CHAPTER-3

RESEARCH METHODOLOGY

Research methodology comprises of methods used to analyze quantitative and qualitative aspects. The chapter includes the research design selected for the purpose of the study. It describes the hypothesis, sample design and presents the background of the selected branded food products for the study. It also defines the tools and techniques applied to measure the variables and their relationships.

Quantitative aspect of study includes questionnaire, primary source of data collection. Structured questionnaires with open and close ended questions were used for collecting the data. Qualitative aspect deals with rank order rating scale like Likert scale or other ranking techniques.

The qualitative research method aims at explaining and describing a certain phenomenon. It is ideal to interact with the respondents in order to obtain their opinions and description of their life experiences to get their views on the consumption of branded food products.

3.1 Statement of the Problem

Consumer behaviour certainly is taken as an important part of Marketing. Consumer behaviour and Marketing both are interconnected with each other. In the market, a product should be capable of easy identification by consumers. Once a manufacturer has decided to introduce a new product he will give his product an identity i.e. a Brand Name. Brand has important role in the creation of demand in today’s market. Due to its effective use different brands are available in the market. For e.g.: Kwality Walls (Ice-cream), Cremica (Biscuits), Red Label (Tea), Basmati (Rice) etc.

A brand's value is a function of the consumer's perception, his/her behaviour towards it. If the consumer has a higher positive behaviour towards a brand, then he will be willing to pay a premium to buy it. So, it becomes necessary to know about the, ”Consumer Behaviour towards Branded Food Products”.

Keeping in view the significance of consumer behaviour in buying products and the importance of brand in making buying decisions the present study has been undertaken. As
different types of consumers in the market react differently to different products, brands and their prices, the study has tried to analyse such differences in behaviour of rural and urban consumers. A survey of literature has highlighted various studies on consumer behaviour. An effort has been made to corroborate the findings of the past researches with the present study.

3.2 Objectives of the Study
The present study has certain objectives which are as under:
1. To understand the demographic features of the consumers in relation to rural and urban population
2. To examine the level of consumer awareness and brand preference for the selected products.
3. To ascertain the factors affecting consumer buying decisions in relation to rural and urban population

3.3 Research Hypothesis
To achieve the objectives of the study on consumer behaviour towards branded food products following null hypothesis had been formulated.

**Hypothesis I:** There was no significant difference in the age, education, occupation and income of the consumers in rural area and urban area.

**Hypothesis II:** There was no significant association between place of living and demographic features (educational level, occupation, income level) of consumers.

**Hypothesis III:** The rural and urban respondents differ significantly on preferences of brands for selected food products.

**Hypothesis IV:** No difference existed between rural consumers and urban consumers in determining the factors affecting the purchase decision.

3.4 Sampling Design and Data Collection
Taking into account the above stated objectives, the researcher has adopted the following procedure to collect data on consumer behaviour towards branded food products.

(a) **Selection of branded food products**

To understand the consumption pattern of consumers, a meeting was conducted with nearby consumers and the sellers considering the availability and popularity of products and their brands. Based on their information, 5 food items with 5 brands of each of them were selected. The selected food items and their brands are shown in the table 3.1 below:

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Products</th>
<th>Brand name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ice-Cream</td>
<td>KwalityWall, Vadilal, Amul, Basant, Motherdiary</td>
</tr>
<tr>
<td>2</td>
<td>Tea</td>
<td>Tata, Redlabel, Tajmahal, Lipton, Tazza</td>
</tr>
<tr>
<td>3</td>
<td>Biscuits</td>
<td>Britannia, Priyagold, Parle-G, Tiger, Mariegold</td>
</tr>
<tr>
<td>4</td>
<td>Chips</td>
<td>Uncle chips, Bingo, Lays, Kurkure, Funflip</td>
</tr>
<tr>
<td>5</td>
<td>Juice</td>
<td>Real, Tropicana, Appy, Slice, Frooty</td>
</tr>
</tbody>
</table>

(b) **Sample selection**

The sample consisted of 300 respondents of Ambala district. This total sample was further classified in urban area and rural area taking 150 respondents from each category. All of these respondents were selected randomly. As there is the difference in the taste, preferences and behaviour of urban and rural respondents so the study was conducted both in rural and urban areas.

In order to arrive at meaningful conclusions, the respondents were classified on the basis of demographic characteristics including age, education, occupation and income. Each of these characteristic has been divided into five categories as given in table 3.2 below.

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Demographic Information</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age</td>
</tr>
<tr>
<td>1-5</td>
<td>18-25, 26-35, 36-45, 46-55, 56-65</td>
</tr>
<tr>
<td></td>
<td>Education</td>
</tr>
<tr>
<td>1-5</td>
<td>Primary, Secondary, Higher Secondary, Graduate, Post Graduate</td>
</tr>
<tr>
<td></td>
<td>Occupation</td>
</tr>
<tr>
<td>1-5</td>
<td>Farmer, Worker, Businessman, Professional, Unemployed</td>
</tr>
<tr>
<td></td>
<td>Income</td>
</tr>
<tr>
<td>1-5</td>
<td>Low, Medium, High</td>
</tr>
</tbody>
</table>

Table 3.2: Demographic Information
Collection of data

Review of literature explains the nature of studies undertaken in the past and provides a base to study. At the same time, for extracting useful and valuable information, it is essential to understand present situations as well. So the data collected for the study was divided into two parts: primary data and secondary data.

I. Primary data:

Personal interview with questionnaire method was used to collect the necessary data for the study. The opinions of the respondents were procured through interview or questionnaire at their door steps. It helped the researcher to generate necessary data for the study. Questionnaire contained many types of questions like open ended questions, closed ended questions, questions relating to rank etc. and was constructed in simple manner so that respondents could easily understand it and give their views freely. Quantitative techniques were used so that results could be analyzed to extract meaningful conclusions.

The questionnaire contained two parts:

<table>
<thead>
<tr>
<th>General Information</th>
<th>Categories</th>
<th>General Information</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Below 15yrs. (AG1)</td>
<td>Occupation</td>
<td>Industrialist</td>
</tr>
<tr>
<td></td>
<td>15-30yrs. (AG2)</td>
<td></td>
<td>Business</td>
</tr>
<tr>
<td></td>
<td>30-45yrs. (AG3)</td>
<td></td>
<td>Farming</td>
</tr>
<tr>
<td></td>
<td>45-60 yrs. (AG4)</td>
<td></td>
<td>Services</td>
</tr>
<tr>
<td></td>
<td>60 and Above (AG5)</td>
<td></td>
<td>Any Other (Student)</td>
</tr>
<tr>
<td>Education</td>
<td>Below Matric</td>
<td>Income</td>
<td>0-10,000</td>
</tr>
<tr>
<td></td>
<td>Matriculation</td>
<td></td>
<td>10,000-20,000</td>
</tr>
<tr>
<td></td>
<td>Graduation</td>
<td></td>
<td>20,000-30,000</td>
</tr>
<tr>
<td></td>
<td>Post Graduation</td>
<td></td>
<td>30,000-40,000</td>
</tr>
<tr>
<td></td>
<td>Post Graduation Plus</td>
<td></td>
<td>40,000 and Above</td>
</tr>
</tbody>
</table>
Part I: Demographic features like name, age, education, occupation, income type of area, family particular etc. were included in this part.

Part II: Specific information including information on behaviour of consumers for branded food products, factors influencing the purchase of branded food products, brand awareness, sources of information for brand awareness, frequency of purchase, nature of purchase decision, place of purchase, influencers of purchase decision, brand preference, factors influencing to prefer particular brand and alternative purchase plans of the consumers were taken up in this part.

II. Secondary data:

The secondary data was also used in the study wherever necessary. The data was collected from many published and unpublished sources, search engines like Google search, internet etc. The results of the study were corroborated with the secondary data to validate or contradict them.

3.5 Statistical Analysis

The desired data for the study was collected in qualitative as well in quantitative from rural as well as urban respondents of Ambala district. Quantitative aspects of data were collected through questionnaires by direct contact with respondents. Respondents were helped in getting the questionnaires filled by the researcher in case of need. In all, 300 questionnaires have been collected. Rank order rating scales and likert five-point rating scale were used to analyze the qualitative aspects of data collection.

Analytical Tools Used

Different statistical tools were applied for the analysis of data. The main tools or techniques were tabular analysis, average method, chi-square test, rank correlation, t-test etc. They were explained as below:

(a) Tabular Analysis

Several tables were prepared based on the data collection regarding the demographic features like age, education, occupation etc. The tables presented specific information on consumer
behaviour towards branded food products including brand awareness among consumers, media effectiveness, sources of information, place of purchase etc. The tabular analysis was useful in presenting data in a meaningful manner and extracting results of the study.

(b) **Percentage method**

In order to draw conclusions from the tables and to make the data comparable and understandable percentage method was used. Maximum percentage showed maximum liking, preferences and positive behaviour of consumer towards that particular brand.

(c) **Ranking Technique**

Rank correlation method was used in case the respondents assigned ranks to different brands of food products according to their taste, liking and preferences. So most preferable brand was assigned rank 1, then least preferred brand was assigned rank 5. To know the relationship between different ranks given by respondents, Spearman’s Rank Correlation was applied. Likert five-point rating scale was also used whenever. Further, to know about the behaviour of consumers towards branded food products Ordinal scale was also used. This scale was used to define the position of consumers.

(d) **Correlation Analysis**

Correlation analysis is used to measure the closeness of the relationship between the variables. It is the statistical device which helps us in analyzing the degree of relationship between two or more variables.

- **Karl Pearson coefficient of correlation**

Present study explains correlation among the rural respondents and urban respondents regarding the place of purchase, influence of purchase decision, situation in which consumers change their brand, feeling after getting branded food products, alternative purchase plans, product purchase frequency, sources of information’s, brand loyalty and in case of factors influencing brand preference. Karl person’s coefficient of correlation is used in all above cases.

Our X variable is rural respondents and Y variable is urban respondents.

\[ X = \text{Number of rural respondents} \]
\[ Y = \text{Number of urban Respondents} \]
Spearman rank correlation is used to test the association between two ranked variables, or one ranked variable and one measurement variable. It is important to understand that Pearson’s correlation is a statistical measure of the strength of a linear relationship between paired data.

\[
\rho = 1 - \frac{6 \sum d_i^2}{n(n^2 - 1)}
\]

Where,
- \(R\) = Rank coefficient of correlation
- \(D\) = Difference between two ranks (\(R_1 - R_2\))
- \(N\) = Number of pair of observations

After calculating correlation, the degree of correlation between urban respondents and rural respondents regarding each of case was tested as below:

**Degree of correlation**

1) **Perfect correlation**: when value of \(r\) is either -1 or +1. When \(r\) is -1 it is called perfect negative correlation while when \(r = +1\) is called positive perfect correlation.

2) **High degree of correlation**: When value of \(r\) lies between +0.75 to +1 it is called high degree of positive correlation while when value of \(r\) is between -0.75 to -1 it is called high degree of negative perfect correlation. Here correlation exists in very large magnitude.

3) **Moderate degree of Correlation**: when \(r\) lies between ± 0.25 to + - 0.75

4) **Low degree of correlation**: when correlation exists in very small magnitude i.e. when \(r\) lies between 0 ± 0.25

5) **Absence of correlation**: when there is no relationship between the variable then \(r\) is zero.
(e) *t*-test

*t*-test is a sample test. It is also known as a student’s *t*-test. Value of *t* is calculated here. *t*-test is also used to test the hypothesis about difference between two means in case of paired data i.e. when samples items are the same but different situations are being analyzed.

In our present study *t*-test has been applied to find out whether the difference of means was statistically significant or the correlation between the variables had significant relationship.

Then Appling *t*-test: the value of the *t*-test was calculated as under:

\[ t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}} \]

Where,
\[ \bar{x}_1 = \text{Mean of respondents of rural area} \]
\[ \bar{x}_2 = \text{Mean of respondents of urban area} \]
\[ s_1 = \text{Standard deviation of respondents of rural area} \]
\[ s_2 = \text{Standard deviation of respondents of urban area} \]
\[ n_1 = \text{Total number of respondents of rural area} \]
\[ n_2 = \text{Total number of respondents of urban area} \]

The formula for standard deviation is given by:

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

Where,
\[ S = \text{Standard Deviation} \]
\[ x = \text{value of data collected} \]
\[ \bar{x} = \text{Mean} \]
\[ n = \text{Total number of respondents} \]

Degree of freedom is worked by using the following formula degree of freedom (*ν*) = n-1.Symbol for degrees of freedom is *ν* (Greek letter *nu*). Then the calculated value of *t* is
compared with the table value at 95% level of significance if calculated value is less than the table value, then our hypothesis is accepted i.e. our assumption becomes right.

(f) Chi-square test:
This is a non-parametric test. Chi-Square symbolically written as “χ²”. It is used as a test of goodness of fit and as a test of attributes. Among different tests of significance, chi-square test is an important test. To know about the brand awareness and preference of brand different statistical techniques are used, one of them is chi-square test.

For applying this test, the researcher conducted a survey to collect the information of respondents regarding brand awareness and brand preference. There were 300 respondents and the researchers expect from each respondent to prefer one brand out of given 5 brands. So the expected frequency (E) is calculated by 300/5 = 60 but in some cases where 6 brand options were given, then E is 300/6 = 50. And observed frequency (O) was calculated after analyzing the responses given by the respondents then χ² test is applied by using following formula.

$$
\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i}
$$

Where:

O= Observed Frequency
E= Expected Frequency
ν (degree of freedom) = n-1

Then the calculated value of χ² is tested at 95% level of significance to know whether our hypothesis is accepted or rejected. If calculated value is less than the table value, then our hypothesis is accepted otherwise rejected.

3.6 Scope of the Study
The scope of the study was restricted to Ambala District only. The respondents were derived from urban as well rural areas. As mentioned in Table 3.1, the study included 5 food products which covered 5 brands of each food products.
The population was heterogeneous with diverse culture, economic background, tastes
preferences, needs etc. The samples were drawn on the basis of Simple Random Sampling, in which each and every consumer had equal right to be included in sample of consumers. In the present study, sample unit is a person i.e. CONSUMER.

### 3.7 Significance of the Study

The study is of great significance to the academicians and researchers as it not only strengthens the theoretical base of Consumer behaviour and brands but also helped the marketer to make strategy to meet future changes. The analysis provides an insight into the overall behaviour of consumers while purchasing branded food products. It would help the researchers to undertake future research on these aspects. The difference in buying behavior of rural consumers and urban consumers and association between them on certain aspects like brand awareness will be of great importance for exploring future grounds of research.

The significant research contributions were as under:

1. A comprehensive review of literature on consumer behaviour and brand has been made and various research approaches were discussed which provide sound basis for studying consumer behaviour towards brand should be studied.
2. The study examines the differences between consumers of rural area as well as urban area with regard to brand awareness, brand preference and other factors affecting consumer behaviour.
3. This study was relevant for marketers in assessing the trends of change and to prepare marketing plans suits to future changes.

### 3.8 Limitations of the Study

Keeping in view the time and finance available, the study was restricted to a sample of 300 respondents.

The phenomena of consumer behaviour are very much vast and include a number of aspects. But the study is restricted to certain aspects of consumer behaviour only.
Respondents’ biasness was a big factor as they hesitate to fill personal data. Most of respondents also did not show much interest and give their responses in haste. The results based on the basis of information provided by the respondents may not present true results to some extent.

Despite all these constraints the study is of great significance to the marketers, researcher, policy makers and the society.

3.9 Conceptual framework of the study

The present study was divided into chapters.

**CHAPTER 1:** Introduction explains the concepts of Consumer behaviour and brand in detail. General concepts like elements, evolution, functions, importance, need, objectives of marketing have also been included. The chapter also includes origin, types, importance of brands and importance of studying branded food products.

**CHAPTER 2:** Review of Literature which covers the researches undertaken in the past has been divided into five categories- first: Consumer Behaviour in general, second: Consumer Awareness, third: Purchase Behaviour of Consumers, fourth: Brand Preference and fifth: Factors Influencing Brand Preference. Various researches undertaken in the past have been summarized in this part.

**CHAPTER 3:** Research Methodology explains the statement of the problem, objectives of the study, research hypothesis, sampling design and data collection, statistical analysis, scope of the study, limitation and conceptual framework of the study.

**CHAPTER 4:** Analysis of Demographic Features in relation to rural and urban population includes the study of demographic features and their association with rural and urban population.

**CHAPTER 5:** Association of consumer awareness for their brand preference has been divided into three parts including a) Brand Awareness in consumers of different age group, b) Brand Preference and c) Ascertainment of most preferred brand.

**CHAPTER 6:** Buying Behaviour and factors influencing consumer brand preference in relation to rural and urban population have been studied under this chapter.
CHAPTER 7: The study comes to an end with the summary, conclusion, suggestions to overcome problems and future scope