3. RESEARCH METHODOLOGY

This chapter discusses in detail the methodology adopted in this study. It deals with the statement of the problem, objectives of the study, hypotheses of the study, research design, sampling design, data collection method, reliability statistics, internal validity, statistical tools used for analysis and the proposed theoretical model for the study.

3.1. Statement of the Problem

Consumer choices and decision making process is a complex phenomenon in nature. Making a decision to buy a product or service involves many course of action. There are lot of factors influencing the consumer preferences to select a particular product. The literature on brand preference studies reveals that for the selection of non-durable products, especially bath soaps, the consumer has been unable to spend time to evaluate and choose the desired one based on their need. The marketing strategies followed by the manufacturer and marketer as well as pre-conceived idea of the buyer also plays a vital role in selection of a particular brand and consumer satisfaction. Only a limited number of attempts have been made to study the factors influencing brand preference especially among brands in bath soaps. Based on these basic questions, the researcher has developed an interest to study the factors contributing to brand preference of bath soap brands of HUL (Hindustan Unilever Limited) and its effects on the level of consumer self confidence, propensity to provide market information, brand awareness, brand image and brand loyalty.
3.2. Objectives of the Study

1. To identify the impact of demographic variables on Hindustan Unilever Ltd. (HUL) bath soaps’ brand preference;

2. To examine the variables (consideration set formation, personal outcomes decision making and social outcomes decision making) affecting HUL consumers’ self confidence;

3. To ascertain the propensity of the respondents to provide market information;

4. To measure the brand awareness towards HUL bath soap brands;

5. To assess the brand image among the bath soap brands of HUL;

6. To measure the influencing factors toward perceived quality of HUL bath soap brands and

7. To understand the level of brand loyalty among consumers of HUL bath soaps.

3.3. Research Hypotheses

- Hypothesis 1: \( H_0 \) – The bath soaps brands of HUL preferred do not vary with the demographic variables of the respondents at 5%.

- Hypothesis 2: \( H_0 \) – The self confidence construct, Consideration Set Formation (CSF) do not vary with the demographic variables of the respondents at 5%.

- Hypothesis 3: \( H_0 \) – There is no association between the demographic variables such as age, gender, marital status, family type, educational qualification, occupation, and gross annual income with the average of Consideration-Set Formation (CSF) construct at 5%.
o Hypothesis 4: $H_0$ – The self confidence construct, Personal Outcomes decision making (PO) do not vary with the demographic variables of the respondents at 5%.

o Hypothesis 5: $H_0$ – There is no association between the demographic variables such as age, gender, marital status, family type, educational qualification, occupation, and gross annual income with the average of Personal Outcomes decision making (PO) construct at 5%.

o Hypothesis 6: $H_0$ – The self confidence construct, Social Outcomes decision making (SO) do not vary with the demographic variables of the respondents at 5%.

o Hypothesis 7: $H_0$ – There is no association between the demographic variables such as age, gender, marital status, family type, educational qualification, occupation, and gross annual income with the average of Social Outcomes decision making (SO) construct at 5%.

o Hypothesis 8: $H_0$ – Propensity to provide market information do not vary with the demographic variables of the respondents at 5%.

o Hypothesis 9: $H_0$ – There is no association between average propensity to provide market information and demographic variables such as age, gender, marital status, family type, educational qualification, occupation, and gross annual income at 5%.

o Hypothesis 10: $H_0$ – Brand awareness does not vary with the demographic variables of the respondents at 5%.
Hypothesis 11: $H_0$ – Brand loyalty does not vary with the demographic variables of the respondents at 5%.

3.4. Research Design

A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure.

The research design is the conceptual structure within which research is conducted. It constitutes the blueprint for the collection, measurement and analysis of data. Since the research problem is well defined and an attempt is made to describe the existing phenomena relating to brand preference, this research well fits into empirical research design. Empirical research is a way of gaining knowledge by means of direct and indirect observation or experience. Empirical evidence (the record of one’s direct observations or experiences) can be analyzed quantitatively or qualitatively. Through quantifying the evidence or making sense of it in qualitative form, a researcher can answer empirical questions, which should be clearly defined and answerable with the evidence collected (usually called data). Research design varies by field and by the questions being administered.

3.4.1. Sampling Design

Sampling design is a design or a working plan that specifies the population frame, sample size, sample selection and estimation method in detail. Objective of the sampling design is to know the characteristic of the population.
3.4.2. Type of universe

This study deals with the nature of infinite population. It is not easy to estimate the brand preferences of Bath soaps.

3.4.3. Sampling Unit

The researcher has selected eight taluks in Nagapattinam district viz., Kilvelur, Kutthalam, Mayiladuthurai, Nagapattinam, Sirkali, Tharangambadi, Thirukkuvalai and Vedaranyam. Samples for this present research were taken from these Taluks.

3.4.4. Source of respondents

Data for this research study were collected from the respondents after they had completed their shopping in super markets of these Taluks. Super markets are the only place where they can make choices freely.

3.4.5. Sampling plan

Sampling plan for this research is given below:

<table>
<thead>
<tr>
<th>S.No</th>
<th>Name of the Taluk</th>
<th>Population of the Taluk</th>
<th>Required sample size</th>
<th>Actual sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kilvelur</td>
<td>137791</td>
<td>42.68</td>
<td>40</td>
</tr>
<tr>
<td>2</td>
<td>Kutthalam</td>
<td>131927</td>
<td>40.87</td>
<td>40</td>
</tr>
<tr>
<td>3</td>
<td>Mayiladuthurai</td>
<td>259446</td>
<td>80.37</td>
<td>80</td>
</tr>
<tr>
<td>4</td>
<td>Nagapattinam</td>
<td>282872</td>
<td>87.63</td>
<td>90</td>
</tr>
<tr>
<td>5</td>
<td>Sirkali</td>
<td>318875</td>
<td>98.78</td>
<td>100</td>
</tr>
<tr>
<td>6</td>
<td>Tharangambadi</td>
<td>206752</td>
<td>64.05</td>
<td>60</td>
</tr>
<tr>
<td>7</td>
<td>Thirukkuvalai</td>
<td>60753</td>
<td>18.82</td>
<td>20</td>
</tr>
<tr>
<td>8</td>
<td>Vedaranyam</td>
<td>215653</td>
<td>66.80</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1614069</td>
<td>500.00</td>
<td>500</td>
</tr>
</tbody>
</table>

Source: Primary Data
3.4.6. Sampling Technique

Initial phase of this research is focussed on the selection of Taluks of Nagapattinam district. For this purpose, the researcher used area sampling to determine location for survey. A method in which an area to be sampled is sub-divided into smaller blocks that are then selected at random and then again sub-sampled or fully surveyed.

This method is typically used when a complete frame of reference is not available to be used. Second phase of the research is focussed on convenient sampling. convenience sampling (sometimes known as Accidental sampling) is a type of non-probability sampling which involves the sample being drawn from that part of the population which is close to hand and convenient to the researcher to make enquiry about the research problem. Sample population is selected because it is readily available and convenient. The researcher has used such a sample, that it cannot scientifically make generalizations about the total population from this sample because it would not be representative enough.

3.4.7. Sample size determination

Nature of universe: basically universe for this study is heterogeneous in nature. People those who are using Bath soaps of HUL is infinite in nature.

Number of classes proposed: this study measures the brand preference among the consumers. Consumers are classified on the basis of usage of particular Bath soap of HUL.

3.4.8. Sample size calculation

Sampling error can be controlled by selecting adequate size. The researcher has specified the precision in respect to estimation concerning the population parameter. In this case the researcher’s desired precision is ± 5 i.e. the true values mean not less than
95%. Researcher accepts that the acceptable rate of error (e) is equal to 5%. Researcher uses the following formula for deciding the required sample size for this study.

\[ n = \frac{z^2 \times \sigma^2_p}{e^2} \]

Here,

- \( n \) = size of the sample
- \( z \) = the value of standard variation at a given confidence level. Here the confidence level is 95% and assumed to be a normal distribution.

So, the table value under normal curve is 1.96.

- \( e \) = acceptable error
- \( \sigma_p \) = Standard deviation of the population calculated by taking functional variables for measuring brand preference of the respondents.

Hence, it is found that 0.569 is the value of standard deviation for the choice of Bath soaps.

\[ n = (1.96)^2 \times (0.569)^2 / 5^2 \]

\[ n = 497.30 \]

The researcher decided to collect 500 samples for this study.

3.4.9. Data collection

The primary data were collected with the sample size of 500 respondents living in eight Taluks of Nagapattinam district. The questionnaires were given to the respondents and they were given sufficient time to fill-it up. The data were collected during the period from July 2013 to December 2013.

A well-structured questionnaire was used to collect responses from the respondents. The questionnaire was constructed based on the research works of William O. Bearden et.al, (2001), Linda L. Price, et.al (1995), Keller (2003), Lau et al. (2006) & Amine (1998). Both demographic and functional variables were present in the
questionnaire. Likert Scale was used to measure the functional variables such as consumer self confidence variables, market maven variables, brand awareness variables, brand image variables, perceived quality variables and brand loyalty variables. Demographic variables include eight questions and functional variables include seventy four questions, out of which twelve questions were asked from brand awareness, thirty one questions from brand image, eighteen questions from perceived quality and thirteen questions from brand loyalty.

A pilot study was conducted using the questionnaire and based on the results certain questions were reconstructed. The Cronbach’s Alpha factor and Internal Validity of the questionnaire is shown in the table 3.2 and table 3.3 respectively.

Secondary data were collected for the purpose of constructing research problem, measurement of variables using various techniques, literature reviews and framing methodology. Secondary data were collected from websites, journals, and some published sources.

3.5. Reliability Statistics for measuring brand preference of Bath soaps

<table>
<thead>
<tr>
<th>Table: 3.2</th>
<th>Reliability Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cronbach's Alpha</td>
<td>N of Items</td>
</tr>
<tr>
<td>0.957</td>
<td>74</td>
</tr>
</tbody>
</table>

Cronbach’s alpha test is used to measure the reliability of the instrument being used to get the response from the respondents. The test refers that reliability of the overall measurement of brand preference factors among the respondents. Seventy four functional variables apart from the demographic variables are used to measure the reliability. Minimum reliability for the instrument is about 0.6 to 0.8 required for attaining minimum reliability. This study is having 0.957 alpha (i.e., 95.7 % of reliability) values. It infers that this instrument has attained good standards reliability.
3.6. Internal validity for measuring brand preference of Bath soaps

Table 3.3
Internal Validity using ANOVA

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between People</td>
<td>849.008</td>
<td>59</td>
<td>14.390</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within People</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Items</td>
<td>2435.476</td>
<td>73</td>
<td>33.363</td>
<td>54.257</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>2648.375</td>
<td>4307</td>
<td>.615</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5083.851</td>
<td>4380</td>
<td>1.161</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grand Mean</td>
<td>5932.859</td>
<td>4439</td>
<td>1.337</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The above table depicts the internal validity of the instrument. F-test used to test the internal ability of the instrument is valid for measuring the variable. P value for the F-test is below 0.05. It is inferred that variables are having significant relationship for measuring brand preferences of Bath soaps.
3.7. Proposed theoretical model for measuring brand preference of bath soaps

The chosen study variables to identify the factors influencing the consumers in the brand preference of bath soaps are depicted in the diagram shown below:

![Diagram 3.1](image)

3.8. Statistical Tools used in this research

Researcher has administered the statistical tools viz., one way ANOVA, chi-square test, Pearson’s correlation technique, regression analysis, factor analysis and Structural Equation Model (SEM) through AMOS (Analysis of Movement of Structure). The data have been analyzed through analytical software named SPSS Version -18 (Statistical Package for Social Sciences).

3.8.1. Analysis of Variance (ANOVA)

One way Analysis of Variance was applied to identify if there is any variation between influence of high involvement and low involvement factors which influence brand preference of Bath soaps.

3.8.2. Chi-square test

Chi square test was administered to find out the association between demographic variables in terms of their preference towards Bath soaps of HUL.

3.8.3. Pearson’s Correlation technique

Pearson’s Correlation technique was used to identify the relationship between study variables of brand preference.

3.8.4. Regression analysis and Structural Equation Model (SEM)

Regression analysis and Structural Equation Model through AMOS (Analysis of Movement of Structure) were used to formulate a model for predicting various aspects of consumer brand preferences of HUL. Within the framework of brand preferences, a number of variables which have the scope of studying the brand awareness, brand image, perceived quality and brand loyalty were used. Using the regression model it was proposed to construct a model.
The general regression model (linear) is of the type:

$$Y = a + b_1X_1 + b_2X_2 + \ldots + b_{15}X_{15},$$

Where $y$ is the dependent variable and $X_1, X_2, \ldots, X_{15}$ are the independent variables expected to be related to $y$ and expected to explain or predict $y$. $b_1, b_2, b_3, \ldots, b_{15}$ are the coefficients of the respective independent variables, which will be determined from the input data.

### 3.9. Research Ethics

In keeping with the ethical guidelines, the respondents’ names and addresses were not used in the study. While collecting data from the respondents, they were briefed on the academic objective of the study and none of them were forced to answer the questions which they were not comfortable answering.

This chapter discussed the methodology adopted in this study. It contains the statement of the problem, objectives of the study, hypotheses of the study, research design, sampling design, data collection method, reliability statistics, internal validity, statistical tools used for analysis and the proposed theoretical model for the study. The following chapter deals with the data analysis, results and discussion.