CHAPTER -3

RESEARCH METHODOLOGY

• Research Design
• Sample Design
• Data Collection
• The Questionnaire
• Data Analysis
• Statistical Techniques Used
• Chapterisation Scheme
A prudent man makes a plan before he undertakes his work, so also the researcher makes a plan of his study before he undertakes his research work. This enables the researcher to save time and resources. Such a plan of study or the blueprint is called Research Methodology. Without paying due attention to designing and adhering to the appropriate methodology, the result is that much of research, particularly in social sciences, contains endless word-spinning and too many quotations. Thus a great deal of research tends to be futile.

Since there are many aspects of research methodology, the line of action has to be chosen from a variety of alternatives. The choice of suitable method can be arrived at through the objective assessment, and comparison of various competing alternatives. It is because of this reason that the Research Methodology adopted for a study needs to be elaborated upon. At the same time research methodology helps the researcher to give his/ her reasons for adopting a certain course of action, while not ruling out the other one. Research methodology used in the present study is summarised as given below:

RESEARCH DESIGN

The research design is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data. As such the design includes outline of what the researcher will do from the writing the hypothesis and its operational implications to the final analysis of data.

In the present study research design is 'explanatory' in nature. The major
emphasis in such studies is on the discovery of ideas and insights. With a view to
developing a sound theoretical framework for the research, a review of literature on
buyer behaviour has been done. Hypotheses stated by earlier researchers have been
reviewed and their usefulness have been evaluated as a basis for research. However,
the related published literature on buyer behaviour in India is, indeed, scanty. Hence,
the relevant hypotheses to be tested have been deduced partly on the basis of
literature reviewed and partly by intuition. The research has been conducted under
frame work of following hypotheses:

'Sex, level of qualification, average family monthly income, age and occupation
of buyers are important behavioural determinants of buyers of footwear market.

SAMPLE DESIGN

It is extremely difficult to study the whole universe, and the sample has to be
designed in such a way that more representative information could be gathered and
this is the true in case of present study. The significance of sampling technique can
by no means be over emphasised. Care has to be taken to select a sample so that it
should not only be feasible in terms of size but also be representative of the whole
universe. It is true that bigger the size of the sample, the more representative it is
likely to be. But money and time constraints tend to limit the size of sample. Therefore,
a sample should neither be too big as to be unmanageable nor too small as to lose
its representative character. As the objective of the research was to know the opinions
of buyers to study the behavioural determinants of footwear marketing, the sampling
size was taken as given on next page:

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Rohtak and Karnal are important urban centres of Haryana. Rohtak is one of the most important and premier education centre of Haryana. It falls within the National Capital Region. It has a university, one medical college, three Dental Colleges, two Ayurvedic Colleges, two Engineering Colleges and about a dozen other Colleges imparting education in varied disciplines. Karnal is an important city on National Highway No. 1 with a very well developed agricultural and industrial base. These two urban centres can be considered to be representative of the urban population of not only the state of Haryana but for the whole of the nation. Similarly the suburban areas of Gohana and Kalanaur along with the selected urban centres can fairly reflect the mood of the buyers, particularly, in case of footwear as these areas truly reflect the socio-economic status of people living in Haryana.

Non probability sampling is the only sampling technique available for present study which will provide an objective measure of reliability of the sample estimate. Purposive cum stratified sampling technique has been used in this case. Respondents were contacted mainly at their residences to make the sampling more accurate. Sufficient care has been taken in order to keep the sample more representative of the universe and to cover all demographic segments such as sex, income, occupation,
age and educational qualification. As it is a fact that non-service class people hesitate
to state accurate position of family average monthly income, care has been taken to
ensure their exact position of family average monthly income on the basis of general
observation and judging their standard of living while visiting their residences to
collect the data.

DATA COLLECTION

GIGO - Garbage in, Garbage out is a common phrase among computer people.
It refers to the fact that in a computer process, the results are based on what is fed to
it. The results will be good if the data put in are good, it is equally applicable in
marketing research also. If poor or unrelated data are collected, naturally poor
conclusions will be drawn. To make it sure that data collected was accurate a due
consideration was given to the method of data collection.

The data for the present study were collected by interviewing selected
respondents with the help of a pretested questionnaire. The questionnaire was of a
structured and non-disguised type. To develop a list of information items for framing
a questionnaire, the researcher reviewed existing literature on buyer behaviour, and
consulted the experts in the area of buyer behaviour. The preliminary draft of the
questionnaire was prepared and pre-tested on 30 respondents. This helped in
improving upon the questionnaire and also gave an indication as to the kind of
responses that would be forthcoming. With a few deletions and additions, a final
questionnaire was developed which has been given in appendix.

The questionnaire contained questions relating to the socio-economic
background of the respondents besides those relating to buyers' preferences, buyers' motivation, buyer's buying process, shopping behaviour and general observation regarding footwear market. The questions included were open-ended, dichotomous and offering multiple choice. Some of the questions required rankings or ratings by respondents. To study different dimensions of buyer behaviour, direct questioning technique has been more relied upon, as this technique can be treated quantitatively, is less vulnerable to the subjective interpretation of the researcher and can be applied to a large sample.

**THE QUESTIONNAIRE**

Questionnaire meant for the research was divided into two parts: Part 'A' of the questionnaire, consisting of some personal information regarding sex, family average monthly income, educational qualification, age and occupation etc. has been sought so that the data collected may be analysed on the basis of these informations. The second part 'B' contains the questions related to the following aspects:

**Buyer's brand preferences :**

The strength of a brand depends upon the degree of preference in the mind of buyer. To identify the brand in use, the respondents were asked to state the brand of footwear which they generally use and further, they were asked to state the brand in use for different types of footwear. In addition, an attempt is made to know the reasons why they buy footwear of specific brands for different type of footwear and do they make choice of footwear brand which they wish to buy before actual making purchase.

**Efforts for collection of information and sources of information :**
Whether buyers make efforts to collect the informations regarding the different brands of footwear available in market before buying, a query was made from respondents. An attempt was also made to know the sources of information.

**Attributes considered in buying footwear:**

Respondents were given a list of product attributes and general attributes and were asked to state the level of importance while buying footwear or otherwise. Attributes were such as reliable in quality, long lasting, comfortable, economical, water-proof, light weight, colour & design, finishing, reliable seller, easy availability, advertisements and brand/Co. name etc.

**Role of reference groups in buying behaviour:**

Reference groups help to shape one's buying decision. A query was put before the respondents to know the type of information they collect from their reference groups. Further, a query was made whether they purchase the brand recommended by someone else or a different brand.

**Intenity of brand loyalty and for brand shifting:**

In order to measure the intensity of brand loyalty regarding footwear, the respondents were asked, "Suppose if you have to buy new footwear now, you will buy the same brand or move to new brand or you are uncertain." A further query was made by putting a list of reasons regarding brand shifting, would you like to move to some other brand in future if the stated situations happen such as price increase of the brand in use, price decrease of competitive brands, entry of new brand, manufacturing defects appear in the brand used by them.
Frequency of brand switching:

Brand switching is closely and inversely associated to brand loyalty. An attempt was made to know the frequency of brand switching regarding different type of footwear at five-point scale.

Satisfaction level and the brands of footwear:

The respondents were asked to state the level of satisfaction regarding national brands and local brands of footwear used by them now-a-days at five-point scale.

Role dominance in purchase decision:

All the purchases made by a buyer follow a certain decision making process. A query was made to know the dominant role of family members in different areas of purchase decision regarding footwear such as budgeting, brand selection, shop selection and actual act of purchase.

Shopping behaviour:

The manufacturers' choice of distribution channels as well as the retailers' selection of products is bound to be affected by the shopping behaviour of the buyers. In order to know this, attempts were made by putting queries such as; whether they prefer to buy their footwear from general shop or showroom for different types of footwear, whether they make all their purchases from one particular shop or two shops or more and why.

SALE and objectives of SALE:

'SALE' policy has been become popular now-a-days. Respondents were asked whether they like to purchase footwear at 'SALE' for different type of footwear and
what may be the objectives of 'SALE' made by footwear shops in their opinion.

**Buyers level of complaints and actions being taken against problems or complaints:**

A query was made to know the frequency of problems or complaints of buyers in general with six marketing areas of footwear viz. quality, price, advertisements, selling conditions, guarantee and after sale service. Further an attempt was made to know the action being taken by them against problems or complaints regarding local brands and national brands.

**Buyers satisfaction level in different areas of marketing:**

A question was put before the buyers by the way of research instrument that, how satisfied they are in general, with six marketing areas of footwear viz. quality, price, advertisements, selling conditions, guarantee and after sale service.

**Importance of different areas of marketing:**

To measure the degree of importance attached to different areas of marketing, a query was asked from buyers to express their opinion about the importance of different factors of footwear marketing viz. quality, price, advertisements, selling conditions, guarantee and after sale service.

**DATA ANALYSIS**

The responses obtained from different respondents were coded and tabulated with the help of computer. Although there can be a host of variables which can effect buyer behaviour, but the researcher has concentrated only on variables - sex, family average, monthly income, educational qualification, age and occupation
### Table: 3.1
CATEGORIES OF RESPONDENTS FOR ANALYSIS OF DATA

<table>
<thead>
<tr>
<th>Base</th>
<th>Category No.</th>
<th>Classification</th>
<th>Category Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>I</td>
<td>Female</td>
<td>$S_1$</td>
</tr>
<tr>
<td></td>
<td>II</td>
<td>Male</td>
<td>$S_2$</td>
</tr>
<tr>
<td>Family Average</td>
<td>I</td>
<td>Upto Rs. 10,000</td>
<td>$I_1$</td>
</tr>
<tr>
<td>Monthly Income</td>
<td>II</td>
<td>Rs. 10,000 to 20,000</td>
<td>$I_2$</td>
</tr>
<tr>
<td></td>
<td>III</td>
<td>Rs. 20,000 to 30,000</td>
<td>$I_3$</td>
</tr>
<tr>
<td></td>
<td>IV</td>
<td>Above Rs. 30,000</td>
<td>$I_4$</td>
</tr>
<tr>
<td>Education</td>
<td>I</td>
<td>Upto Intermediate</td>
<td>$E_1$</td>
</tr>
<tr>
<td></td>
<td>II</td>
<td>Graduation</td>
<td>$E_2$</td>
</tr>
<tr>
<td></td>
<td>III</td>
<td>Post-Graduation and</td>
<td>$E_3$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Above</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>I</td>
<td>15-25 Years</td>
<td>$A_1$</td>
</tr>
<tr>
<td></td>
<td>II</td>
<td>25-35 Years</td>
<td>$A_2$</td>
</tr>
<tr>
<td></td>
<td>III</td>
<td>35-45 Years</td>
<td>$A_3$</td>
</tr>
<tr>
<td></td>
<td>IV</td>
<td>More than 45 Years</td>
<td>$A_4$</td>
</tr>
<tr>
<td>Occupation</td>
<td>I</td>
<td>Student</td>
<td>$O_1$</td>
</tr>
<tr>
<td></td>
<td>II</td>
<td>Unemployed</td>
<td>$O_2$</td>
</tr>
<tr>
<td></td>
<td>III</td>
<td>Service</td>
<td>$O_3$</td>
</tr>
<tr>
<td></td>
<td>IV</td>
<td>Businessman</td>
<td>$O_4$</td>
</tr>
<tr>
<td></td>
<td>V</td>
<td>Professional</td>
<td>$O_5$</td>
</tr>
</tbody>
</table>
which are indeed crucial variables determining the socio-economic status of the buyers. Keeping in view, the nature of our respondents and for practical reasons, variables have also been classified into different categories to enable meaningful analysis of data as depicted in table 3.1.

The responses of the respondents have been presented in all the tables in terms of both the numbers and percentages. Figures in tables within parenthesis represent percentages while those without parenthesis are simple frequencies.

STATISTICAL TECHNIQUES USED

In order to sharpen the inferences drawn on the basis of simple description of facts in terms of frequencies, averages and percentages, appropriate tools of statistical analysis have been used. For the purpose of testing various null hypotheses regarding association of buyer behaviour with determinant variables, non-parametric test 'Chi-square' has been used. Spearman's correlation and Kendall's coefficient of concordance have been used to test the various null hypotheses regarding satisfactional level, frequency of problems and complaints and importance attached to different areas of footwear marketing. Weighted average scores were calculated at appropriate places where the respondents were asked to rank/ rate different factors, either according to degree of their importance or according to their preference as the case may be.

The details of various statistical tests/ tools used for indepth analysis and interpretation are given below:
Chi-square Test

With the help of Chi-square test the researcher is in a position to know whether a given discrepancy between theory and observation may be attributed to chance or it results from the inadequacy of the theory to fit observed facts. The greater the discrepancy between the observed and expected frequencies, the greater is the value of Chi-square. It is defined as

\[ \chi^2 = \frac{(O_i - E_i)^2}{E_i} \]

where \( O_i \) = observed frequency in ith cell

\( E_i \) = expected frequency for ith cell

Expected frequency (\( E_i \)) is given by \( \frac{RT \times CT}{N} \)

where, RT = the row total for the row containing the cell

CT = the column total for the column containing the cell

and N = the total number of observations

The test was conducted at 95 percent confidence level (or 5% level of significance). The calculated chi-square values were compared with the table value of chi-square at given degree of freedom (d.f.), where

\[ d.f. = (r-1)(c-1), \]

where \( r \) = number of rows

\( c \) = number of columns
If at the stated level of significance, the calculated value of chi-square is less than table value, the deviation of observed frequency from expected frequency was considered to be insignificant. Consequently, the null hypothesis was accepted, if the calculated chi-square value was found to be more than the table value, the difference was considered to be significant and null hypothesis was rejected.

Weighted average scores

The weighted average scores were calculated at suitable places where the respondents were asked to rank, or rate, different attributes of footwear according to their degree of importance and different factors of footwear market according to their degree of satisfaction, according to their frequency of problems / complaints and according to their degree of importance. For example, where a five point scale was used to measure the extent of importance given to different attributes of footwear, the scale range was from 1 point to 5 point, low scores indicating 'Not at all Important' and high scores indicating 'greater importance'. The responses were indicated in terms of 'Extremely Important', 'Very Important', 'Somewhat Important'. If the respondent gave 'Extremely Important' response to an attribute, which was of a positive nature, a weight of five was allotted to it, if he only stated 'Very Important' with an attribute, a weight of four was given and so on.

On the basis of frequency of ratings for each factor, weighted average scores for each factor were computed as below:
Weighted average of scores on a factor, \( W = \frac{\sum_{w=1}^{S} w f_w}{\sum f_w} \)

Where \( W \) = Weight given to a factor
\( f_w \) = no. of respondents, who attached weight \( w \) to the factor

**Kendall's Coefficient of concordance:**

For data comprising in set of ranks, where \( m > 2 \), Kendall's coefficient of concordance, represented by \( W \), is an important nonparametric measure of relationship. This \( W \), measures the extent to which there is agreement between the ranking on any number of variables. The procedure for computing and interpreting Kendall's coefficient of concordance \( W \) is as follows:

i) All the objects 'N' should be ranked by all judges in the usual fashion and this information may be put in the form of a \( K \) by \( N \) matrix;

ii) For each object determine the sum of ranks \( (R_j) \) assigned by all the \( k \) judges;

iii) Determine \( R_j \) and then obtain the value of \( S \) as under:

\[
S = \sum (R_j - \bar{R}_j)^2
\]

iv) Work out the value of \( W \) using the following formula:

\[
W = \frac{S}{\frac{1}{15} k^2 (N^2 - N)} - \frac{1}{2} (N^3 - N)
\]

\[
S = \sum (R_j - \bar{R}_j)^2
\]
\[ W = \frac{m (n-1) \chi^2}{12} \]

This has a chi-square distribution with \( N-1 \) degrees of freedom. In order to reject the hypothesis at the given level of significance, the calculated value must be equal to or larger than table value of \( \chi^2 \).

Where the tied ranks occur, a correlation factor is calculated for each set of ranks. This correction factor where \( t_j \) is number of ranks tied in jth rank.

\[ T = \frac{\sum (t_j^3 - t_j)}{12} \]

Where \( t_j \) is number of ranks tied in jth rank.

We then apply a formula for \( W \) in which this correlation factor is incorporated. The formula is

\[ W = \frac{S}{1/12 m^2 (N^3-N) - m \sum T} \]
Spearman's rank correlation

For data comprising in set of ranks, where \( m=2 \), a descriptive measure of the agreement between \( m \) sets is provided by Spearman's Rank Correlation. According to this method,

\[
1 - \frac{6 \sum d^2}{n (n^2-1)}
\]

Where
- \( r \) = Rank Correlation
- \( d \) = Rank differences
- \( n \) = Number of pair of observations.

When prefect agreement exists between individuals, \( r=1 \). For purposes of testing our hypothesis, the significance of \( r \) may be easily tested by using the table values at the given level of significance. If table values are greater than calculated value of \( r \), our hypothesis is accepted, otherwise it is rejected.

When the tied ranks occur, an adjustment is made in the formula for calculating rank coefficient of correlation:

\[
6 \left[ \sum d^2 + \left\{ \frac{1}{12} (m^3-m) + \frac{1}{12} (m^3-m) \right\} \right]
\]

\[
r = \frac{1 - \sum d^2}{n (n^2-1)}
\]

Where \( m \) = number of items of equal ranks.
The present study comprises of seven chapters.

Chapter one, which is introductory, defines the modern marketing concept and presents the concept of buyer behaviour by defining and discussing the determinants of buyer behaviour. It introduces the buying process and importance of buyer behaviour, and presents an overview of footwear industry in India. The need and objectives of the present study are also discussed in this chapter.

With a view to evolving an appropriate methodology for this study and determining the need for the same, literature on the subject has been reviewed in Chapter Two. This chapter presents a brief historical perspective of the theory of buyer behaviour and reviews the available literature on footwear and related buyer products which deal with the various aspects within the purview of this study, that is, buyer preferences, buyer motivation, buying process and buyer shopping behaviour.

Research methodology used for the present study is given in Chapter Three. Its purpose is to define guidelines for the conduct of the study. It includes the hypotheses of the study, universe of the study, sampling design, methods of data collection, data analysis and statistical tools used for the analysis.

A Profile of the buyers of footwear is presented in Chapter Four. This chapter deals with the general characteristics of the buyers of footwear and different brands that they use.

Chapter five covers the analysis of behavioural determinants of footwear market. This chapter explores the reasons for buying specific brands of footwear,
importance of different attributes considered in buying footwear, brand loyalty, satisfactional level and frequency of brand switching. Further, it explores the role-dominance in making decisions with respect to budgeting, brand selection, shop selection and actual act of purchase of footwear. Finally, it examines the store preferences, concept of SALE and actions being taken against, problems or complaints regarding footwear. To capture the simultaneous effect of different socio-economic factors on the different aspects of buyer behaviour, the different statistical tools are used.

Chapter Six, examines the observations of buyers of footwear regarding satisfaction level, problems or complaints and importance in different areas of footwear market such as quality, price, advertisements, selling conditions, guarantee and after sale service.

The major findings and conclusions that emerge from this study are listed in Chapter Seven. It gives the summary of findings and conclusions and ends with the recommendations to the marketers.