CHAPTER-III
RESEARCH METHODOLOGY

The basic research question is to study the parental attitude and perceptions regarding the television advertising directed at children. A review of literature done for the purpose of developing the theoretical framework for the present study revealed that practically not much research has been done on this issue in the Indian context. Though substantial work has been done on the impact of TV advertising on children, but the parental view point has not caught the attention of the investigators. Television as a media has been chosen for the study due to its prime relevance from children’s view point. Detailed methodology followed for the conduct of the present study is given in this chapter.

Review of literature was undertaken to develop sound theoretical framework for this research. Important issues taken up by the various researchers over a period of time have been accounted for. An effort has been made to address all the relevant issues that are important to Indian marketing and social environment in order to provide insights to advertisers, marketers, policy makers, society and parents in particular, towards TV advertisements directed at children.

Hypothesis of the Study

Hypothesis is basically intelligent conjectures made by the researcher before actually conducting the research. The hypothesis to be tested was framed on the basis of prior research and intuition.

The main variable considered was the working status of mothers. As working mothers most of the time remain at their work place so they spend less time with their children as compared to non-working mothers. Due to this fact, perception and attitude of working and non-working mothers towards TV advertising directed at children may be different.

The broad areas to which the study is focussed are: TV advertising directed at children in general, impact on social and cultural values, modes of mediation, and issues related to control and restriction of TV advertising. As attitude is not a unidimensional construct, there are many demographic variables which conjointly interplay and may affect the
attitude, but they have a balancing out effect for mothers in general. The broad null hypothesis framed for the study is

“There is no significant difference between working and non-working mothers with respect to attitude towards TV advertising directed at children, the manner in which parents mediate TV viewing by children, impact on social and cultural values and issues related to control and restriction of TV advertising”.

**Universe for the study**

The catchment area for the present study is the state of Punjab and union territory of Chandigarh. Three cities of Punjab viz; Amritsar, Jalandhar and Ludhiana were selected. Amritsar is representing Majha region, Jalandhar Doaba region and Ludhiana is the representative of the Malwa region. Chandigarh is the capital of Punjab and it is more cosmopolitan city. The population essentially consists of the salaried and business class. The selected cities being modern, socially, culturally and educationally more developed, their residents are expected to be ideal respondents for an in-depth study of the undertaken here. Moreover, limitations of time and resources accounted for the geographical concentration to these cities.

**Sample and Sampling design**

It was planned to have a sample of 500 respondents from the afore stated cities / U.T. From each of the selected cities a sample of 125 respondents was planned to be surveyed. But due to response error, the effective sample has been virtually reduced to 408 respondents.

In the present study, mothers of the children of age group six to twelve years have been considered as a basic sampling unit. This is because of the fact that mothers in the Indian family are more invasive, interventionist and assertive in their families, particularly towards children. Moreover, they are more emotionally involved in upbringing of children and have an indelible influence on their personality. Previous research is also a testimony to the fact that mothers are the primary caregivers to the children and are more associated with mediation of TV viewing and have participated in most of the studies (Ward and Wackman, 1972; Atkin, 1972; Popper, 1971; Rose, Mukerji, 2003).
Convenience sampling has been used to select the respondents. However an effort was made to select the respondents with diverse socio-economic status to make sample a true representative of the population.

Construction of the Questionnaire and Data Collection

Since the parental perception is to be studied, the data has been collected through survey method by instituting a structured, non-disguised and pre-tested questionnaire. In order to frame a list of information items that were sought from respondents, previous studies on TV advertising and childrens behaviour have been thoroughly reviewed (Hite and Heck, 1987; Unnikrishnan and Bajpai, 1996; McNeal and Chara, 2003; Nathalie and Patrick, 2007). Experts in the area were consulted and also current marketing, social and regulatory scenario has been taken into consideration.

The preliminary draft of the questionnaire was prepared and pretested over a sample of 35 respondents, selected from the catchment area intended to be mapped in the present study. On the basis of the feedback received from the pilot study, some of the questions were deleted. This helped in shaping and sharpening the items by modifying their language and structure. The final draft of the questionnaire as used for the present research retained the original sections, as conceived in the preliminary draft. The final draft of the questionnaire is appended with the thesis (Appendix-I). The questionnaire in the final form has been administered to the respondents. While some questions were close ended, others involved multiple-choice options but most of the responses were measured on the five point Likert scale (from strongly agree to strongly disagree). The questionnaire followed the progressive trend in which the mothers were judged on their perception and attitude about TV advertising in general, followed by the perception that they carried about the parental role in mediating the TV viewing habits of their children. Other two important issues that were judged related to parental perception about the impact of TV advertising on cultural and social values and the control and restriction of TV advertising. The data were mostly collected through personal interviews of the selected respondents. Parents of some children were also approached through selected schools. The children were asked to take the questionnaire to their homes, get it filled from their parents and return the same to the class teacher within three days.
SAMPLE PROFILE

Since the sample constituted the respondents from different socio-economic backgrounds, therefore personal and the socio-economic characteristics of the respondents are being presented here. The city-wise distribution of the respondents is given in Table 3.1 and Figure 3.1.

The Table shows that 26.23 per cent of the respondents are from the city of Ludhiana, 25 per cent of the total sample is from the Jalandhar city, 24.02 per cent from the city of Amritsar and 24.75 per cent of the total sample is from the Union Territory of Chandigarh. This reveals that all the selected cities have been almost equally represented in the sample.

Table 3.1: City-wise distribution of respondents

<table>
<thead>
<tr>
<th>City/U.T</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ludhiana</td>
<td>107 (26.23)</td>
</tr>
<tr>
<td>Jalandhar</td>
<td>102 (25)</td>
</tr>
<tr>
<td>Amritsar</td>
<td>98 (24.02)</td>
</tr>
<tr>
<td>Chandigarh</td>
<td>101 (24.75)</td>
</tr>
<tr>
<td>Total(N)</td>
<td>408</td>
</tr>
</tbody>
</table>

Note: The figures in parentheses in this table and the tables to follow represent percentages.

Figure 3.1 : City-wise distribution of respondents
Number of Children

Profile of the respondents on the basis of the number of children that they have is given in the Table 3.2 and Figure 3.2

Table 3.2: Distribution of respondents on the basis of Number of Children

<table>
<thead>
<tr>
<th>Number of Children</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>One</td>
<td>81 (19.9)</td>
</tr>
<tr>
<td>Two</td>
<td>316 (77.5)</td>
</tr>
<tr>
<td>Three and more</td>
<td>11 (2.7)</td>
</tr>
<tr>
<td>Total(N)</td>
<td>408</td>
</tr>
</tbody>
</table>

Figure 3.2: Distribution of respondents on the basis of Number of Children

The Table 3.2 shows that 77.50 per cent of the respondents have two children, 19.9 per cent respondents have only one child, whereas only 2.7 per cent of the respondents have three or more children. This reveals that most of the respondents under study have two children.
Occupation-wise distribution of the fathers is given in Table 3.3 and Figure 3.3

Table 3.3: Occupation-wise distribution of respondents (Fathers)

<table>
<thead>
<tr>
<th>Occupation of Father</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Businessman</td>
<td>203 (49.8)</td>
</tr>
<tr>
<td>Professional</td>
<td>66 (16.3)</td>
</tr>
<tr>
<td>Service class</td>
<td>120 (29.4)</td>
</tr>
<tr>
<td>Agriculture</td>
<td>12 (2.9)</td>
</tr>
<tr>
<td>Any other</td>
<td>7 (1.7)</td>
</tr>
<tr>
<td><strong>Total (N)</strong></td>
<td><strong>408</strong></td>
</tr>
</tbody>
</table>

The table shows that the highest percentage (49.8%) of the fathers were running their own business, followed by service (29.4%) and professional (16.3%). A very low percentage (2.9%) of the fathers have agriculture as their occupation. This shows that almost 79 per cent of the fathers in the sample belong to business and service class.

Figure 3.3: Occupation-wise distribution of respondents (Fathers)
Working Status-wise distribution of respondents (Mothers) is given in the table: 3.4 and Figure: 3.4

Table 3.4: Working status-wise distribution of the respondents (Mothers)

<table>
<thead>
<tr>
<th>Working Status of Mothers</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working</td>
<td>191 (46.81)</td>
</tr>
<tr>
<td>Non-working</td>
<td>217 (53.19)</td>
</tr>
<tr>
<td><strong>Total (N)</strong></td>
<td><strong>408</strong></td>
</tr>
</tbody>
</table>

The Table 3.4 reveals that 53.19 per cent of the respondents (mothers) are non-working whereas 46.81 per cent of them are working. Hence the sample has almost equal representation of working and non-working respondents.

Figure 3.4: Working Status-wise distribution of respondents (Mothers)

The profile of the fathers on the basis of their educational qualifications has been carried out in Table 3.5 and Figure 3.5
Table 3.5: Education-wise distribution of respondents (Fathers)

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upto Matric</td>
<td>15 (3.7)</td>
</tr>
<tr>
<td>Higher secondary</td>
<td>31 (7.6)</td>
</tr>
<tr>
<td>Graduate</td>
<td>200 (49)</td>
</tr>
<tr>
<td>Post graduate</td>
<td>162 (39.7)</td>
</tr>
<tr>
<td><strong>Total(N)</strong></td>
<td><strong>408</strong></td>
</tr>
</tbody>
</table>

Table 3.5 shows that 49 per cent of the fathers have graduation as their qualification, 39.7 per cent are post graduates and 7.6 per cent have higher secondary as the qualification. Only 3.7 per cent of the respondents (father) are qualified upto matric.

**Figure 3.5: Education-wise distribution of the respondents (Fathers)**

- **Graduate**: 49.00%
- **Post Graduate**: 39.70%
- **Higher Secondary**: 7.60%
- **Upto Matric**: 3.70%
Education-wise distribution of respondents (Mothers)

The education level of the mothers is an important factor that determines the way children are brought up in the family and this is very true in the Indian society. The educational qualifications of the mothers are represented in the Table 3.6 and Figure 3.6.

**Table 3.6: Education-wise distribution of the respondents (Mothers)**

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upto Matric</td>
<td>13 (3.2)</td>
</tr>
<tr>
<td>Higher secondary</td>
<td>30 (7.4)</td>
</tr>
<tr>
<td>Graduate</td>
<td>166 (40.7)</td>
</tr>
<tr>
<td>Post graduate</td>
<td>199 (48.8)</td>
</tr>
<tr>
<td><strong>Total(N)</strong></td>
<td>408</td>
</tr>
</tbody>
</table>

Table 3.6 depicts that most of mothers’ (48.8%) are post graduates. This is followed by 40.7 per cent as graduates, 7.4 per cent with higher secondary as the qualification. Only 3.2 per cent of the mothers’ have the qualification upto matric. This shows that almost
(89.50%) of the mothers have either Post graduation or Graduation as their educational qualifications.

**Monthly Family Income**

Family Income-wise distribution of the respondents is given in the Table 3.7 and Figure 3.7

**Table 3.7: Income-wise distribution of the respondents**

<table>
<thead>
<tr>
<th>Monthly Income (Rs)</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upto 25000</td>
<td>92 (22.54)</td>
</tr>
<tr>
<td>25000-50000</td>
<td>204 (50)</td>
</tr>
<tr>
<td>50000-75000</td>
<td>84 (20.58)</td>
</tr>
<tr>
<td>Above 75000</td>
<td>28 (6.88)</td>
</tr>
<tr>
<td><strong>Total (N)</strong></td>
<td><strong>408</strong></td>
</tr>
</tbody>
</table>

**Figure: 3.7: Income-wise distribution of respondents**

Table 3.7 reveals that 50 per cent of the respondent families have the income that varies between twenty five thousand to fifty thousand. This is followed by the families having
the monthly income upto Rs-25000 (22.54%) and Rs. 50000-75000 (20.58%). There are only 6.88 per cent of families which have the monthly income above Rs. 75000.

DATA ANALYSIS

Although there can be a host of variables which can influence the mothers’ attitude towards advertising and can be used for analysis, yet in the present study one of the most important variable that is the working status of the mothers has been chosen for analysis. The mothers have been classified as working and non-working mothers.

Working status of the mothers has been selected as the variable for present study because working mothers spend less time with their children due to their pre-engagements in their respective jobs. Working mothers tend to use higher-quality substitutes and show higher levels of sensitivity to their children. Based on these facts the working mothers might follow different thinking, attitude and their overall behavior might be different from the non-working mothers.

The responses of the respondents have been presented in all the tables in terms of both the numbers and percentages. Bold figures in the table represent percentages while the normal figures represent the simple frequencies.

Weighted Average Scores

Weighted Average scores (WAS) were calculated at suitable places where the respondents were asked to rate, rank or express their level or degree of agreement/disagreement with some statements. For example, in a five point Likert scale, the scale ranges from 1 to 5. The low score indicates disagreement, dissatisfaction or unimportant while high score indicates agreement, satisfaction or importance. The WAS score was computed as below

\[
WAS = \frac{1}{\sum fW} \sum_{w=1}^{5} WfW
\]

Where:

\[W = \text{Weight given to a factor/statements}\]
\[fW = \text{Number of respondents who attached weight ‘w’ to the factor/statement}\]
STATISTICAL TECHNIQUES USED

In order to arrive at meaningful conclusions for the inferences drawn on the basis of simple description of figures in terms of frequencies, averages and percentages some of the statistical tools have been used that are being briefly explained.

Chi-Square Test

The chi-square statistics is used to test the statistical significance of the observed association in a cross tabulation. It assists in determining whether the systematic association exists between two variables. The null hypothesis is that there is no association between the variables. The test is conducted by computing cell frequencies that would be expected if no association was present between the variables, given the existing row and column totals. These expected cell frequencies denoted $f_e$ are then compared to the actual observed frequencies $f_o$ found in the cross tabulation to calculate the Chi-square statistics. The greater the discrepancies between the expected and actual frequencies, the larger the value of the statistic.

$$\chi^2 = \sum \frac{(f_o - f_e)^2}{f_e}$$

To determine whether a systematic association exists, the probability of obtaining a value of chi-square as large or larger than one calculated from the cross tabulation is estimated. An important characteristic of the chi-square statistic is the number of degrees of freedom (df) associated with it. In general, the number of degrees of freedom is equal to the number of observations less than the number of constraints needed to calculate a statistical term. In the chi-square statistic associated with the cross tabulation, the number of degrees of freedom is equal to the product of number of rows ($r$) less one and the number of columns ($c$) less one. That is, $df = (r-1) \times (c-1)$. The null hypothesis of no association between the two variables will be rejected only when the calculated value of the test statistics is greater than the critical value of the chi-square distribution.
**Analysis of Variance**

Generally ANOVA technique is used to compare more than two means together. In the present study, differences among preferences for watching TV advertisements for different products was calculated. The mean values for different categories were compared through F-ratio by applying ANOVA with unequal number of replication technique. This ANOVA is called Completely Randomized Block Design (one way).

**ANOVA Table**

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>d.f.</th>
<th>T.S.S.</th>
<th>M.S.S.</th>
<th>F-ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Categories (s)</td>
<td>n-1=a</td>
<td>s₁</td>
<td>s₁/a=x</td>
<td>x/y</td>
</tr>
<tr>
<td>Error (E)</td>
<td>b-a=c</td>
<td>E₁</td>
<td>E₁/b=y</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>N-1=b</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Where

- d.f. = Degree of freedom
- N = No. of respondents
- T.S.S. = Total sum of squares due to categories/error
- M.S.S. = Mean Sum of squares due to categories/error
- n = No. of categories to be compared i.e. preferences for watching TV advertisements for different products

If the F-ratio is significant then there is a significant difference regarding a statement among different age groups, otherwise not.

**Independent Samples t-test**

The independent-sample t-test procedure compares means for two groups of cases. In order to compare two mean values, (e.g. between working and non-working mothers), independent sample t-test has been applied as under:

\[
t = \frac{\bar{x}_1 - \bar{x}_2}{S.E.(\bar{x}_1 - \bar{x}_2)}
\]
S.E. = $S \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}$

$S = \sqrt{\frac{SD_1^2(n_1 - 1) + SD_2^2(n_2 - 1)}{n_1 + n_2 - 2}}$

Where
- $\bar{x}_1$ = Mean score among working mothers
- $\bar{x}_2$ = Mean score among non-working mothers
- $SD_1$ = Standard deviation among working mothers
- $SD_2$ = Standard deviation among non-working mothers
- $S$ = Common Standard Deviation
- S.E. = Standard Error of mean difference
- $n_1$ = Number of working mothers
- $n_2$ = Number of non-working mothers

**Factor Analysis**

Factor analysis is a part of the multiple general linear hypothesis family of the procedures in which all variables are simultaneously considered, each related to all others. Factor analysis may be R-type or Q-type. In R-Type factor analysis, high correlations occur when respondents who score high on variable 1 also score high on variable 2 and vice versa. In Q-type factor analysis the correlations are computed between pairs of respondents instead of pairs of variables. Since the objective of this research was to summarize the variables, R-type Factor analysis has been applied. It studies the structure of inter relationships (correlations) among a large number of variables by defining a set of common underlying latent dimensions, known as factors. As a result variables within each factor are highly correlated with variables in that factor than with variables in other factors. This makes it possible to interpret the data from a much smaller number of factors than the original individual variables.

With Factor analysis, the analyst can first identify the separate dimensions of the structure and then determine the extent to which each variable is explained by each
dimension. Once these dimensions and the explanation of each variable are determined, the two primary uses of Factor analysis – summarization and data reduction – can be achieved. In summarizing the data, Factor analysis derives underlying dimensions that when interpreted and understood, describe the data in a much smaller number of items than the original individual variables. Data reduction can be achieved by calculating scores for each underlying dimension and substituting them for the original variables (Hair et al; 1995, p. 367).

The adequacy of sampling can be tested on the basis of following four criteria: (1) a visual inspection of the correlation data matrix can reveal whether there are sufficient correlations to justify factor analysis; (2) Anti image correlation matrix shows the negative values of partial correlations among variables. In order for true factors to exist in the data, these values must be small; (3) Kaiser-Meyer-Oklin (KMO) measure of sampling adequacy (MSA) is another measure to quantify degree of inter-correlations among the variables and appropriateness of factor analysis. The index ranges from 0 to 1. KMO should be examined for the overall matrix and also for each variable to exclude values falling below acceptable level; (4) Bartlett’s test of sphericity provides statistical probability that the correlation matrix has significant correlations at least among some of the variables.

Choice of methods used to extract factors is an important step in factor analysis. Since the objective of the study was to summarize most of the original information (variance) in a minimum number of factors ‘Principal Component Analysis’ was used. This is a statistical technique that linearly transforms an original set of variables into a substantially smaller set of uncorrelated variables, which represents most of the information in the original set of variables. A small set of variables is much easier to understand and use in analysis than a larger set of correlated variables (Dunteman; 1989, p.7).

In Principal Component Analysis, linear combinations of variables are used to account for variation (spread) of each dimension in a multivariate space. The variance of the factors is called Eigen values, characteristic root or latent root. Communality is the amount of variance an original variable shares with others. Factor loadings are the
correlations between the original variable and the factor. Guidelines exist (Hair et al.; 1995, p.385) for identifying significant factor loading based on the sample size. Squared factor loadings indicate what percentage of the variance in an original variable is explained by a factor. When the set of variables is large, as in this study; the analyst first extracts the largest and best combinations of variables and then proceeds to smaller and less understandable combinations. Hence, the number of factors to be extracted becomes an important issue in the absence of any set criterion.

The four possible criteria are ‘a priori criterion’, ‘latent root criterion’, ‘percentage of variance criterion’ and ‘scree test criterion’. In the present study, the number of factors to be extracted was finalized on the basis of ‘latent root criterion’ i.e. having Eigen values greater than 1 have been selected.

**Factor Rotation**

This is an important step in factor analysis. Factor loadings are rotated to make them more interpretable by making the loadings for each factor either large or small, not in between. For rotation, either orthogonal or oblique method can be employed. In orthogonal rotation method, the axis are maintained at 90 degrees so that the resulting factors are uncorrelated. In oblique rotation method, the axis is rotated, without maintaining the 90 degree angle between them. This makes the method more flexible. However, analytical procedure for oblique rotations is still controversial. Within orthogonal method either varimax or quatrimeax method can be employed. Varimax method simplifies the columns in a matrix whereas, quatrimeax method stresses on simplifying the rows. In the present study, orthogonal method along with the varimax method of rotation has been used. Also, varimax was retained because it is more realistic since the theoretically important underlying dimensions are not considered to be uncorrelated with each other. The varimax criterion maximizes the sum of the variances of the squared loadings within each column of the loading matrix. This tends to produce some high loadings and some near zero, which is one of the aspects of simple structure (Dunteman; 1989, p.49).

The final step in factor analysis is to name the factors. The naming of factors has been done intuitively; depending on its appropriateness for representing the underlying
dimensions of a particular factor. The naming of factors is not typically a scientific process; still some guidelines are recommended (Hair et al; 1995, p.388).

Sometimes when two sub samples (in this case working and non-working mothers) are combined the resulting correlations may be a poor representation of the unique structures of each group. Thus whenever differing groups are expected in the sample, separate factor analysis is performed, and the results are compared to identify differences that might not be reflected in the overall sample (Hair et al; 1995, p.375). Hence in this study factor analysis has been carried out for the overall sample, which is followed by the factor analysis for responses of working mothers and non-working mothers. Later the responses have been cross classified to find the differential factor structure and comparative picture has been presented.

In view of the above discussion, factor analysis has been used to condense twenty two statements related to the perception of mothers towards advertising in general, fifteen statements related to the mediation of the TV viewing habits of the children, twenty five statements related to the impact of TV advertising on cultural and social values and twelve statements related to the control and restriction of TV advertising.

**Limitations of the Study**

Any study based on the consumer survey carried out through predesigned questionnaire suffers from a basic limitation of the possibility of difference between what is recorded and what is the truth, no matter how adeptly the questionnaire has been designed and the field investigation conducted (Singh;1989, p.63). The specific limitations of the study are as follows:

- As the sample was selected on the basis of the convenience sampling, the results may not be true representative of the overall population.

- The scope of the study was restricted to the state of Punjab and the union territory of Chandigarh due to time and resources constraints. Although there is a possibility of applicability of the conclusions about parental attitude towards TV advertising to other parts of the country, no such general applicability beyond the respondents is claimed.
• Even though every effort has been made to measure the variables purported to study the attitude towards advertising, some of the variables may have been unknowingly skipped.

• The sample selected comprises of urban and economically stronger population. The composition and characteristics of rural and weaker sections of the society would definitely be different, which has not been included in the study.

• The present study is a post-hoc analysis of influence of TV advertising on children. The actual viewing of TV ads and their various impacts have not been observed; rather it is reported.

• Bias may have crept in due to the fact that responses of participants of the study may be different from those who chose not to respond.