadian consumers were referred to design the questionnaire for this research.

4.6.1.3 Data Collection Period
February 2013 to August 2013

4.6.2 Instrument

To address the research questions, a two pages questionnaire was prepared. There were around 40 questions in the questionnaire before the content validity analysis and pilot study. After content validity and pilot study ten irrelevant questions were removed and a questionnaire with 30 questions was used for data collection and analysis. Pilot study and content validity analysis helped in the preparation of final questionnaire. The questions were closed ended where the user had to select the appropriate option. Altogether the questionnaire has three logical sections namely:

**Respondents Profile** – captures details of the customers regarding the type of customers (Generation X or Generation Y), educational qualification, marital status, employment status, number of dependents, type of house and mode of its purchase, etc.

**Part A** – consisting of the details regarding the selected household electrical appliance and the mode of purchase used while purchasing these appliances.

**Part B** - consisting of the 30 statements (variables) capturing the responses about the attitude, personality and lifestyle of the customers. Each variable was measured using a five–point Likert scale (1-strongly disagree, 2- somewhat disagree, 3- neither agree nor disagree, 4- somewhat agree, 5- strongly agree).

4.6.3 Pilot Study

A pilot study was conducted so as to test and evaluate the survey questionnaire for its readability, relevance, and accuracy of its contents. Sample for the pilot study was drawn by using convenient sampling. The pilot study helped to remove minor problems in questionnaire like language problem, spelling mistakes etc. The pilot study helped the researcher in finalizing the flow of the questions, language, clarity of the questions, time required to fill the questionnaire etc. The primary intention of pilot study was to formulate the statement of hypotheses.
4.6.4 Content Validity

Validity is defined by Hair, et al. (1995)\textsuperscript{137} as "the ability of a construct's indicators to measure the concept under study", "the degree to which a measure accurately represents what is supposed to" and "it is determined to a great extent by the researcher"

The validity of the questionnaire was not required to be done since the variables to be measured were latent variable: Attitude, Personality and Lifestyle.

A summated scale was used to measure these latent variables. 13 items scale measured Attitude, 7 items scale measured Personality and 10 items scale was used to measure Lifestyle.

Content validity was performed by subject matter experts a method of measuring content validity that was developed by C. H. Lawshe (1975).

By this method content validity of the questionnaire can been judged. A panel of eight experts was requested to do the content validity of the research instrument. The panel members who participated in content validity were very senior and experienced people in the area of marketing and management of Pune city.

Criteria for Measuring Content Validity were based on three parameters for each of the items in the questionnaire. The experts judged whether each question in the questionnaire was Essential / Not Essential, Relevant / Not Relevant, Clear / Not Clear. Some panel members suggested a few changes that were incorporated accordingly.

4.7 Hypotheses Formulation

There are four statements of hypotheses in this study. The hypotheses statements formulated are predictive statements capable of being tested by scientific methods. The statements of hypotheses were clear and precise in nature and which were be put to test by using statistical methods. The Statements of hypotheses were formulated after conducting the pilot study.

4.7.1 Hypotheses

H1: Generation X and Generation Y differ significantly based on the following Attitude, Personality and Lifestyle parameters while purchasing the selected household electrical appliances.

H2: There is a significant difference between Attitude, Personality and Lifestyle of Generation X and Generation Y customers while purchasing the selected household electrical appliances.

H3: Significant correlation exits among variables under consideration for data reduction.

H4: Generation X and Generation Y customers differ significantly based on the factors generated by Principle Component Analysis.
4.8 Statistical Tools and Techniques

This section discusses the details regarding the statistical tools and techniques that were employed for this research.

4.8.1 Statistical Techniques

This study uses various statistical methods to analyse the collected data and to test the four hypotheses.

1. To test hypothesis 1, Independent samples $t$-test was used for 26 variables that passed the test of normality and Mann-Whitney Test was used for the 4 variables that failed to pass the test of normality.
2. To test hypothesis 2, Independent samples $t$-test was used.
3. For testing hypothesis 3, Factor Analysis using Principle Component Analysis was employed.
4. To test hypothesis 4, Independent samples $t$-test was used.

4.8.2 Statistical Tools

In this study data was tabulated using Microsoft Excel application where the analysis was carried out using Statistical Package for Social Sciences (SPSS), version 20.
4.9 Mechanism to assure Quality of the Study

Quality of this study can be assured due to its scientific and systematic nature. All steps of research methodology like Defining Research problem, Research Design, Population, Sample, Measurement Scales, Data Collection tool, Data Analysis, Hypotheses testing, etc have been followed scientifically and systematically. The need for the study has been justified by referring to previous literature.

Data collection instrument of the study has been created by referring various studies conducted by previous authors. Data collection instrument has been evaluated by subject matter experts for its relevance and clarity. The hypothetical statements are formulated based on the pilot study. Questionnaire has been shown to various subject experts before data collection. To measure responses of the customers an appropriate scale was used.

Hypotheses of the study have been tested using statistical methods like independent sample $t$-test, Mann-Whitney Test and Factor Analysis by using Principle Component Analysis. To check the reliability, Cronbach Alpha method was used which showed satisfactory and acceptable results. The Test of normality was performed to examine the normal distribution of data. All the findings are backed by statistical methods.
Table 4.1: Research Methodology at a Glance

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
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<tbody>
<tr>
<td>Field research</td>
<td>With the help of questionnaire</td>
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<tr>
<td>Descriptive</td>
<td>Describes the state of affair as they exist. It had as statement of problem/research questions. It has some research hypotheses. The hypotheses were tested using the statistical tools.</td>
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<tr>
<td>Quantitative</td>
<td>Research designed to find out what the customers think and what they feel. Attitude and opinion research.</td>
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<tr>
<td>Sampling</td>
<td>Non-probability: deliberate/convenience sampling</td>
</tr>
<tr>
<td>Sample size</td>
<td>399 (205 Generation X and 194 Generation Y)</td>
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<tr>
<td>Data collection Instrument</td>
<td>Questionnaire</td>
</tr>
<tr>
<td>Statistical Tool used</td>
<td>SPSS 20</td>
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<tr>
<td>Statistical Test</td>
<td>Independent Samples t-test, Mann-Whitney Test, Factor Analysis using Principle Component Analysis.</td>
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