CHAPTER – III

RESEARCH METHODOLOGY

This study is an endeavour to find the impact of TV ads on children. For this purpose TV viewing habits amongst children, their level of understanding of ads, the aspects they like about TV ads, the products they buy or request from their parents after seeing ads, their attitude towards TV ads and the influence that ads have on children has been gauged. Also, to include parental viewpoint, the attitude of mothers towards TV ads and the influence they feel ads have on children was studied. Television media has been chosen for this study due to its prime relevance from children’s point of view. In this chapter, a detailed methodology followed for the conduct of the present study is given.

In order to develop a sound theoretical framework for this research, a review of literature was undertaken. It revealed that not much work has been done in the field of influence of TV ads on children in India. Therefore, this study tried to include and extend the important parameters taken up by foreign researchers. An effort has been made to include issues that are important to Indian marketing and social environment in order to provide insights to advertisers, marketers, policy makers and society.

Hypotheses of the study

The hypotheses to be tested were framed on the basis of prior research and intuition. The broad hypotheses tested were that demographic variables of the respondents do not significantly influence their attitude towards TV ads.

The hypotheses tested in case of children were that their ability to understand TV ads; likeability and attitude towards TV ads; and impact of TV ads on them do not differ significantly by the demographic variables such as gender and age of the children.
The hypotheses tested in case of mothers were that their attitude towards TV ads does not differ significantly by the demographic variables such as education and working-status of the mothers.

**Universe of the study**

The universe of the study comprises of children and their mothers from the different cities of Punjab. The children have been selected from reputed private schools catering to middle and upper socio-economic strata. The study is confined to the state of Punjab. The three cities namely--- Amritsar, Jalandhar and Patiala have been chosen for selecting the sample. The cities represent traditional, geographical and cultural categorization of Punjab: Majha (Amritsar), Doaba (Jalandhar) and Malwa (Patiala).

**Sample and Sampling design**

It was planned to have a sample of 900 respondents; 450 children as well as their mothers were selected on the basis of convenience sampling (150 children and their mothers from each of the cities were selected for the study). But due to response errors and incomplete responses the effective sample has been 800; 400 of children and 400 of their mothers.

**Construction of the Questionnaire and Data Collection**

It was decided to collect data through personal interviews in case of children and through survey method from their mothers (by sending questionnaire through children) by instituting a structured, non-disguised and pre-tested questionnaire (refer appendix). The effective sample turned out to be 400 of children and 400 of their mothers. The questionnaire was divided into two parts. The first part was designed for children and the second part was for their mothers. To develop a list of information items that was sought from respondents, previous related literature on TV ads and children was reviewed (Hite and Eck, 1987; Unnikrishnan and Bajpai, 1996; McNeal and Ji, 1999; Pine and Nash, 2002; Wen-Ling, 2002; Oates *et al.*, 2003; Wimalasiri, 2004; Kapoor and Verma, 2005; Vij, 2007 etc.). Besides experts in the area were
consulted and also current marketing and social scenario was taken into consideration. The suggestions of experts led to many meaningful modifications. The preliminary draft of questionnaire was pre-tested on 40 respondents, including 20 children and 20 mothers. The pre-testing also led to a few but important changes. There were 26 response statements for children and 32 for mothers. Responses were measured on a five point scale with 5 indicating, “strongly agree” and 1 indicating, “strongly disagree”. While some questions were closed ended, others involved multiple-choice options. The data for the part meant for children has been collected personally from children, after developing a rapport with them. For the second part which was to be filled by mothers; children were asked to carry the questionnaires to their homes; get it filled from their mothers and bring it back within two days to submit it to their class teacher. A printed note for their mothers was attached in their school diaries, where they were requested to fill the questionnaires in a stipulated time.

SAMPLE PROFILE

The socio-economic and personal characteristics of the respondents are relevant here to be studied before going for their relationship with factors, attitudes, behaviour etc. in the following chapters. Children in the age group of 8 to 16 years and their mothers have been chosen to be the sampling unit for this study. The background information profile regarding the children is provided in Tables 3.1 to 3.4. The basic attributes about children include gender, age, class in which they study and birth order. The socio-economic background information of mothers is provided in Tables 3.5 to 3.10. This includes age, education and working status of mothers; their spouse’s occupation, family income and type of family, whether joint or nuclear.

A brief overview of the socio-economic background of the respondents under study is presented as follows:

1. Background Information Profile of Children

Table III.1

<table>
<thead>
<tr>
<th>Sex</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>206 (51.50)</td>
</tr>
<tr>
<td>Female</td>
<td>194 (48.50)</td>
</tr>
</tbody>
</table>
Note: Figures in parentheses in all the tables represent percentages

There are 51.50 per cent male children while the remaining 48.50 per cent of them are female children (Table III.1). The study sample gives proper representation to both the genders.

**Table III.2**

*Age-wise distribution of respondents* (N=400)

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-10</td>
<td>94 (23.50)</td>
</tr>
<tr>
<td>10-12</td>
<td>96 (24.00)</td>
</tr>
<tr>
<td>12-14</td>
<td>120 (30.00)</td>
</tr>
<tr>
<td>14-16</td>
<td>90 (22.50)</td>
</tr>
</tbody>
</table>

The above Table indicates that in the sample of 400 children; four age categories have been formulated in the range of 8 to 16 years old (8-10 years, 10-12 years, 12-14 years and 14-16 years). The highest percentage of them (30.00%) belonged to the age group of 12-14 years, while the lowest percentage (22.50%) of them belonged to the age group of 14-16 years old. Thus, all the relevant age groups of children are fairly represented in the sample (Table III.2).

**Table III.3**

*Class-wise distribution of respondents* (N=400)

<table>
<thead>
<tr>
<th>Class (Standard)</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>II</td>
<td>41 (10.25)</td>
</tr>
<tr>
<td>III</td>
<td>48 (12.00)</td>
</tr>
<tr>
<td>IV</td>
<td>52 (13.00)</td>
</tr>
<tr>
<td>V</td>
<td>43 (10.75)</td>
</tr>
<tr>
<td>VI</td>
<td>47 (11.75)</td>
</tr>
<tr>
<td>VII</td>
<td>37 (9.25)</td>
</tr>
</tbody>
</table>
The selected children were studying from II standard to X standard (Table III.3). The percentage of children selected range between 9.25 per cent in VII standard to 13.00 per cent in IV standard. From II standard, there are 10.25 per cent, III standard 12.00 per cent, V standard 10.75 per cent, VI standard 11.75 per cent, VIII standard 11.00 per cent, IX standard 9.75 per cent, and from X standard, there are 12.25 per cent of the total selected children.

Table III.4
Birth order-wise distribution of respondents (N=400)

<table>
<thead>
<tr>
<th>Birth Order</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only child</td>
<td>22 (5.50)</td>
</tr>
<tr>
<td>Eldest</td>
<td>76 (19.00)</td>
</tr>
<tr>
<td>Middle</td>
<td>83 (20.75)</td>
</tr>
<tr>
<td>Youngest</td>
<td>219 (54.75)</td>
</tr>
</tbody>
</table>

The Table III.4 shows that the highest percentage (54.75%) of the children are the youngest in the family, followed by middle ones (20.75%), and then the eldest children (19.00%) in the family. A very low percentage of them (5.50%) are the only child in the family. This shows that single child families are a few in the sample.

2. Socio-Economic Background Information Profile of Mothers

Table III.5
Age-wise distribution of respondents (N=400)

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 25</td>
<td>41 (10.25)</td>
</tr>
</tbody>
</table>
The Table III.5 reveals that majority of the mothers (55.50%) belong to the middle age group of 35-45 years, followed by mothers from the age group of 25-35 years (26.50%). A small number of them (10.25%) are from the youngest age group of up to 25 years old and the oldest age group of above 45 years old (7.75%).

### Table III.6
**Education-wise distribution of respondents** (N=400)

<table>
<thead>
<tr>
<th>Educational Level</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matric/10+2</td>
<td>55 (13.75)</td>
</tr>
<tr>
<td>Undergraduate</td>
<td>37 (9.25)</td>
</tr>
<tr>
<td>Graduate</td>
<td>163 (40.75)</td>
</tr>
<tr>
<td>Postgraduate</td>
<td>65 (16.25)</td>
</tr>
<tr>
<td>Undergraduate Diploma Course</td>
<td>38 (9.50)</td>
</tr>
<tr>
<td>Professional Degree</td>
<td>42 (10.50)</td>
</tr>
</tbody>
</table>

The above table indicates that overall the respondents are highly educated (Table III.6). It is encouraging to note that 67.50 per cent of the mothers are either graduates (40.75%) or post graduates (16.25%) or professionally educated (10.50%). So, there are 270 mothers whose education is above graduation and 130 mothers’ education is below graduation.

### Table III.7
**Occupation-wise distribution of respondents** (N=400)

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homemaker</td>
<td>227 (56.75)</td>
</tr>
</tbody>
</table>
Majority of the mothers are homemakers (56.75%), followed by mothers who are servicewomen (24.75%), businesswomen (10.25%), and professionals (5.75%). A small percentage (2.50%) is such who were earlier a career woman but are now a homemaker (Table III.7). So, 163 respondents are working mothers and 237 are non-working or homemaker mothers.

**Table III.8**  
Spouse’s occupation-wise distribution of respondents (N=400)

<table>
<thead>
<tr>
<th>Spouse’s occupation</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service (government/private)</td>
<td>101 (25.25)</td>
</tr>
<tr>
<td>Business</td>
<td>170 (42.50)</td>
</tr>
<tr>
<td>Professional</td>
<td>105 (26.25)</td>
</tr>
<tr>
<td>Farming</td>
<td>24 (6.00)</td>
</tr>
</tbody>
</table>

The Table III.8 reveals that the highest number of the spouses (42.50%) is businessmen, followed by professionals (26.25%), servicemen (25.25%) and farmers (6.00%).

**Table III.9**  
Family income-wise distribution of respondents

<table>
<thead>
<tr>
<th>Family Income (Rupees/Month)</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 35,000</td>
<td>34 (8.50)</td>
</tr>
<tr>
<td>35,000-45,000</td>
<td>46 (11.50)</td>
</tr>
<tr>
<td>45,000-55,000</td>
<td>59 (14.75)</td>
</tr>
<tr>
<td>55,000-65,000</td>
<td>95 (23.75)</td>
</tr>
</tbody>
</table>
The Table III.9 indicates that the sample largely comprises those from financially well-off families. The highest number of the respondents (41.50%) belong to the families with monthly income above Rs. 65,000, followed by respondents (23.75%) with family income of Rs. 55,000-65,000, 11.50 per cent with Rs. 35,000-45,000, 14.75 per cent with Rs. 45,000-55,000, and the least percentage of them (8.50%) belong to the families whose monthly income was below Rs. 35,000.

Table III.10
Family type-wise distribution of respondents (N=400)

<table>
<thead>
<tr>
<th>Type of Family</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joint</td>
<td>154 (38.50)</td>
</tr>
<tr>
<td>Nuclear</td>
<td>246 (61.50)</td>
</tr>
</tbody>
</table>

Two types of families are reported in this study that is joint family and nuclear family. There are as high as 61.50 percent of the respondents who belong to the nuclear families and the remaining 38.50 percent of them belong to joint families (Table III.10). Thus, nuclear families dominate in the social set up surveyed.

DATA ANALYSIS

Two variables are taken to examine the influence on respondent children on different aspects of TV ads. These variables are ‘sex’ and ‘age’. The respondent children are classified as under:

A. Gender
   1. Male
   2. Female

B. Age
   1. 8-10 years
2. 10-12 years
3. 12-14 years
4. 14-16 years

Similarly the respondent mothers are classified on the basis of working status and education as under:

**A. Working Status**

1. Working/ Career woman
2. Non-Working/ Home makers

**B. Education**

1. Undergraduate
2. Graduate & above

The respondent children were also classified on the basis of their school classes, type of family and birth order as already discussed. The universal statistical package called ‘statistical package for social sciences’ (SPSS-11.0) was used for data analysis and the data were organized/reorganized using Microsoft Excel 2003 and SmartSuite.

**Weighted Average Scores**

The weighted average scores (WAS) have been computed where the respondents were asked to rate, rank or express their level or degree of agreement/disagreement with same statements. For example, in a 5-point Likert scale, the scale ranges from 1 to 5. The low score indicating disagreement, dissatisfaction or unimportant while high score indicating agreement, satisfaction or important. The WAS was computed as below

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

Where :

\( W = \) Weight given to a factor/statements and
\( fW = \) Number of respondents who attached weight ‘w’ to the factor/statement
STATISTICAL TECHNIQUES USED

Students’ unpaired t-test

In order to compare two mean values, e.g. between male and female respondents, students’ unpaired 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

\[ \bar{x}_1 = \text{Mean among male respondents} \]
\[ \bar{x}_2 = \text{Mean among female respondents} \]
\[ SD_1 = \text{Standard deviation among male respondents} \]
\[ SD_2 = \text{Standard deviation among female respondents} \]
\[ S = \text{Common Standard Deviation} \]
\[ \text{S.E.} = \text{Standard Error of mean difference} \]
\[ N_1 = \text{Number of male respondents} \]
\[ N_2 = \text{Number of female respondents} \]

The same formula has been used to test the significance of difference among working and non-working or homemaker mothers and undergraduate and graduate mothers.

ANALYSIS OF VARIANCE

Two types of analysis of variance (ANOVA) have been done in the study.

(i) ANOVA for unequal number of respondents:

Generally ANOVA technique is used to compare more than two means together. In the present study, there are four age groups having different number of respondents.
i.e., 8-10 years (94), 10-12 years (96), 12-14 years (106) and above 14 years (90). The four mean values 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>$s_1$</td>
<td>$s_1/a=x$</td>
<td>$x/y$</td>
</tr>
<tr>
<td>Error (E)</td>
<td>b-a=c</td>
<td>$E_1$</td>
<td>$E_1/b=y$</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. 4 age groups

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

(ii) ANOVA for equal number of respondents

**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>Statements/Factors</td>
<td>n-1=a</td>
<td>$S_1$</td>
<td>$S_1/a=x$</td>
<td>$x/y$</td>
</tr>
<tr>
<td>Error</td>
<td>b-a=c</td>
<td>$S_2$</td>
<td>$S_2/b=y$</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>N-1=b</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Where
- n= No. of statements to be compared
- N= No. of respondents x Number of Statements (n)
- T.S.S. = Total Sum of Squares
- M.S.S. = Mean Sum of Squares (TSS/d.f.)
- d.f. = Degree of Freedom
It has been used for two different purposes. It was used to compare the mean ranking scores assigned to different factors, scores assigned to various reactions by the respondent children, and various statements within one category of respondents. These categories are total respondent children, male respondents, female respondents, working mothers, homemaker mothers, graduate mothers and undergraduate mothers. After getting the F-ratio, it was seen whether F-ratio was significant or not. If F-ratio was significant, Critical Difference (CD) was calculated to compare all the possible pairs of mean values. C.D. was calculated as under:

\[
C.D. = \sqrt{\frac{2 \times M.S.S.e}{\text{No. of respondents}}} \times t_{\text{at error d.f.}}
\]

Where M.S.S.e is the mean sum of square due to the error, denoted by ‘y’ in the previous equation.

If the arithmetic difference in any two mean values is greater than or equal to CD, then it was taken significant, otherwise non-significant. The Critical Difference (C.D.) technique has been used to find out the level of preference and to similarities/dissimilarities of agreement on a continuation of statements by the children. From the highest score of agreement, C.D. was subtracted and that becomes cut-off point for the set of similar statements with the highest agreement. Then from the highest score of the remaining statements, C.D. was again subtracted to get the second set of statements with similar level or second highest level of agreement and so on.

**Z-test:**

In order to see whether the responses of male and female children differ significantly or not i.e. to compare two proportions or percentages of respondents, Z-test, which is test of proportions has been applied as under:

\[
Z = \frac{|P_1 - P_2|}{\text{SE of } (P_1 - P_2)}
\]

\[
\text{S.E of } (P_1 - P_2) = \sqrt{p \times q \times \left(\frac{1}{n_1} + \frac{1}{n_2}\right)}
\]

\[
p = \frac{(n_1P_1+n_2P_2)}{(n_1+n_2)}
\]
q = 1 - p

Where

\[ P_1 = \text{Proportion of male children} \]
\[ P_2 = \text{Proportion of female children} \]
\[ n_1 = \text{Total number of male children} \]
\[ n_2 = \text{Total number of female children} \]
\[ \text{S.E. (} P_1 - P_2 \text{)} = \text{standard error of proportions difference} \]

**Coefficient of Correlation:**

To see the relationship between two variables, Karl Pearson’s Coefficient of Correlation (r-value) has been worked out. This was done to see the significance of relationship between age and proportions of children. Percentage of children, who watch TV for different reasons; who watch TV in the company of specific family members; who select specific differences between TV ads and programmes; who choose particular purpose behind showing TV ads; who indulge into various activities during commercial break; who pick different factors behind liking or disliking of an ad; who select specific factors for their product purchase behaviour; who buy particular products after watching ads and children who have different levels of involvement in the purchases that their parents make. It was seen whether the percentage of respondents (not number) increases/decreases significantly with the age or not. Where, variable ‘x’ is age and variable ‘y’ is the proportion of children. The age category was taken as the mid value of the age group as under:

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Used as for Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-10 years</td>
<td>9</td>
</tr>
<tr>
<td>10-12 years</td>
<td>11</td>
</tr>
<tr>
<td>12-14 years</td>
<td>13</td>
</tr>
<tr>
<td>14-16 years</td>
<td>15</td>
</tr>
</tbody>
</table>

The coefficient of correlation was computed by using the following formula:
Factor analysis

Factor analysis has been employed in the study to serve two purposes. Primarily, it has been used to assess children’s attitude towards TV ads and impact of TV ads on them. Secondly, it has been used to analyze the factors important to mothers regarding the impact of TV ads on children and their own attitude towards ads. In order to serve these objectives, the information collected through twenty-six statements in case of children and thirty-two statements in case of their mothers; has been condensed into important dimensions with the help of factor analysis.

Factor analysis is an interdependence technique in which all variables are simultaneously considered, each related to all others. Since the objective of this research was to summarize the variables, Factor analysis was 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

\[ r = \frac{\sum(x - \bar{x})(y - \bar{y})}{\sqrt{\sum(x - \bar{x})(y - \bar{y})^2}} \]

Or

\[ r(X, Y) = \frac{\sum xy}{\sqrt{\sum(x^2)(y^2)}} \]

\[ x = (X - \text{Mean of } X) \]

\[ y = (Y - \text{Mean of } Y) \]
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-Oklon (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 among at least 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 variable 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.

An important step in factor analysis is rotation of factors. 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 quaticmax method can be employed. Varimax method simplifies the columns in a matrix whereas quaticmax 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 because 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 this 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).

In view of the above discussion, factor analysis has been used to condense twenty-six statements for children and thirty-two statements for mothers into a few uncorrelated factors with the help of principal component analysis with orthogonal rotation along with the varimax option of rotation of factors.

**Limitations of the study**
Any study based on a consumer survey through a pre-designed questionnaire suffers from the basic limitation of the possibility of difference between what is recorded and what is the truth, no matter how carefully the questionnaire has been designed and the field investigation conducted (Singh; 1989, p.63).

- The study is restricted to the state of Punjab. Although there is a possibility of applicability of the conclusions about attitude towards TV ads to other parts of the country, no such general applicability beyond the respondents of Punjab is claimed.

- 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.

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

The present study may also have the traditional limitations associated with field survey research such as:

- As the sample was selected on the basis of convenience sampling, the results may not be as representative of the overall population as they would have been if the sample was randomly selected.

- Though every effort has been made to measure the variables purported to study the impact of and the attitude towards TV advertising, some of the variables may have been skipped.

- 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.