CHAPTER - 4

RESEARCH METHODOLOGY

Research is a scientific and systematic search for significant information on a specific area. According to Clifford Woody research comprises, defining and redefining problems, formulating hypotheses or suggesting solutions; collecting, organising and evaluating data; making deductions and reaching conclusions; and at last carefully testing the conclusions to determine whether they fit the formulated hypotheses. Thus, the chapter focuses on the detailed research methodology, which has been used to study the relationship between self-brand connection and other related variables among adolescent consumers. This section describes research purpose, objectives, hypotheses, research design, procedure, sample size determination, instruments design and other statistical tools used in detail.

The research methodology of this study comprised of qualitative as well as quantitative techniques. In qualitative analysis, “Who Am I”? a psychological test and collage technique has been used whereas in quantitative analysis, various statistical tests have been used like descriptive statistics, correlation, regression analysis, ANOVA, independent t-test, mediation and sobel test to justify the hypotheses proposed for the study.

4.1 RESEARCH PURPOSE:

Adolescent market has become very vital due to the sheer demographics, buying power of this incredible group and influences they have on the market. Approximately, more than 50% of India's current population is below the age of 25 (Population of India, 2017) and adolescents among them is above 243 million (UNICEF, 2011). The pester power this group has on the discretionary family income has been attracting market researchers to understand their connection with the brands they purchase. Thus, creating a need to study as to how adolescents as consumers develop a strong connection with the brands they purchase and also how their self - brand connection leads to development of brand attitude among them thereby ensuring strong product involvement. Hence, this
study has tried to analyze in detail the four key variables i.e. self-brand connection, attitude, attitude strength and involvement.

4.2 HYPOTHESES FORMULATION:

Brands play an important role especially during adolescence stage, as they start to interact more with their environment and form their identities and feel connected to brands that make them feel important and empowered. It helps in shaping adolescents perception of products as well as being a focal point for meaning and value that products have for different individuals. In the words of McCracken (1986) individuals are looking for those brands whose enlightening meanings match up to what they want to become.

The brands all the way through their representative character reveal symbols of the self. This means that consumers make use of brands as a communication tool to articulate who they are or would like to be and also show their connection with or difference from certain reference groups (Levy, 1959; Grubb & Stern, 1971). The purchase, possession and consumption of brands reveal parts of the consumer’s identity which explains the high importance that people assign to the right choice of brands. Thereby, suggesting that brands can be used to either express one’s real self or to show a person’s ideal self. The meaning embedded in products or services plays a crucial role and is often the trigger for consumers to purchase a certain good. Hence they seek to transfer the meaning associated with the brand to them. In terms of possession rituals, consumers personalise or customise items and along with take possession of the meaning of a consumer goods.

This points towards the fact that the meaning that resides within a brand is a crucial factor that influences the consumer’s purchase decision. People use brands as a tool to express themselves and reveal parts of their personality. A brand is therefore suited to be a symbol of the consumer’s personality if he perceives a fit between his own self-concept and the brand’s personality or image. Thus, from the above discussion, the first hypothesis is proposed as:

\[ H_1: \text{Brands play a significant role in communicating self - concept} \]
The primary basis of the Self-brand connection construct is that when brand associations are used to create one's self or to communicate one's self to others, a strong connection is formed between the brand and the consumer's self identity (Escalas, 2004). Self-brand connection develops between middle childhood and early adolescence and increase with age, accompanied by depth of the connection being made. As children grow up they start developing deeper self-brand connections as they believe that the brands provide a natural link to their self-concepts. Since they have more knowledge and exposure to branding campaigns, they relate their individual characteristics with their self-concept (Chaplin & John, 2005). Thus, it can be concluded that self-brand connections vary among different categories of adolescents and thus the hypothesis is proposed as:

**H₂:** There is difference in self-brand connections among various categories of adolescents

Escalas (2004) suggested that self-brand connections have a positive association with attitudes toward the brand and also influence attitudes toward an organization to which respondents are emotionally involved. One of the arguments supporting the significance of the self-brand connections construct is that consumers with highly developed self brand connections should reveal stronger and more confident brand attitudes than those with less developed brand connections. Therefore, this argument holds true that high self brand connections should predict high attitude strength (Krosnick & Petty, 1995).

The studies of attitude conception disclose that the idea that attitudes are related with persons, objects or behaviour that constitute a part of the individual’s perceived world. Thus from the above, it can be assumed that self-brand connections have a positive influence on attitude. Thus, the hypothesis is proposed as:

**H₃:** Self-brand connections are positively related to brand attitude and its strength

Attitude toward a particular product differs among by consumers depending upon their product involvement level. It is generally assumed that the attitude formation and decision making process are different among high-involvement and low-involvement consumers. Researchers studying consumer behaviour attribute a great deal of importance to the product-involvement variable. Once a brand is accepted on the basis of symbolic
attributes, the consumer becomes highly involved with the product (O'Cass, 2000; Zaichkowsky, 1985). In this process, self-congruity heightens consumers’ involvement with the product, motivating them to process the functional characteristics of the brand. In addition the biasing effect of self-congruity on functional congruity is likely to be more evident under high involvement conditions as compared to low involvement.

Therefore, it is evident from the above discussion that the measurement of involvement varies greatly. Hence the hypothesis is formulated as:

**H₄: Higher the self-brand connections higher is the product involvement.**

Self-brand connection has been referred to as a core component of affection since it reflects the meaning of attachment between the individual and the brand. When the connections among the brand and self turn to be closer the brand-related feelings become more prominent therefore as a result strong attitude is developed. Meaningful brand connections determine the intensity to which the brand is significant enough to be linked to the consumer's self-concept and psychological needs. Hence individuals with strong SBCs exhibit higher levels of attitude strength (Moore & Homer, 2008).

The attitude of the customer depends on the so called “brand self connection” (Park et al., 2010). Marketers and researchers have number of times, studied and analyzed data about customers’ attitude and how a brand is perceived (Ghosh, 1995). Therefore, when a customer has a positive attitude towards a product or a brand, they feel a stronger commitment (VonReisen & Herndon, 2011) and consider brand attitude as an essential tool if brand purchase has to occur (Percy & Rossiter, 1992).

Brand attitude strategy is seen as brilliant interaction between a potential consumer’s involvement with the purchase decision and the underlying motivation to purchase (Percy & Rossiter, 1992). This supports that brand attitude may affect consumer purchase decision. Involvement is critical factor in consumers’ purchase decision making (Russell, McColl-Kennedy & Coote, 2007). Studies have revealed that product involvement has an influence on the decision-making process concerning the purchase of a product, the degree to which consumers will search for information about the product, the time for adoption of the product, the manner in which the consumer's attitudes and preferences

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regarding the product are influenced, the consumer's perceptions of alternatives in the same product category and brand loyalty (Bauer, Sauer & Becker, 2006; Brisoux & Cheron, 1990; Celsi & Olson, 1988; Charters & Pettigrew, 2006; Iwasaki & Havitz, 1998; Leclerc & Little, 1997; Lin & Chen, 2006; Park, 1996; Park & Young, 1986; Ram & Jung, 1994; Traylor, 1981).

Thus, product involvement reflects recognition that a particular product category may be of to people's lives, their sense of identity and their relationship with the rest of the world (Traylor, 1981).

Thus, from the above discussion the following hypothesis has been proposed as:

**H5: Attitude has a mediating role on self-brand connections and product involvement.**

Researchers, who have studied consumer behaviour, attribute a great deal of importance to the three important demographic factors i.e. age, gender and income. Individual transform their preferences in products or services according to their age. Moreover, their purchases are formed throughout their life circle stages which are the phases the families go through while they develop and mature over time (Kotler & Armstrong, 1996). Gregan Paxton and Roedder (1995) have concluded that differences exist among different age groups as regards the ability to make consumer oriented decisions.

Dorota (2013) proposed that gender also causes differentiated consumption behaviour and Swarna (2012) also revealed in her study that gender plays an important role in consumer behaviour as men and women behave in a different way while selecting the products; as there exist differences in the expectations, wants, needs & life styles while “International Markets Bureau” (2010) noted gender has no influence on the buying behaviour.

Income has also been considered as a superior determinant of purchasing behaviour (Dorota, 2013). Jain and Sharma (2002) and Slama and Taschian (1985) have identified that income influences the involvement levels. The level of income influences the life style and attitude of a consumer. A person with high income purchase expensive product and these with low income prefer to buy product with lower price.
Thus, the above discussion suggests that demographic variables have an impact on consumer behaviour therefore creating a need to study whether age, income and gender also effects brand attitude and involvement.

Therefore, the above discussion proposes the following hypothesis.

\[ H_6: \text{ Attitude and product involvement do not vary across various categories of adolescents.} \]

Therefore, the study is based on the assumption that strong self - brand connection will leads to positive attitude which ultimately results in product involvement.

4.3 RESEARCH OBJECTIVES

The following seven objectives were developed based on the hypotheses framed for the study:

1. To understand the role of brands in communicating self - concept.

2. To examine self- brand connections among various categories of adolescents.

3. To study the causal relationship between self- brand connections and attitude towards brand.

4. To find out the relationship between self-brand connections and product involvement.

5. To investigate the mediating role of attitude on self-brand connections and product involvement relationship.

6. To measure the differences in attitude and product involvement across various categories of adolescents.

7. To develop and suggest a policy mechanism using self-brand connection so as to develop positive attitude and high product involvement.
4.4 RESEARCH METHODOLOGY

The research methodology used in the above research work is a combination of qualitative and quantitative analysis. Qualitative and Quantitative methods complement each other as the Qualitative research has the potential to uncover new theories and variables. Qualitative research is different from quantitative research as such research counts occurrences i.e. frequencies, statistically test hypotheses and takes place in randomized or non-randomized experimental and natural settings and generates numeric data through standardized processes, whereas, qualitative research describes the series of occurrences, seeks to make hypotheses about an experience, its precursors, and also its consequences and occurs in natural settings and generates text-based data through discussions and interpretation. Thus, qualitative research is considered as the most suitable method for revealing the belief, attitudes, emotions and motivations connected with the purchase of brands whereas quantitative research using pre-structured questionnaires fails to capture the entire scope of reasons and intentions-to-buy a particular brand.

Since this research work has been carried out on very sensitive market segment i.e. adolescents, therefore in order to understand their psychology qualitative analysis has been carried out to make the research work more realistic and comprehensible. The qualitative analysis used for conducting the study in this research work comprised of a “psychological test” and a “collage technique” and quantitative analysis comprised of various statistical tools. The section below presents a detailed methodology of the qualitative analysis.

4.4.1 QUALITATIVE ANALYSIS:

Qualitative research has seen an increased acknowledgment in the last two decades and is appropriately and extensively accepted across most disciplines such as sociology, medicine, business & economics, psychology etc (Huberman & Miles, 2002). It is a type of scientific research, which is especially useful in obtaining culture specific information about the values, opinions, behaviours, and social contexts of particular populations. It also helps us to interpret and understand the complex reality of a given situation in a better way. The strength of qualitative research is its ability to provide complex textual
descriptions of how people experience a given research issue. It provides information about the “human” side of an issue that is, often the contradictory behaviours, beliefs, opinions, emotions, and relationships of individuals. When used along with quantitative methods, qualitative research can help to interpret and better understand the complex reality of a given situation and implications of the quantitative data.

Although findings from qualitative data can often be extended to people with characteristics similar to those in the study population, gaining a rich and complex understanding of a social context or phenomenon typically takes precedence over eliciting data that can be generalized to other geographical areas or populations.

Since this study is based on psychological marketing therefore there was a need to study and analyze adolescents behaviour in a qualitative manner which in actuality gave an insight to human behaviour. It is generally accepted that consumers base their purchase decisions not only on the price and quality of the product, but to a great extent on their personal association and emotions attached to different brands. Therefore, projective techniques was appropriate to study adolescents association with brands as their intentions, unconscious feelings and behaviour could be revealed more easily through such techniques without putting them into any stress.

4.4.1a Projective Techniques:

Projective techniques are vital in breaking through the wall of rationalizations consumers use on a daily basis to justify the purchase of products or brands. These techniques present verbal or visual stimuli which explore their concealed intentions and encourage respondents to disclose their unconscious feelings and attitudes without being aware that why they are doing so (Will, Eadie, & MacAskill, 1996). These techniques are often regarded as hidden and free as the respondents are unaware of the purpose of research and the researcher does not conclude the response alternatives (Klofper & Taulbee, 1976). Thus, projective research use stimuli that permit participants to plan their personal or deep seated beliefs into other people or objects. Projective techniques are usually subdivided into five categories of methods-association, completion, construction, choice ordering and expressive (Boddy, 2007). In this particular study collage technique has
been used since many researchers in the past have mainly used collage technique to identify brands or to establish their relation with it.

4.4.1b Collage Technique:

“Everything had broken down and new things had to be made out of the pieces. Collage was like an image of the revolution within me— not as it was but as it might have been.” — Kurt Schwitters

Collage technique is a qualitative technique used to create new meanings from certain images which are gathered, selected, analyzed and presented. This technique allows participants to create visual representations of their belief or opinion. They shift ahead of the restrictions of language to more exactly and completely communicate their opinions in pictures and words. Diaz (2002) used collage as a research tool to combine images and text to create a realism and discover meaning. In the words of Knowles and Cole (2008) qualitative research has extended to include arts-based methods, such as literary techniques, performance, visual art and new media as well as folk art, to represent stories and voices traditionally silenced by textual and linguistic data collection and analysis methods. Thus, it is commonly used as an introspective process, as a form of elicitation and as a way of conceptualizing ideas.

Many researchers have conducted experimental studies in their research work especially to understand the psychological state of mind, as they believe that these studies allow respondents to generate visual representation of their beliefs or opinions. Since the above study was based on exploring the self concept of adolescent respondents in association with the brands they purchase; therefore among all the projective methods collage study was considered as the one of the best technique. It was so in view of the fact that this technique has been used by many researchers like Hogg, Bruce and Hill (1999), Chaplin & John (2005), Upadhyaya (2013) etc. in their research work.

4.4.1c Research Methodology:

The qualitative study used here is a combination of studies comprising of psychological testing (Study 1) and collage technique (Study 2).
Study 1:

It comprised of a especially well admired psychological test “WHO AM I?” which was conducted on the respondents. This test has been used in child psychology to determine self-concept (Kuhn & Thomas, 1954; Stipek & Douglas, 1989; Wang, Michelle, & Sheldon, 1998). The main aim of this test was to ascertain a perception about the role that brands play in defining, establishing and communicating self-brand connection amongst adolescents.

Sample:

This study was conducted between two different age groups of adolescents i.e. 11-14 years and 15-17 years and to categorize sample systematic sampling technique has been used. The sample was selected by selecting a random starting point and then picking every 5th student from the classes i.e. 6th to 12th. The sampling interval was determined by dividing the total students in the different sections of the classes (6th to 12th) by the sample size required and rounding to the nearest digit. In the age group of 11-14 years forty students and thirty students in the age group of 15-17 years in a school in Jammu were taken as sample for the concerned research. The sample had an equal representation of boys and girls for the experimental study.

Procedure:

The participants were explained the task in an elaborative way and to make it easier it was divided into two parts. Initially, they were first given a written test, i.e. a very well established child psychology test i.e. “WHO AM I?” and were asked to write at least twenty statements unfolding their self. The subsequent task was more exact to brands. Participants were given choices to state brand of every product category with which they associate themselves or which is most precise in answering the question “WHO AM I?”

Experimental study:

The participants were asked throughout the experiment to express themselves in terms of their self - concept. They were provided blank sheets and were given free hand to write whatever thing which described them by commencing the statement with “I am........”.
This action was aimed at identifying as to how they express themselves, and appraise their personality and their association with brand patterns. Students wrote about their favourite sports, hobbies, likes and dislikes, about their looks, area of interest, personality traits, actors, actresses, favourite food points and favourite brands etc.

For eg: I am interested in playing computer games.

I am hardworking.

I am fond of wearing fashion clothes.

**STUDY 2:**

The 2\textsuperscript{nd} study was a very exhilarating collage study. The respondents were asked to prepare a collage to get a better understanding of the self-brand connection. This study was more elaborative as it was done firstly, to find out brand awareness among this age group and also to discover which brands were more popular amidst them. Secondly, to analyse how the adolescents in these age group relate their self-concept i.e. their personality traits, hobbies, sports, actors etc. with their favourite brands thereby forming a strong connectivity with brands.

**Sample:**

Since this was a variation of the first study, as a result, the same sample was used to identify the self brand connection among adolescents.

**Procedure:**

All the participants were given explanation of the task in detail that they were made-up to do and were asked to construct a collage to answer the question “WHO AM I?.” Consecutively to make the job easier, they were provided with five ‘paste –it’ sheets, each sheet signifying a varied category like hobbies, sports, personality trait, movie actors and brands on the basis of responses given by the respondents in “WHO AM I?” psychological test. Each paste-it sheets contained fifteen stickers e.g. travelling, dancing, cycling etc were included in hobbies; down to earth, hardworking, stubborn etc were included in personality traits; hockey, skating, cricket etc. were included in sports;
Salman, Kareena, Deepika etc as favourites actors and also one blank sticker sheet to write down name of different brands they are aware of. They were provided with blank sheets and one by one each paste-it sheets with stickers were given to each of them and were asked to opt among the pictures and labels and stick them on the blank sheet to complete a collage. To ensure that they have wider choices they were also given an option to do addition by writing anything in the categories mentioned above on the blank sticker. The whole time specified to the respondents to complete the task was 30 minutes. The above qualitative study was done to establish the first hypothesis framed for the study.

4.4.2 QUANTITATIVE ANALYSIS:

4.4.2a Questionnaire Design and Development

As the present study is consumer based therefore the primary data has been collected using the survey method. A structured questionnaire was developed, pretested and personally administered to the target population comprising of adolescent consumers. The questionnaire was developed using seven point likert scale comprising of 43 items i.e. 3 items were related to demographic profile and 40 items for measuring four main variables under study namely:

1. Self - Brand Connection (7 items)
2. Attitude (6 items)
3. Attitude Strength (7 items)
4. Involvement (20 items)

The standardised scale has been used for the study. The Escalas (2004) seven item scale has been used for measuring Self-Brand Connection, for measuring Attitude Stayman and Batra (1991) scale has been used, for measuring Attitude Strength items from Krosnick et al. (1993) has been used and Zaichowsky (1985) scale has been used for measuring Involvement. The various measurement items for each scale are presented below:
Self-Brand Connection

1) Brands that I use reflects who I am.

2) I can identify with the brand I use.

3) I feel a personal connection with the brands I use.

4) I use brands to communicate who I am.

5) I think brands can help me what I want to be.

6) These brands reflects who I consider myself to be or the way that I want to present myself to others.

7) Brands suit me well.

Attitude

1) unpleasant - pleasant

2) unfavourable - favourable

3) like - dislike

4) low quality - high quality

5) worthless - valuable.

6) disagreeable - agreeable

Attitude strength

1) I am very certain about my attitude towards branded products.

2) I have a firm opinion towards brands.

3) My attitude is intense towards brands.

4) I have a strong attitude towards branded products.
5) I personally consider my attitude very important for branded products.

6) My attitude towards branded product means a lot to me.

7) I am very interested in obtaining information about branded products.

Involvement

1) important – unimportant

2) of no concern – of concern to me

3) irrelevant – relevant

4) means a lot to me – means nothing to me

5) useless – useful

6) valuable – worthless

7) significant – insignificant

8) beneficial – not beneficial

9) matter to me – doesn’t matter

10) vital - superfluous

11) boring – interesting

12) uninterested – interested

13) exciting – unexciting

14) appealing – unappealing

15) essential – nonessential

16) undesirable – desirable

17) wanted – unwanted
18) not needed – needed
19) mundane – fascinating
20) trivial – fundamental

4.5 PRETESTING AND FINAL INSTRUMENT:

The Pretesting of the initial questionnaire was done by collecting responses from 200 adolescent consumers in Jammu only. The results of the pilot study suggested that the instrument was satisfactory but few changes were required to make the scale easier for adolescent respondents to make it understandable and convenient to respond. The final questionnaire was prepared using a seven point likert scale consisting of 36 items covering the following dimensions: Self-brand connection, Attitude, Attitude Strength and Involvement.

The SBC scale was initially comprised of 7 items. All the items were easily understandable for them except 6th item i.e. these brands reflect who I consider myself to be or the way that I want to present myself to others. Even the statement was reframed but adolescents were not able to relate it with them, thus, from the final questionnaire this item was deleted. The involvement scale used for the study was initially a bipolar scale comprised of 20 items (Zaichkowsky, 1985). However, to make it simple for adolescents the items in bipolar scale were converted into statements form so that the adolescents from different age groups were able to understand it easily. Positive as well as negative statements were included in the final questionnaire to check that responses were authenticated After pilot testing it was found that two of the items in the scale were just the repetition of the above items therefore those two items were deleted from the final questionnaire and the final questionnaire comprised of 18 items.

The attitude scale was comprised of 6 items and was a bipolar scale, thus to make it simpler and understandable among the young respondent whose age group was between 11-17 years it was again converted into statement form. One item was dropped from the scale as it was not appropriate.
The attitude strength scale included the main 7 items.

The final questionnaire comprised of 39 statements and language was also modified as per convenience of the adolescent respondents.

After the questionnaire was finalised, it was checked for reliability and validity. Therefore, the data was subjected to techniques like reliability analysis to find out whether the scale was reliable. For this purpose Cronbach’s alpha coefficient for each item was calculated using statistical package for social sciences (SPSS) version 23.0. The result of the data analysis have suggested that all the variables have coefficient value over the Nunnally’s (1978) recommended internal consistency threshold of 0.70, thereby concluding that the scales were reliable for conducting this study.

The final instrument was framed using a seven point likert scale consisting of 36 (+3 demographic) statements covering the dimensions like self - brand connection, attitude, attitude strength and involvement. All the dimensions were measured on a scale of 1 to 7 where 1 represented Strongly Disagree and 7 represents Strongly Agree.

The various measurement items are presented in the following section:

**Self - Brand Connection**

1) Brands that I use reflects who I am.
2) I can identify with the brand I use.
3) I feel a personal connection with the brands I use.
4) I use brands to communicate who I am.
5) I think brands can help me what I want to be.
6) Brands suit me well.

**Attitude**

1) I believe branded products are pleasant.
2) I favour branded products.

3) I like branded products.

4) I feel branded products are of high quality.

5) Branded products are valuable to me.

**Attitude strength**

1) I am very certain about my attitude towards branded products.

2) I have a firm opinion towards brands.

3) My attitude is intense towards brands.

4) I have a strong attitude towards branded products.

5) I personally consider my attitude very important for branded products.

6) My attitude towards branded product means a lot to me.

7) I am very interested in obtaining information about branded products.

**Involvement**

1) Branded products are important to me.

2) I am very concerned about them.

3) Branded products have relevance in my life.

4) They mean a lot to me.

5) I believe they are quite useful to me.

6) I consider them valuable.

7) Branded products have no significance in my life. (*)

8) I consider branded products beneficial.
9) It matters to me when I look for them.

10) Branded products are vital to me.

11) While purchasing branded products I get bored. (*)

12) They have lot of significance in my life.

13) Branded products create excitement in me.

14) They are appealing.

15) I consider them essential.

16) I have desire to purchase them.

17) I want to have different brands.

18) I need branded products.

Note- * denotes negative statements

DEMOGRAPHIC PROFILE:

Demographics:

1) Gender  a) Male  b) Female

2) Age  a) 11-14  b) 15-17

3) Household Income  (monthly income)  a) less than 1 lakh  b) between 1-5 lakhs  c) more than 5 lakhs

4.6 SAMPLING:

The data was collected using convenience sampling technique. The responses were collected from 834 adolescents from three areas of north India i.e. Jammu and Kashmir, Delhi and Punjab. The questionnaires were distributed among students in different schools located in urban cities of these areas and were administered personally.
The sample size was calculated by using the sampling by proportionate method with 95% confidence level and margin of error of 3 percent. The total adolescent population of India is 253 million approximately. Among them 204.2 million (i.e. 80.7%) reside in rural area and 48.576 or 49 million (i.e. 19.2%) resides in urban area, on the basis of data provided by census (2011). Since the brand awareness level is higher among urban population rather than rural population, therefore adolescent consumers residing in urban area were considered for calculating sample size. To confirm that the sample size of 834 was adequate, calculation of sample size was determined as follows, using the maximum percentage of urban population($\pi =0.19$). It is so due the fact that the secondary data analysis clearly showed that around 19 percent of the total population resides in urban area. Therefore, the value of $\pi$ was considered to be 0.19. The precision of D in this study is 0.03 for 95 percent confidence level.

The sample size has been arrived at by using formula (Malhotra & Dash, 2009):

$$n = \frac{\pi \cdot (1-\pi) \cdot Z^2}{D^2}$$

$$n = \frac{0.19 \cdot (1-0.19) \cdot (1.96)^2}{(0.03)^2}$$

$$n = 656.91 \text{ or } 657 \text{ (app.)}$$

Where $\pi =$ percentage of population residing in urban India as per census 2011

$Z =$ value associated with the level of confidence (95%)

$D =$ desired level of precision

The total population size of adolescents in J&K is 1,25,48,962 crores, in Delhi it is 1,67,53,235 crores and Punjab it is 2,77,04,236 crores. According to census 2011, in J&K 21% of population is that of adolescents, in Delhi it is 21% and in Punjab 19% of the population comprised of adolescents. Since only urban population has been taken into
consideration, therefore, after calculating adolescent population from total population size, urban adolescent population is calculated @19%.

<table>
<thead>
<tr>
<th>Areas</th>
<th>Total Population</th>
<th>Total Adolescent Population</th>
<th>Urban Population (19%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>J &amp; K</td>
<td>1,25,48,962</td>
<td>26,35,282.02 (21%)</td>
<td>5,00,703.584</td>
</tr>
<tr>
<td>Delhi</td>
<td>1,67,53,235</td>
<td>35,18,179.35 (21%)</td>
<td>6,68,454.076</td>
</tr>
<tr>
<td>Punjab</td>
<td>2,77,04,2376</td>
<td>52,63,804.84 (19%)</td>
<td>10,00,122.92</td>
</tr>
</tbody>
</table>

Therefore, data collected from J&K = \(657 \times \frac{500703.584}{2169280.58} = 151.64\) or 152

data collected from Delhi = \(657 \times \frac{668454.076}{2169280.58} = 202.45\) or 202

data collected from Punjab = \(657 \times \frac{1000122.92}{2169280.58} = 302.90\) or 303

During pilot testing, it was found that adolescents group of respondents gave same responses or more often they were not serious in filling questionnaire therefore few extra questionnaires were distributed among them to get more accuracy in data collection.

Total 300 questionnaires were distributed in J&K, 300 in Delhi and 500 in Punjab thus in totality 1100 questionnaires were distributed and after preliminary examination, 834 questionnaires were found to be complete and valid constituting 75.81% response rate.

4.7 OUTLIERS AND NORMALCY OF DATA

4.7.1 Outliers

Outliers are those observed data, which entirely differ from other population of the sample. The data which are considerably diverse from the sample population are outliers (Barnett and Lewis 1994). It can happen by chance in any observation, but generally, they represent the effects of measurement error or that the population has a heavy-tailed distribution. Outliers being the most unusual data may comprise of the sample maximum or sample minimum or both, depending on whether they are extremely high or low. However, the sample maximum and minimum are not necessary outliers as they may not be usually distinct from other observed data.
4.7.2 Normalcy of Data

The term normality is the most fundamental assumption, referring to the shape of the data distribution for an individual metric variable and its correspondence to the normal distribution. Basically, it is a test to determine whether a group of data is well-structured by normal distribution or not and the assessment of normality is pre-requisite before applying any statistical test. Statistical tests (numerical test) of normality were conducted, as they provide objective way of examining normality. The tests used were Kolmogrov-Smirnov test and Shapiro-Wilks test.

4.8 STATISTICAL TECHNIQUES

The data collected from 834 respondents were coded as per the requirement and simultaneously fed into MS-Excel 2007 spread sheet and then transferred to SPSS-23 data editor file for further statistical processing. The various statistical tools used for conducting the study are:

MEASUREMENT OF CENTRAL TENDENCY (MEAN):

Measures of central tendency acquaint us the point about which items have a inclination to cluster. It is also known as statistical average. Such a measure is considered as the most representative figure for the entire mass of data. Mean, median and mode are the most popular averages. This measure is mainly used for summarising the essential features of as series and for data to be compared. It is amenable to algebraic treatment and is used in further statistical calculations. In this study, measure of central tendency (Mean) was used.

MEASURE OF DISPERSION (STANDARD DEVIATION):

An average can stand for a series only to some degree and cannot reveal the entire story of the fact under study. It fails to give an idea about the scatter value of the items of a variable in the series around the true value of an average. In order to measure this scatter, statistical dispersion is calculated. Standard deviation is the most widely used measure of dispersion of a series.
CORRELATION ANALYSIS:

Correlation is a statistical tool, which helps in analyzing the proximity of a association between the variables. It, therefore, focussed towards measuring the degree of association of two variables. That is why it has been used to examine the relationship between different variables of the study.

REGRESSION ANALYSIS:

Regression Analysis is a statistical tool with the help of which the estimates of the dependent variable are derived from the values of one or more independent variables. It is used for finding the ‘line of best fit’ for one dependent base on one or more independent variable. the formula for regression analysis is

\[ Y = a + bx \]

Where,

\( Y \) = dependable variable
\( X \) = independent variable

In the present study, regression has been used as a tool for studying the relationships among the variables involved in the research process and hence the dependent and independent variables have been assigned according to the relationship to be analyzed.

PERCENTAGE ANALYSIS:

This technique has been used to calculate the percentage of the demographic profile of the respondents.

RELIABILITY ANALYSIS OF MEASUREMENT SCALES:

The reliability analysis of various measurement scales was done using Cronbach’s Alpha method. The Alpha values of all the scales were above 0.7. All those variables that were over the Nunnally’s (1978) recommended minimal internal consistency threshold of 0.70 have been considerable reliable for use.
ANALYSIS OF VARIANCE (ANOVA):

ANOVA or Analysis of Variance is used as a test of means of more than two populations. It uncovers the main and interaction effects of classification of independent variables on one or more independent variables. In the present study, the data was subjected to ANOVA test in order to analyze the variation in self brand connection with respect to the income groups.

INDEPENDENT T-TEST:

The independent t test is used to compare the mean of one sample with the mean of another sample in order to see if there is statistically differences between the two. In the present study, the data was subjected to Independent t-test in order to analyze whether the sample of males and females differ with respect to self brand connection and also to find out how self brand connection differs among two different age groups.

MEDIATION ANALYSIS:

Mediation effect was studied to find out how attitude act as a mediator among self brand connection and Involvement. For studying this Baron and Kenny (1986) method was followed and Sobel test (1982) was used. The purpose of the Sobel – Goodman tests was to test whether a mediator carries the influence of an IV to a DV. A variable may be considered a mediator to the extent to which it carries the influence of a given independent variable (IV) to a given dependent variable (DV). Generally speaking, mediation can be said to occur when (1) the IV significantly affects the mediator, (2) the IV significantly affects the DV in the absence of the mediator, (3) the mediator has a significant unique effect on the DV, and (4) the effect of the IV on the DV shrinks upon the addition of the mediator to the model.

Thus, the present research work has been done using qualitative analysis comprised of psychological test and collage technique and also various statistical techniques like correlation, regression, ANOVA, Independent t-test etc in order to examine the data collected from the primary source. The detailed analysis has been presented in Chapter-V.
CONCLUSION:

The research methodology chapter explains the various tools and techniques used in the present study to analyze the relationship between the different constructs of the study. It also describes the rationale behind the study, its objectives and hypotheses framed and further explain in detail the research design, procedure, sample size, and various other tools used to achieve the objectives of the study.
REFERENCES:


