Section -3

Research Method
4.1 Introduction

Impulse purchase of behavior of consumers is a specific type of behavior exhibited while shopping. It is of great advantage to retailers to know what influences the impulse purchase when shoppers are in action. In this chapter discussion is focused on understanding the theoretical framework developed by previous researchers on factors influencing impulse purchase. On this basis suitable hypotheses pertaining to research objectives are framed.

4.2 Impulse purchase behavior and In-store factors

Rook and Fisher (1995) claimed that individuals' impulse purchase tendencies could be conceptualized as a consumer trait, therefore, impulse purchase is considered as a construct that embodies consumers' tendencies both to think and to act in identifiable and distinctive ways, i.e. the tendency of consumers to buy spontaneously, unreflectively, immediately, and kinetically. As Paco Underhill (1999) puts it “If we go into stores only when we needed to buy something, and if once there, we bought only what we needed, the economy would collapse.” As retailers in traditional brick- and-mortar stores have realized the importance of impulse purchase phenomenon, they have developed strategies to encourage their customers to make more impulsive purchases, for example through in-store promotions, store packaging, and store layouts (Dholakia, 2000).

The present study investigates the assumption that impulse purchase tendency is influenced by in-store factors. The affect and evaluation normally takes place after the customer has entered the store (Newman & Cullen, 2002). It has been found that attitude and affect together influence the purchase decision in side the store, Figure 4.1. An in-depth thematic analysis of 32 interviewers (Dittmer and Drury, 2000) found that impulse purchase has more complex meanings beyond what can be measured in survey research. Previous Studies (Hausman, 2000) has indicated that almost 90 percent of people make
occasional impulsive purchases and between 30 percent to 50 percent of all purchases were classified by buyers themselves as impulse purchases.

**Figure 4.1: The Nature of Attitude**
Source: (Newman & Cullen, 2002)

### 4.2.1 Measurement of Impulse purchase behavior

Early research on impulse purchase had not incorporated any theory-driven nor validated measures of impulse purchase behavior and more specifically influence of in-store factors on impulse purchase behavior, and for that reason formulating a general conclusion from previous findings was not a simple task. Apparently, studies of impulse purchase tendency and its relationships to in-store factors could only generate more conclusive inferences because most studies consider in-store factors only as intervening variables and not as primary variables of study. Research on impulse purchase did include measures of impulse purchase tendency (Beatty & Ferrell, 1998; Puri, 1996; Rook & Fisher, 1995; Wood, 1998). However, some of those measures had only limited number of items; some others consisted of items that focused on general impulsiveness instead of specifically targeting the act of impulse purchase; and the rest included items that have yet to be validated.
The purchase impulsiveness scale (Rook & Fisher, 1995) and the impulse purchase tendency scale (Beatty & Ferrell, 1998) have incorporated items that represent the most salient nature of impulse purchase (i.e., strong emotional urges and lack of deliberation). However, even these measures have not been able to cover the entire scope of impulse purchase episodes. In order to develop a measure that substantially captures the whole essence of impulse purchase tendency, the current study will analyze impulse purchase process in actual purchase conditions; situations that surround a shopper while on a shopping spree and having actual encounter with products. More importantly in a situation when the impact of stimulus which are called as in-store factors in this research that causes arousal leading to behavior are most active.

Since development of scale to measure impulse purchase behavior is a subjective there is no consensus among researcher about any standard scale for measurement of impulse purchase behavior. However many researchers believe that a multi item scale having internal consistency of 0.6 measured through Cronbach’s alpha could be a suitable scale to measure consumers attitude (Nurnally, 1967). The items constructed for impulse purchase scale to be used for this research are based on several items form the previous measures of impulse purchase behavior scale developed by earlier researchers (e.g., Beatty & Ferrell, 1998; Rook & Fisher, 1995) .Based on above discussion a construct consisting of fourteen items to be analysed on five point Likert scale is given below.

### 4.2.2 Fourteen Item Impulse purchase Scale

1. I sometimes feel guilty after having bought something.
2. I am not the kind of person who “falls in love at first sight” with things I see in shops.
3. I am a bit reckless in purchase things.
4. I find it difficult to pass up a bargain.
5. I sometimes cannot suppress the feeling of wanting to buy something.
6. I can become very excited if I see something I would like to buy.
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7. I sometimes buy things because I like purchase things, rather than because I need them.
8. I only buy things that I really need.
9. I like to compare different brands before I buy one.
10. I usually only buy things that I intended to buy.
11. I often buy things without thinking.
12. It is a struggle to leave nice things I see in a shop.
13. If I see something new, I want to buy it.
14. I usually spend more than I have budgeted for a shopping trip.

In accordance with the objectives of this study, the composed impulse purchase tendency scale was consequently correlated with the factors causing immediate arousal available inside the store (i.e., store layout, POP display, visual merchandise, sales person’s interface, design, in-store offers, etc.). In addition, validation of belief that a longer stay in a store leads to higher probability of impulse purchase is also included in analysis.

Though impact of demographic factors on impulse purchase tendency is not included in primary objectives of this research, but previous researchers had done substantial work on this; so brief mention of this inevitable. Previous research has found that individual’s impulsive purchase behavior tendencies are related well to demographic characteristics, such as consumer’s age and gender (Medhavi, 2008). In relevant studies on impulsivity, in general younger individuals have been found to have higher impulse purchase tendencies compared to older individuals. However, this inverse relationship between age and impulse purchase tendency seems to be non-monotonic, because between the age of 18 and 39 impulse purchase slightly increase, then it declines afterwards (Wood, 1998). This is consistent with the findings of other researchers that shoppers under the age of 35 were more prone to do impulse purchase compared to those over 35 years old. These findings suggest that as consumers grow older, they may learn to control their impulsive purchase tendencies, considering that older individuals demonstrate greater regulation of emotional expression than do
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younger adults (Kacen & Lee, 2002). Collectivism and individualism had also been deliberated earlier by researchers in India and abroad. It has been found that outcome of research conducted in India are in non-conformity with those conducted in western countries (Medhavi, 2008; Vanniarajan, 2006). Therefore impacts of demographic factors are also studied in this research.

4.3 Identification of independent variables – The In-store Factors

One of the objectives of this study is to develop a scale to measure the impact of in-store factors on impulse purchase behavior of shoppers. The items of this scale are constructed to capture the changes in impulse purchase behavior under the influence of in-store factors (e.g., Visual merchandising, Promotional Schemes, and Discount Pricing). Items published by other researchers (e.g. Beatty & Ferrel, 1998; Rook & Fisher, 1995) for similar studies are major source of guidelines for developing the items of this scale.

The generation of the items by other researchers was initially based on breaking the impulse purchase process down into consumer decision making phases (Schiffman & Kanuk, 2000; Staat, 1997). In principle, this stage of spontaneous consumer decision-making process occurs while shoppers browse inside the store leading the decision to buy on impulse.

Pre-purchase processes concern with how consumers reach decisions, could be better understood if the purchase process is further divided into following three activities: need recognition, pre-purchase search, and evaluation of alternatives. These processes are very much influenced by external factors (e.g., brand-name, promotion, price, influence of others). The processes that lead to an impulsive purchase decision are assumed to be very rapid, characterized by the lack of planning and no deliberation, and do not follow the rational decision-making model such as the theory of reasoned action and the theory of planned behavior (Fishbein & Ajzen, 1975; Ajzen, 1988). In the first stage of the customer’s attitude formation there is usually some information that influence judgment. The assessment data is gathered by human senses: Visual, Olfactory, aural and tactile (The sense of sight, smell, hearing and touch) (Newman &
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Cullen, 2002). At this stage of the process of impulse purchase, attitude accessibility appears to play an important part i.e., consumers with highly accessible positive attitudes towards a product are very likely to buy it on impulse (Fazio, 1986; Petty et al., 1991). Consequently, implicit attitudes (i.e., evaluations that have unknown origin but resides inside the store are activated automatically) also influence the preferences and uncontrollable urges to purchase a product (Wilson et al., 2000). It seems knowing these unknown and silent sellers are of great importance to store managers.

The purchasing processes are experiences that consumer goes through at the point of the sale wherever and whenever they may be. These are the processes that are imbibed in actual behaviors of impulse purchase. At this stage, emotional arousal apparently takes the prominent role as the driving forces of impulse purchase and this could be considered as instance of an automatic behavior. Another research has indicated situational factors are causes of impulsive purchasing. Further same researcher deliberated that some people, being exposed to specific environmental cues, i.e. purchase situations, may (non-consciously) activate the impulsive system (Vohs & Faber, 2007). What store managers could do is to manage these environmental cues to influence impulse purchase behavior of shoppers.

Post-purchase processes are the consumer’s experiences with the product purchased which leads to the consequences of the purchase decision, i.e., satisfaction or dissatisfaction with the product. Impulsive purchases typically lead to regret at this stage. The anticipated regret paradigm predicted that the anticipation of regret would lead to less impulsive purchases. The typical impulse buyer may experience regret afterwards, but did not anticipate it beforehand, or there are other considerations that overcame the anticipated regret.

Earlier researchers indicated that certain factors play important role in influencing shopper’s impulse purchase. Many researches were conducted to identify factors influencing impulse purchase behavior. Stern (1962) identified a set of nine factors that affect impulse purchase behavior. These factors are (a) Low Price (b) marginal need for item (c) mass distribution (d) self-service (e)
mass advertising (f) prominent store display (g) short product life (h) small size or light weight and (e) ease of storage. Researchers had even tried to classify product as impulse purchase or non impulse purchase (Boone and Kurtz, 1999). A cheap product and frequently purchased product that need little cognitive effort are considered as impulsive purchase product (Rook and Hoch, 1985; kollat and willet, 1967). The pleasure involved in shopping also influence impulse purchase behavior. The shopping becomes pleasant through store characteristics such as good design, ample parking space, entertainment, store climate and decoration etc. (Beatty and Ferrell, 1998). It as been found that in addition to personality traits a myriad of other factors are likely to interfere with completion and fulfillment of one’s impulse purchase behavior intentions (Jeon, 1990) Retailers attempt to enhance the overall quality of the multi-sensory shopping experience to satisfy the shopper’s hedonic pursuit of pleasure. Bloch et. al. (1989) claimed that consumers often resort to browsing activity to obtain recreational benefits. In a study conducted at retail outlets it was found that trained, well informed and courteous sales people could positively influence the impulse purchase behavior of buyers of cosmetics and beauty products. It was suggested that retailers could improve shopping experience, navigation in side the store and product search by keeping trained beauty consultants and by putting adequate signs and labels whenever some relocation of products takes place (Gutierrez, 2004). A research investigation on finding out whether sales promotion and “deal-proneness” of consumers is associated with impulse purchase was conducted (Narasimhan, Neslin & Sen.1996). Though no statistically significant relationships could be established between them, still it is an important in-store determinant of impulse purchase behavior and further investigation is solicited on this.

Creating variety in the store with frequent changes of display and movement of regularly sold merchandise also entices customers. Recognizing items that typically make a minimal contribution to sales and replacing them with items that create “sales appeal” increases the likelihood of impulse sales. Displays that tie in with a national slogan or storewide theme generate interest, as do displays that highlight special products and services.
There was a study conducted by “Sales & Customer Service Department” of Texas Agricultural Extension Service Texas A&M University System College Station, Texas”. According to this study the researchers find the tips to increase the impulsive sales of the flowers. The findings of the study proposed following tips for boosting Impulse Sales:

1. Use color to create original, eye-catching displays.
2. Use themes to create interest in unusual products and renew interest in everyday items.
3. Keep undecorated plants available to attract consumers who are purchase for themselves.
4. Create displays that emphasize special product or services.
5. Change stock and displays often so consumers are drawn into the department each week.
6. Be flexible enough to change an item or arrangement that isn’t selling.
7. Have a person on hand to provide information and assistance at all times.
8. Create a friendly, comfortable atmosphere with accessible displays that encourage browsing.
9. Offer only quality plants and floral arrangements.
10. Situate the department so that customer knows where it is and can see it from most areas of the store.

From above discussion a list of variables which are expected to influence IPB during shopping could be prepared. These variables are independent variables of study as they are expected to produce differential influence on shopper’s impulse purchase behavior. These variables are written in form of statements so that they could be used as items of scale for measuring shopper’s attitude towards impulse purchase under their influence.
Independent Variables in statement form:
These variables are written in statement form so that they could be used in questionnaire for capturing shopper’s opinion.

1. An attractive price of product affects my impulse purchase behavior.
2. Discount offers regarding product attracts me to buy.
3. Products with various schemes such as buy one get one free, free trial pack of new product etc prompts to buy.
4. Promotional schemes like lucky draw, movie ticket, discount coupon motivates me to make immediate purchase.
5. Any event organized in the store influence me to buy even though not much needed immediately.
6. Proper display of products on the shelves in store attracts my attention for closer examination.
7. Window display generates interest and prompts to buy.
8. Display of products at billing counter engages me to buy it.
9. Packaging of products attracts me towards itself and prompts me to buy the products.
10. Placing of products attracts my attention and engages me to buy.
11. I buy products which are compatible with the products I am purchase.
12. Behavior of sales person affects my impulse purchasing decision.
13. The person with whom you have gone for shopping may motivate to buy something seen in the store.
14. Comments of co-shoppers motivate me to try out a product
15. Various festive offers known while shopping in the store induce me to buy
16. Product evaluation and trail by co-shoppers motivate me to try out a product
17. In store advertisement through CC TV and banner displays motivate me to buy
18. Self service facility available at stores causes me to shop freely and buy products even though not needed immediately.
19. Ease to examine the products prompts me to buy
20. I abstain from shopping if shop is highly crowded.
21. Basic amenities like toilet and Drinking water encourage me to stay longer in the store and browse products of interest.

22. Staff attitude and willingness to help motivates me to try out products no initially intended for purchase.

23. Proper display of information about products many times motivates to purchase

24. Liberal Exchange and refund policy of the store induces me to buy something which was not in my mind while entering the store

25. Waiting time in the billing queue attracts me to new products to buy them.

26. Free home delivery has influence on my in-store purchase decision

27. Sales person’s product knowledge is instrumental in making a product's purchase decision which was not initially in the shopping list.

28. Store climate is important to evaluate and buy products that were seen after entering the store.

29. Pleasant store lighting and decoration is important to evaluate and buy products that were seen after entering the store.

30. Product visibility in the store influence purchase decision of product which was not initially in the shopping list.

31. Festive season ambiance has influential impact on making in-store purchase decision.

32. Trail facility motivates me to buy a product.

33. Image of the store makes me feel comfortable while making in-store purchase decisions for products initially not in the shopping list.

4.4 Method for generation of In-store factors

Factor analysis (FA) and Principal Components Analysis (PAC) are techniques used when the researcher is interested in identifying a smaller number of factors underlying a large number of observed variables. Variables that have a high correlation between themselves, and largely independent of other variables, are combined into factors. PCA and FA are commonly used for
developing objective instruments for measuring constructs which are not directly observable in real life.

Factors are produced by FA, while components are produced by PCA. Both FA and PCA essentially are data reduction techniques. Mathematically, the difference is; variance of the observed variables is analyzed in PCA whereas in FA, only shared variance is analyzed. Even though PCA is different from techniques of FA, at many places it is treated as one of the FA techniques.

The procedure for developing measures suggested by Churchill (1979) and the scale development paradigm recommended by Gerbing and Anderson (1988) and Malhotra (2009) were employed in developing and validating the in-store factors scale. For the purpose of generating variables of factor analysis, an extensive literature review was conducted that provided the initial checklists of 33 items which were initially referred as variables for factor analysis. These 33 variables are believed to have relation with dependent variable i.e. impulse purchase behavior. These variables are required to be converted into factors in such a way that factors become their representatives. This will be done through above mentioned Factor analysis technique. This will help to develop basis for hypothetical model of this research.

As mentioned above factor analysis is a technique which is deployed to cluster variables into factors. The variables identified for factor analysis are based on exploration of available literature on this subject, and not taken completely from any existing framework. FA technique used is exploratory factor analysis (EFA). EFA is used for exploring the underlying dimension that could have caused correlations among the observed variables. Exploratory factor analysis is so common technique of factor analysis that many researchers use these two terms synonymously (Gaur & Gaur, 2007).
Hypothetical Frame work:

In – Store Factors (ISF)

ISF 1

ISF 2

ISF 3

ISF 4

ISF 5

ISF …..

ISF N

Time Spend In-Store

Impulse Purchase Behavior

EXIT

Figure 4.2 – Hypothetical frame work of current research

Factor Analysis produces factor loading for each combination of extracted factor and the observed variables. Factor loading will be helpful to find out the association between factor and variables; higher the factor loading it is more likely that a factor underlying represent that variable. So factor loading will help to identify set of variables that are associated with the particular factor (Gaur & Gaur, 2007; Cooper & Schindler, 2004).

Rotation is an important aspect of factor analysis because un-rotated factor loading are extremely hard to interpret due to multiple loading of variables with factors. Rotation helps to arrive at a simple pattern of factor loading by maximizing high co-relations & minimizing lower once.
Factors involved in theoretical model are expected to be independent of each other. The assumption is based on the fact that factors such as promotional scheme & salesman performance may not have any correlation. Previous research also does not provide any evidence about interdependence among variables of factor analysis. Hence Varimax orthogonal rotation technique is used in this research which suits best under such situations (Gaur & Gaur, 2007).

4.5 Statement of Hypothesis on the basis of Research objectives:
The research is focused on providing insight on role of in-store factors in stimulating impulse purchase of shoppers. To make the study more meaningful and acceptable it is required to state certain objectives towards which all the efforts to be directed. A well defined objective helps us to keep the study streamlined and avoid unnecessary pondering. An objective is what a researcher wants to know about a phenomenon so that certain facts about it could be revealed. To reveal specific truth instead of general information through a sample, researchers should depend upon inferential statistics (Cooper & Schindler, 2004). The researcher must therefore clearly make a statement that explains what exactly he wants to find out about the phenomenon. The statement must be an outcome of objective of the research. The statement should also be fact oriented and verifiable. In order to make such statements the researcher should have a premise based on his belief which he assumes to be true. The truthness of statement is tested quantitatively through statistical means. The statement is referred as hypothesis. Classical approach is known to be most suitable in hypothesis testing as it represents an objective view of probability in which decision making rests totally on an analysis of available sampling data. A hypothesis is accepted or rejected on the basis of data collected from the sample. The hypothesis testing provides ground to generate meaningful full information pertaining to objectives laid during inception of the research. From the objectives initially stated as an outcome of research problem relevant hypothesis are generated in following section.
Objective 1:

“To identify in-store factors and relationship between in-store factors with impulse purchase”

One of the important aspects of the study is to unearth the relationship between the in-store factors and impulse purchase behavior of shoppers. This research considers impulse purchase behavior has two different dimensions one as impulse purchase tendency and other as actual impulse purchase. Researchers had deliberated on difference between them and found that an impulse purchase tendency does not always mature into impulse purchase (Puri, 1996). Store environment is known to have profound effect on the mood of shopper and it has a great role to play in influencing spontaneous consumer decision making. (Wilson et. al., 2000). Even behavioral and cognitive goal of consumer can be directly activated by the environment without conscious choice or awareness of activation. Such automatic activation of behavior plays decisive role in shaping impulse purchase behavior. (Bargh, 2002). Proximity is also a factor that facilitates impulsive actions (Hoch & Lowenstein, 1991). Consumers have indicated that by just looking at the items placed prominently in stores can stimulate desires for purchase of goods Rook, 1987; Rook and Hoch, 1985). Ease of Physical examination and physical proximity also stimulate sensory inputs such as (1) touching goods in the store (2) Testing free samples of foods, which also affect desire to own (Vohs & Faber, 2007). It has been suggested that in addition to individuals personality trait and cognitive learning which may strongly influence shopper’s tendency to engage in impulse purchase behavior there are a myriad of other factors that are likely to influence or interfere with impulse purchase behavior of shoppers (Iyer, 1989; Beatty & Smith, 1987; Beatty and Ferrell, 1998).

From above discussion it is quite evident that impulse purchase behavior in shopping situations is a consequence of (a) Characteristic of product being purchased (b) Characteristic of consumer (c) Situational factors surrounding the purchase context i.e. in-store factors (Kwon and Armstrong, 2002). It is in-store
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factors makes the centre point of this research and subsequently analytical effort is made to unearth their impact on impulse purchase behavior of shoppers.

In order to study the impact of in-store factors on impulse purchase behavior of shoppers while shopping, which is second objective of this research, a correlation analysis is performed between the factors obtained through exploratory factor analysis as discussed above and impulse purchase behavior. In conjunction with above said objective we could write a statement of hypothesis as follows:

**Hypothesis 1**

The Statement of null Hypothesis based on the first objective of the study:

- **H₀**: In-store factors have no influence on impulse purchase behavior.
- **H₁**: In-store factors have significant influence on impulse purchase behavior.

Factor analysis as explained above will help to identify in-store factors. Once factors identified, the correlation between impulse purchase behavior and in-store factors will help to describe the extent of relationship between each of the in-store factors and impulse purchase behavior. The nature of relation will help store managers to decide appropriate action that could induce impulse purchase leading to better revenue realization. A factor having high positive correlation warrants more attention of store manager in comparison to other with low correlation. The hypothesis stated above is tested by performing correlation analysis for each of the factor through bi-variate correlation analysis.

**Objective 2:**

“To study the influence of in-store factors on value of impulse purchase in bill; an indicator of profitability per bill due to impulse purchase.”
Positive attitude about something may not always culminate into behavior. Therefore it is worth to analyse that shopper’s attitude towards in-store factors translate into impulse purchase or not. This analysis will primarily help to ascertain that in-store factors not merely shape impulse purchase attitude but also translate in to actual purchase.

This research problem could be studied by finding out the correlation between opinion of respondents towards influence of in-store factor on impulse purchase and proportion of impulse purchase in their bill for a given shopping trip. Data pertaining to the opinion of respondents towards impact of in-store factors on their impulse purchase behavior is collected through opinion measurement scale specially designed for this purposes consisting of five items and reliability is tested through conbach alpha.

Further to find out the value of impulse purchase per bill the respondent were asked to tell the proportion of total amount out of bill they decided to spend during shopping for purchasing those goods for which they had no intention to purchase prior to entering the store. The shopper's participating in survey were also requested to rate their impulse purchase proportion in the bill on a five point scale.

**Hypothesis 2**

The Statement of null Hypothesis based on the second objective of the study:

\( H_0: \) “There does not exist a significant relation between the ‘impact of in-store factors on impulse purchase’ and ‘proportion of impulse purchase in bill’

The alternate hypothesis could be stated as follows:

\( H_1: \) “There exist a significant relation between the ‘impact of in-store factors on impulse purchase’ and ‘proportion of impulse purchase in bill’
Constructs to measure “impact of in-store factor on impulse purchase behavior”

Five items construct is developed for measuring “impact of in-store factor on impulse purchase behavior”. The items of construct are as follows:

1. Situations’ surrounding me while shopping prompts me to buy things which I had not thought of prior to entering the store.
2. Some times I get involved in purchase things which were not originally in my shopping list due to engaging and involving store environment.
3. Various things inside the store build my mood and arouse me to buy products not originally planned.
4. Good product display, soothing climate, informative signs, store promotions, sales person’s behavior influences my spontaneous purchase decision.
5. Certain factors in the store sometimes indeliberately increase my shopping bill.

In order to capture the “value of impulse purchase per shopping trip”, respondents are requested to disclose bill amount they are carrying and amount of those items they bought impulsively. They are also requested rate proportion of impulse purchase from the total bill on a ordinal scale of 1 to 5. These two data are accordingly coded to perform statistical analysis.

The two variables in this case are ‘impact of INF on IPB’ and ‘value of impulse purchase in shopping trip’. Through above mentioned data collection scales data for these two variables is collected. Correlation analysis between these two variables could ascertain whether there exist any relation between them or not. The correlation is analysed through Karl Pearson’s coefficient of correlation i.e. ‘r’. The significance of relationship is tested through t-test. Since it is not compulsory to define one variable as dependent and other as independent while applying Karl Pearson’s coefficient of correlation (Gupta and Gupta, 2005), no such distinction is made for variables involved in this analysis.
Objective 3

“To identify the relationship between time spend in the store with value of impulse purchase and influence of in-store factors on enhancing store stay.”

Many Researchers (Hafstrong, J.L., J.S. Chae, Y.S. Chung. 1992; Kolodinsky, J. 1990;) claimed that consumers enjoy shopping and the time spent in searching has a significant contribution to this enjoyment. Use of hedonic search strategies by shoppers is known to be positively associated with impulse purchase behavior (Gutierrez, 2004). Another important type of store browsing much discussed by researchers is casual or recreational, where the consumer has no intention of making a purchase but enjoys prolonged stay in store (Prus, 1991).

In a study conducted earlier relationship between time pressure and unplanned purchase was demonstrated. It was found that number of situations may influence sport consumers impulse purchase tendencies and among such factors one is time availability while shopping. (Iyer,1989). In the same study it was hypothesized that the amount of unplanned purchases was a function of time pressure: the lower the time pressure the higher the amount of unplanned purchases. The results indicated that there was a significant difference between the unplanned purchases in the time pressure-absent and time-pressure present conditions. Time availability was also one of the situational variables incorporated in beatty and ferrell’s (1998) study. Today, shopping and shopping related activities are regarded as leisure, and spending time (e.g. in a shopping mall to enjoy oneself) can take many forms, in which purchasing products is not necessarily the main focus (Lehtonen & Mäenpää, 1997; Mäenpää, 2005, 209–231). Consequently, as consumers spend more time in shopping environments, they are also more likely to make more impulsive purchases. It has even been argued that ‘discretionary unplanned purchase’, a form of impulsive purchase behavior, has become part of the core meaning of today’s consumer society, as consumers with discretionary income buy goods and services intentionally, but
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without prior planning (Wood, 2005). It was revealed in previous studies that time availability was a significant factor that influenced to impulse purchase.

There are sufficient reasons cited in literatures review for believing that amount of time available while browsing in store has influence on impulse purchase behavior. However a study also identified an insignificant relationship between time availability with the shopper and impulse purchase behavior exhibited by them (Kwon and Armstrong, 2002). But this study was conducted on a population comprising of young sport college students who generally are not pious of time. Whereas a more heterogeneous sample comprising of general shoppers who occasionally get leisure time may show more inclination towards impulse purchase when time starved.

Another finding identifies two routes through which affect and cognitions arising from a stimulus can influence choices: a “lower order” route, where choices are influenced through automatic affective processes, and a “higher order” route, where choices are influenced through more controlled affective or consequence-related cognitive processes. Across three experiments the extent of deliberation, mental preoccupation, and the nature of exposure to the stimuli were manipulated to identify conditions under which lower order affect, higher order affect, or higher order cognitions impact choices. Finding suggests that when the individual makes the decision quickly and is mentally preoccupied while making the decision, choices are driven by lower order affect. When the individual deliberates on the decision without being mentally preoccupied and the affect-laden option is in full view while the decision is being deliberated upon, choices are driven by higher order affect. In both cases, the affect-laden option is selected. In all other situations, choices are driven by higher order consequence-related cognitions and the alternative that is superior on the cognitive dimension is selected. It is suggested that the effects of affective reactions on choice occur through the activation gratification goals (Shiv & Fedorikhin, 2002). Yet this assumption needs empirical verification.
This study has one of the objectives to analyse the relation between time spent inside the store with impulse purchase. The hypothesis statement is as follows:

**Hypothesis 3(A)**
The Statement of null Hypothesis is based on the third objective of the study:

\[ H_0: \text{“Impulse purchase proportion in bill is independent of shopping duration”} \]
\[ H_1: \text{“Impulse purchase proportion in bill is not independent of shopping duration”} \]

**Hypothesis 3(B)**
\[ H_0: \text{“Shopping duration is not correlated with impulse purchase proportion in bill”} \]
\[ H_1: \text{“Shopping duration is positively and significantly correlated with impulse purchase proportion in bill.”} \]

In order to test this hypothesis respondents are requested to recall the amount of time they have spend in side the store. They were further requested to tell the approximate time they entered and exited the store. The construct are as follows

1. How long had you been in the store approximately?
2. What time did you approximately entered and exited the store?

The construct required for capturing the amount of bill and proportion of impulse purchase in total bill has already been discussed while discussing construct for first objective.

The second part of the third objective of the study is focused on understanding the impact of in-store factors on enhancing shopping duration and stretching the stay of shoppers in the store browsing store offerings. It has been deliberated by researchers that situational factors have potential to engage shoppers and they may indulge in leisure browsing clubbed with enjoyment of shopping (Prus, 19910). Consumers having sense of enjoyment while shopping
develop more favorable attitude towards shopping (Fazio, 1986; Petty et al., 1991). Store environment and situational factors available in side store have profound impact on building mood of the shopper and has potential to develop affect causing shopping enjoyment (Wilson et al., 2000). When affect is active in full, even in leisure shopping consumer may engage in spontaneous decision making. Affect is known to be guided by in-store factors as well as situations surrounding the shopper. (Shiv & Fedorikhin, 2002; Newman & Cullen, 2002). Above discussion supports the belief that factors in side the store and those surround the shopper while shopping has potential to engage shopper and enhance shopping duration. In order to verify this assumption and test it statistically following hypothesis is drawn:

**Hypothesis 3(C)**

The Statement of Hypothesis is based on the third objective of the study:

\( H_0: \) "Longer stay of shoppers in side the store is not influenced by In-store factors.

\( H_1: \) "Longer stay of shoppers in side the store is positively influenced by In-store factors."

Five item construct is developed for measuring "impact of in-store factor on duration of shopping trip".

The elements of construct are as follows:

a. Environment in side store while shopping was engaging and involving
b. Various things inside the store build my mood and arouse me so much that I fail to keep time planned for shopping.

\( c. \) Vibrant and decorative interiors of the store could influence my shopping duration.
d. The store has good product display, soothing climate, informative signs, store promotions, sales person’s behavior.
e. Proper product display and wide variety enhanced my shopping trip.

**Objective 4**

“To prepare an empirically established and universally acceptable model, which indicating the relationship between identified in-store factors and impulse purchase behavior.”

The fourth objective of the research is to develop an integrated and holistic view on impulse purchase behavior under influence of in-store factors. This objective is a cumulative outcome of previous objectives. Through this objective of the research a comprehensive model of impulse purchase behavior is to be developed. Impulse purchase behavior of shoppers is multi dimensional and known to be driven by many things such as personal characteristics; store factors, social factors etc This model is intended to improve the understanding of impulse purchase behavior and there relations with in-store factors. The model developed as an outcome this objective will mainly help to understand the proportion of variance in impulse purchase behavior due to in-store factors.

**Hypothesis 4**

$H_0$: “The impulse purchase behavior is substantially explained by in-store factors”

$H_1$: “The in-store factors has no influence on impulse purchase behavior’

Enter-method of multi-variate regression analysis based on impulse purchase behavior and in-store factors identified through factor analysis as dependent and independent variables respectively will be used to establish this hypothesis. The regression analysis will also give rise to the intended mode of impulse purchase behavior under influence of in-store factors.
4.6 Chapter Summary
This chapter was devoted towards statement of various hypothesis based on objectives of this research. Foremost task taken up was identification of as many as possible in-store variables that had potential to influence impulse purchases. Through literature review thirty three variables were identified which were expected to influence impulse purchases behavior. Further down the line for each objective of the study a null hypothesis was stated along with corresponding alternate hypothesis. Support of published literature was taken while defining the hypothesis. Scales were also developed in this chapter to measure shopper’s impulse purchase behavior and their relevant attitudes towards in-store factors.
5.1 Introduction

It is required to develop an analytical frame work which has potential to explain the premise of this research work in nut shell. Such an analytical frame work will allow developing an integrated approach towards research design. This chapter is devoted to bring forward the sequence of events and activities that holistically represents the purchase behavior of shoppers while shopping at self service retail outlets. Subsequently suitable method and design for dissertation work is discussed and developed.

![Flow of events diagram](image)

Figure 5.1 Frame work of Impulse purchase experience.
5.2 Analytical Frame work of impulse purchase

The impulse purchase experience is divided into following four elements: Consumer, Shopping Environment, In-store Behavior and Product Purchase. These four elements are shown in the Figure 5.1.

As visible in the figure 5.1 Consumer (Shopper), Shopping Environment, In-store behavior and Product Purchase is closely related to each other. Shopping environment is the widest of these elements circumventing the impulse purchase behavior in-side the store. This implies that shopping environment, i.e. various in-store factors generally under control of store manager are important tools through which product sales get affected. Shopping environment in the analytical frame work refers to the host of in-store controllable factors that are expected to put profound impact on impulse purchase. The in-store behavior refers to those purchase behaviors of consumers which are out come of spur of movement and categorized as impulse purchase. It is assumed in this analytical framework that elements of this framework are controllable and are under control of individual retailer. The element product purchase refers to purchase of those products that are bought impulsively. This element gives rise to two more sub elements one is immediate gratification of consumer’s need and other is added revenue to the retailer. These sub elements are actually final out come of this analytical framework that partially forms the applied aspect of this research.

This research looks at the phenomenon of impulsive purchase from the viewpoint of consumers, seeking to describe their lived experiences from real world.

Methodological and philosophical foundations for studying consumer experiences are further influenced by assumptions of existential phenomenology. Existential phenomenology subscribes to a contextualist world view, meaning that it seeks to describe human experience as it is lived, always emerging from some context. Ontologically, experience and physical world are viewed as “co-constituting” (Thompson, Locander & Pollio, 1989). In addition the focus is to describe the experience with a first person view, and to give a thematic
description of the experience that relates description of experience to the context of study.

5.3 Phenomenological perspective of consumer behavior

The research strategy chosen for this study has phenomenology both as a theoretical perspective as well as a choice of methodology. A central element in this research is indeed consumer impulse purchase experience, i.e. how consumer experience the phenomenon of impulsive purchase on getting influenced by in-store factors. An effort is made in following section to examine briefly the previous research on consumer experiences and a description of the reflection and interpretation process of consumer experience. Centre of the research lies in capturing the experience of shoppers in context to impulse purchases made under influence of in-store factors.

Consumer experience were brought to consumer researcher’s attention in the early 1980’s by Holbook and Hirschman( 1982) by their article “The experiential aspects of consumption: Consumer fantasies, feelings and fun”. Since then, consumer experience have received increasing interest among consumer researchers in different disciplines, including marketing, and resulting in popular concept in marketing management literature as “experience economy” (Pine & Gilmore, 1999) and ‘experiential marketing’ (Schmitt, 1999; Schmitt, 2003, Kotler, keller et. al, 2009). Actually, it has been suggested that the dominance of selling products for concrete use has changed into selling experiences, lifestyles, and identities, and therefore, gaining knowledge about consumer’ experiences through qualitative interview has become essential for modern marketing (Kotler & Keller, 2009; Kvale, 2006).

In consumer research, phenomenological research concentrating on the first —person view of lived experience has received attention in various areas of consumption. Example includes research on meaning of self —gifts (Mick & Demoss, 1990), every day consumption experience of married women (Thompson, Locander, & Pollio, 1990), professional working mothers (Thompson, 1996), consumers’ relationship with brands (Fournier, 1998), Internet
use among older consumers (Trocchia & Janda, 2000), perceived Internet retail service quality (Trocchia & Janda, 2003), adolescent girls’ mall experiences (Haytko & Baker, 2004), and meanings of consumer normalcy in shopping (Baker, 2006). As also this array of examples demonstrates, consumer experiences can be and have been studied from different approaches, such as marketplace experience, extraordinary experience, and experiential experience (Ahola, 2005; Ahola, 2007). Each of these approaches also defines the concept of experience differently. The marketplace experience approach emphasizes the consumers’ daily, ordinary experience with situations and circumstances circulating in the store (Ahola, 2007). On the other hand, extraordinary experience approach studies experiences that are activated and felt by unusual events and are characterized by high levels of emotional intensity and experience (Ahola, 2007). Creating these types of extraordinary and unforgettable experiences for consumers has been the main aim in experiential marketing (Caru & Cova, 2007). Thirdly, the experiential experience approach defines experiences as subjective, inner episodes, that are personally unique and that are associated with significant emotions which may be triggered by stimuli surrounding the consumer, in this case residing in-the store (Ahola, 2007; Caru & Cova, 2007). This study is concerned with the-first and third approach, as this research examine experiences that are subjective routine, but not necessarily extraordinary. This aspect of studying casual, i.e. not so extraordinary experiences, is also an important aspect of studying impulsive purchase. Some critics has presented the idea that earlier research on impulsive purchase has regarded impulse purchase as an extra ordinary consumer purchase behavior, and therefore, more research attention should be paid to casual impulse purchase experiences (Rook, 1999; Wood, 2005). This research assumes impulse purchase as a natural behavior and identifying and controlling the antecedents of this behavior is possible.
5.4 The process of experience reflection and interpretation

This research process involves several stages of actual reflection as well as interpretation of the consumer experiences. Although it has not been a totally chronologically linear process; the order of the main phases in the process can depicted on a timeline as given in Figure 5.2. This process defines some basic assumptions about consumer experiences discussed in this research.

As can be seen from Figure 5.2, the end result of the reflection and interpretation process, i.e. this research report, is both chronologically as well as on an interpretative level quite far away from the actual impulsive purchase experience of the consumer.

Chronologically, in the first instance the impulsive purchase experience occurs while a consumer shopping at any store (as in case of this research) or any other retail channel. At that point, the consumer might not be reflecting on the details of the experience felt as such while shopping (John Dewey, 1910). However, later when in the interview situation or as a respondent to a schedule, the interviewee reflects on the experience he or she has previously encountered while shopping. Actually, in the interview situation the interviewee's reflection (realization and representation of experience) of a specific lived event can allow emergence of
aspects of the shopping experience that have previously been unreflected, for example realizing patterns in the experience that the consumer has not felt prior to the interview (Thompson, Locander, & Pollio, 1989).

As a result of reflecting on the experience, the interviewee tells his or her description of the experience in the interview. Respondent’s descriptions form the basis of empirical evidence in phenomenological research (Thompson, Locander, & Pollio, 1989). The researcher should capture the respondents experience in methodological manner through suitable constructs. The construct or instrument used should be statistically sound and valid. Telling narratives is considered to be an interpretative tool by which one looks at the world around us, give it a purpose, and help to make sense of experiences (Shkedi, 2005).

In the next phase of the interpretation process, researcher analyses and interprets the description of the experience produced by the interviewee after capturing them through suitable instrument. The interpretations made should be supported by the interviewees' descriptions of their experiences (Thompson, Locander, & Pollio, 1989). The interpretation is made out of outcomes obtained through proper analysis of data with the help of suitable analytical tools (Cooper and Schindler, 2004).

Finally, the last stage of interpretation occurs when writing this research report. Writing is a process of "creating and re-creating coherent research narratives" (Shkedi, 2005, 159). Although chronologically this final stage follows the data analysis phase, it does not mean that analysis of the data would be over when writing stage begins. Quite the contrary, according to Van Manen (1997), writing is not just reporting the results of the study, but an essential stage in phenomenological reflection: writing, for instance, involves a textual reflection and fixes our thought on paper. It is "not until we had written this down did we quite know what we knew" (Van Manen, 1997). In this research writing of the research report is based on the factual description of out comes instead of any discretionary reviewing and modifications of analysis. It is this stage when researcher verifies all that has been assumed during hypothesis formulation is true or not and final know how about research problem is shaped up.
5.5 Design of Research

Early in any research study, one faces the task of selecting the specific design to use. A number of different design approaches exist but, unfortunately, no simple classification system defines all the variations that must be considered. Table 5.1 classifies research design using eight different descriptor. A brief discussion of these descriptors illustrates their nature and relevance to this research and its objectives.

Degree of Research Question Crystallization is an important aspect of classifying research design. A study may be viewed as exploratory or formal. The essential distinctions between these two options are towards the loose structures with the objective of discovering future research tasks. The immediate purpose of explorations is usually to develop hypotheses, variables or questions for further research (Thakur, 2003). The formal study begins where the exploration leaves off - it begins with a hypothesis or research questions and involves precise procedures and data source specifications. The goal of a formal research design is to test hypotheses or answer the research questions posed (Cooper & Schindler, 2004). On the basis of research problem and objectives defined, first available literature had been studied in detail to explore factors that influence the impulse purchase behavior of shoppers and then suitable hypothesis were defined. After this the hypothesis stated are tested through statistical means and influence of independent variables (In-store factors) on dependent variables (impulse purchase behavior) are modeled to provide specific knowledge of precedents of impulse purchase behavior while shopping at brick ‘n’ mortar (physical store. Katz (1996) had said that exploratory studies merely lead to insight or hypothesis, but they do not test or demonstrate them. Careful, controlled and formal studies are needed to test weather the hypothesis that emerge out of the studies employing the exploratory method have general acceptability and applicability. Since both the elements are present in this study, it is considered as a combination of exploratory as well as formal design. Sometimes such studies are also called non-experimental studies (Gupta, 2005).
Research Design Approaches

<table>
<thead>
<tr>
<th>Category</th>
<th>Options</th>
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<tbody>
<tr>
<td>The degree to which the research question has been crystallized</td>
<td>• Exploratory study</td>
</tr>
<tr>
<td></td>
<td>• Formal study</td>
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<tr>
<td>The method of data collection</td>
<td>• Monitoring</td>
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<td></td>
<td>• Interrogation / communication</td>
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<tr>
<td>The power of the researcher to produce effects in the variable under study</td>
<td>• Experimental</td>
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<tr>
<td></td>
<td>• Ex post facto</td>
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<tr>
<td>The purpose of the study</td>
<td>• Descriptive</td>
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<td></td>
<td>• Causal</td>
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<td>The time dimension</td>
<td>• Cross – sectional</td>
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<td></td>
<td>• Longitudinal</td>
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<td>The topical scope – breadth and depth of the study</td>
<td>• Case</td>
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<td></td>
<td>• Statistical study</td>
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<td>The research environment</td>
<td>• Field setting</td>
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<td>• Laboratory research</td>
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<td></td>
<td>• Simulation</td>
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<tr>
<td>The participant’s perceptions of research activity</td>
<td>• Actual routine</td>
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<td></td>
<td>• Modified</td>
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Table 5.1 (Source: Cooper et. al., 2003)

5.5.1 Causal Relationships in Diagnostic Studies

There appears to be an inherent gap between the theory and research which can never be bridged in a completely satisfactory way. One thinks in terms of theoretical language that contains notions such as causes, forces, systems, and properties. But tests are made in terms of co variations, operations and pointer readings (Hubert, 1964). The essential element of causation is that A produces
B or A “forces” B to occur. But that is a stated theory in language, not what happens. Empirically, one can never demonstrate an A-B causality with certainty. This is because as researcher one can not “demonstrate” such causal linkages deductively or obtain evidences for validation of premises that deduction requires for conclusiveness. Unlike deductive syllogisms, empirical conclusions are inferences - inductive conclusions. As such they are probabilistic statements based on what is observed and measured. But one cannot observe and measure all the processes that may account for A-B relationship. The proposed study is intended to make conclusions based on empirical analysis (find out how in-store factors and prolonged stay of shoppers in store influences impulse purchase behavior); hence it could be put in the class of research based on inductive conclusions. Research based on inductive conclusions are known to exhibit characteristics of causal study designs. (Cooper & Schandler, 2003, Catherine and Gretchen, 1982)

The concern in causal analysis is with how one variable affects, or is “responsible for” changes in another variable. The stricter interpretation of causation, found in experimentation, is that some external factor “produces” a change in the dependent variable. In business research we often find that the cause-effect relationship is less explicit. We are more interested in understanding, explaining, predicting and controlling relationships between variables (Pannerseveelan, 2007, Kothari, 2005, Cooper & Schandler, 2003).

If one considers the possible relationships that can occur between two variables, one can conclude there are three possibilities:

- Symmetrical
- Reciprocal
- Asymmetrical(ref. 22 in cooper et. al., 2003))

Most research analysts look for asymmetrical relationship in their studies. Asymmetrical relationship postulates that changes in one variable (the independent variable, or IV) are responsible for changes in another variable (the dependent variable, or DV) (Cooper & Schindler, 2004). The identification of the IV and DV is often obvious and exploratory studies provides evidence for it, but
sometimes the choice is not clear; such situation warrants more exploration and descriptive studies. In this research an exploration of available literature is performed to describe a set of 33 variables that has potential to influence our dependent variable. The criteria to evaluate independence and dependence are based on:

1. The degree to which each variable may be altered. The relatively unalterable variable but within control of researcher is the independent variable (IV) e.g., age, social status, in-store factors in this case.

2. The time order between the variables. The independent variable (IV) precedes the dependent variable (DV). (In-store factors are already present in store and shopper’s exhibit purchase behavior after entering in the store.

There are four types of asymmetrical relationships: stimulus-response, property – disposition, disposition-behavior and property-behavior. Experiments usually involve stimulus response relationships property- disposition relationship are often studied in business and social science research. Much of ex post facto research involves relationship between properties, dispositions, and behaviors (Cooper & Schindler, 2004, Gupta, 2005). This research lies in the fourth category; and the property of a store is its environment, constituent elements are in-store factors & the behavior is action (i.e. purchase decision made by shoppers on spur of moment).

Asymmetrical relationship between two variables

<table>
<thead>
<tr>
<th>Relationship type</th>
<th>Nature of relationship</th>
<th>Example</th>
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| Property Behavior | A stimuli causes a specific behavior. | • Opinions about a brand and its purchase  

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Table 5.2 Source: Cooper & Schindler, 2004

While no one can ever be certain that variable A causes variables B to occur, that is in-store factors(A) influence impulse purchase behavior(B), one can
gather some evidence that increase the belief that A leads to B. In testing causal hypotheses, three types of evidence’s are sought:

1. Co variation between A and B
   a. Does A and B occur together in the way hypothesized?
   b. When A does not occur, is there also an absence of B?
   c. When there is more or less of A does one also find more or less of B?

2. Time order of events moving in the hypothesized direction.
   - Does A occur before B?

3. No other possible cause of B.
   - Can one determine that C, D, and E do not co-vary with B in a way that suggests possible causal connections?

List 5.1: Evidences in testing causal hypothesis

It is known that assignment of subjects in ex post facto research is not possible as in case of experimentation. However, it is possible to gather data about potentially confounding factors and use them to make cross-classification comparisons; in this way researcher can determine the influence of factors on dependent variable. Thus making study of causation in ex-post facto design possible (Kothari, 2003; Panneerselvam, 2006, Gupta and Gupta, 2005, Cooper & Schindler, 2004). Testing of hypothesis defined in this research is based on first sub point of list 5.1.i.e. does A and B occur together in the way hypothesized. It is strongly felt that this study is of causal type and falls under 1(a) of List 5.1.

It is concluded on the basis of above discussion that design of this study is causal cum diagnostic with an essence of exploratory research due to exploration done to identify input variables for factor analysis.
5.5.2 Survey Technique

Generally social research are considered as survey studies where investigation is done through direct observation of a phenomenon or systematic gathering of data from population by applying personal contact (Gupta, 2005). There is distinction between monitoring and interrogation / communications processes of gathering data in a social survey. The former includes studies in which the researcher inspects the activities of a subject or the nature of some material without attempting to elicit responses from anyone (Cooper & Schindler, 2004). Traffic counts at an intersection, valid number plates recorded in restaurant parking lot, a search of the library collection, an observation of the actions of one or group of shoppers shopping at any retail outlet— all are examples of monitoring or observation technique of data collection.

In the interrogation / communication study the researcher questions the subjects and collects their responses by personal or impersonal means. The collected data may result from (1) interview or telephone conversations (2) self-administered or self-reported instruments sent through the mail, left in convenient locations, transmitted electronically or by other means (3) instruments presented before and / or after a treatment or stimulus condition (Catherine and Gretchen, 1982). This study lies in second category that is interrogation process of data collection.

In terms of the researcher’s ability to manipulate variables, one could differentiate between experimental and ex post facto design. In an experiment the researcher attempts to control and / or manipulate the variable in the study (Kothari, 2003; Thakur, 2003). With an ex post facto design investigators have no control over the variables terms of being unable to manipulate them. They can only report what has happened or what is happening. It is important that the researchers using this design do not influence the variables of study; so such situation may cause chances of bias. The researcher is limited to holding variables constant; valuable outcomes could be obtained by judicious selection of subjects according to strict sampling procedures and proper statistical analysis of data (Cooper & Schindler; 2004, Kothari, 2003; Gupta, 2005). This study is kept
under category of ex-post facto research design because various factors (independent variables) that are hypothesized to influence the impulse purchase behavior (dependent) are poorly controlled as shopper’s exhibit spontaneous behavior while shopping and could only be observed as and when happens. Though many researcher has conducted experimental research to study consumer behavior in retail environment, but as per the requirements of an experimental setup, forming control group of stores and shoppers would be extremely expensive, thus making experimental design beyond the scope of this research.

The difference between descriptive and causal studies lies in their objectives. If the research is concerned with finding out who, what, where, when or how much, then the study is descriptive (Cooper & Schindler, 2004; Thakur, 2003, Gupta & Gupta, 2005). Descriptive studies are more formalized studies typically structured with clearly stated hypotheses or investigative questions. Formal descriptive studies serve a variety of research purpose such as…

- Descriptions of phenomena or characteristics associated with a subject population (the who, what, when, where and how of a topic)
- Estimates of the proportions of a populations that have these characteristics
- Discovery of associations among different variable

The simplest descriptive study concerns a uni-variate question or hypothesis in which researcher asks about or states something about the size, form, distribution or existence of a variable (Levin and Rubin, 2006).

If the research is concerned with learning why-that is, how one variable produces changes in another then it is categorized as dagnostics design. In a causal study often researcher tries to answer questions such as when, where, and by whom or explain relationships among variable – for instance why the crime rate is higher in city A than in city B (Cooper & Schindler, 2004). This study is of formal type as explained earlier and also from preceding discussions it is kept in class of causal type. The reason of calling this study causal or diagnostic lies in objectives of the study, where it is required find out how in-store factors
influence impulse purchase behavior and also to find out the relationship between time spend in store and impulse purchase behavior.

Research studies are also classified as cross-sectional or longitudinal. Cross-sectional studies are carried out once and represent a snapshot of one point in time where as longitudinal studies are repeated over an extended period. The advantage of a longitudinal study is that it can track changes over time, but it is not suitable in case of this study because information once collected cannot be recollected second time from the same respondent without the risk of bias or he/she may not be again available for comment. The study of shopper’s behavior at a Shopping centre over a six month period would require repeated contact with sample respondents for each episode of measurement that is almost impossible in natural course. This study lies under the class of cross sectional studies as the study is done at a given point of time and repetitive collection of data is not done.

The ‘Topical Scope’ also forms basis of classification of research design as case study or statistical study. Case studies place more emphasis on a full contextual analysis of fewer events or conditions and their interrelations. It is actually an intensive and in-depth study of a social object (Gupta, 2005; Discount Store News, 1997). The statistical study differs from the case study in several ways. Statistical studies are designed for breadth rather than depth. They attempt to capture population’s characteristics by making inferences from sample static. Hypotheses are tested quantitatively. Generalizations about findings are presented based on the representative samples and the validity of the design. This research is planned as statistical study because statistical inferences are drawn for establishing objectives of research (Catherine and Gretchen, 1982, Cooper & Schindler, 2004).

The research studies also differ as to whether they occur under actual environment conditions (field conditions) or under staged or manipulated conditions (laboratory conditions). As already mentioned it is not intent to control the store environment and data is collected in natural environment, this research is classified as field study (Charles, 1970; Cooper & Schindler, 2004).
Simulation is to replicate the essence of a system or process. Simulations are increasingly used in research especially in operations research but has got limited application in social research (Levin and Rubin, 2006; Cooper & Schindler, 2004). This research has no element of simulation in it.

A research could be classified on the basis if Participants’ Perceptions. The usefulness of a design may be reduced when people in a disguised study perceive that research is being conducted Participants’ Perceptions influence the outcomes of the research in subtle ways or more dramatically as it is learned from the pivotal Hawthorne studies of the late 1920s. Although there is no widespread evidence of attempts by participants or respondents to please researchers yet successful hypothesis guessing is possible leading to unnatural responses. When participants believe that something out of ordinary is happening they may behave less naturally. There are three levels of perception:

- Participants perceive no deviations from everyday routines
- Participants perceive deviations but as unrelated to the researcher
- Participants perceive deviations as researcher – induced

The mystery shopper scenario is the perfect example of the final level of perception noted in the above list. If a retail sales associate knows she is being observed and evaluated— with consequence in future compensation scheduling, or work assignment—she is likely to change her performance. In all research environments and data collection situations, the researcher needs to be vigilant to the effects of unnatural responses that may introduce sampling errors in study. (Cooper & Schindler, 2004)

### 5.5.3 Sampling Design

A complete enumeration of all the items in the population, referred as census method, to obtain an estimate of population parameter is the ideal way to get most accurate estimate. In case we eliminate few items from the population the accuracy of estimation will reduce, but this reduction in accuracy is significant or not is the key question to be answered. Because elimination of items or only collecting data from few items of the population could be of great advantage to
the researcher in case of large population, a trade off between level of accuracy desired and number of items to considered for estimation of population parameter is imperative. The availability of time cost and other resources is limited and scarce with every researcher, complete enumeration or census method will generally be an unwanted and prohibitive option. In order to come out of this problem a researcher could take route of sampling method. Unless the information required from each and every unit in the domain of the study, the sampling technique is most suited to obtain the desired information. (Gupta & Gupta, 2006). The use of sample to draw inferences about population parameter is most suitable for social research purpose. The methodology is known as inferential statistics which is supported by principle of “Statistical Regularity” and “Inertia of Large Numbers”. (Devendra Gupta, 2005).

There are two more assumptions for applying sampling technique, one is homogeneity amidst complexity meaning that social phenomenon appears to be very complex and differential yet they also posses similarity in many respect making sampling possible. The other assumption is ‘absolute accuracy is not essential’. Since the population of this research is infinite for every practical purpose; marginal cost for accuracy gets unjustified after certain point (Gupta Gupta, 2005). Further the law of statistical regularity states that a moderately large number of items chosen with a proper sampling technique from a large group are almost sure to posses the characteristics of the large group (Gupta & Gupta, 2006). This means the sample could be a true representative when items chosen randomly or with any other established sampling technique from a large or infinite population.

The principle of Inertia of Large Numbers is corollary to the principle of Statistical Regularity which states that larger the number of items in the sample more will be the accuracy in prediction of population parameter (Gupta & Gupta, 2006). Therefore it is clear that using a sampling method in place of census method is statistically valid estimate of population parameter and being applied in this research.
Once decided about deploying sampling methods in a study, the revolving issue with sampling method is size of sample and sampling technique to be used for selecting sample units from the population.

5.5.4 Type of universe and Population of study

The universe of this study is formed of everybody who does shopping in malls or any retail with self service, primarily at organized retail outlets. Each day new organized store shoppers are adding the league of existing shopper’s, hence the number is ever inflating and exact number could not be determined at any point of time. Same is true for number of shoppers shopping at any large standalone mall or retail outlet about any point of time. This number is fluctuating yet quite large but exact estimate or number is not known only rough estimates could be made about it. This study limits its scope of universe to malls and large organized retailers in Lucknow and NCR Region. Usually a large proportion of city population shop at retail outlets, total number of shoppers is huge and could be considered infinite for all practical purpose. Hence we could call the population under this study infinite. Source list is possible in case of finite population and not in case of infinite population, allowing to conclude that a source list cannot be prepared for this research (Zicmond, 1998; Kothari, 2004; Cooper & Schindler, 2004).

5.5.5 Sampling Unit

Sampling unit is that object from which the information is to be collected; it is an element/unit of the universe under study (Coopers & Schindler, 2004). This study intends to observe and draw inference about the impulse purchase behavior of people above age of 18 years, who shop in retail outlets with self service. Usually most of the modern retail formats come under this category of retail outlets. It is clear from above that the data is to be collected from individual shopper’s carrying a shopping bill. These shoppers are sampling unit/sample element of this study. Though a source list is generally preferred for selecting
sample members from a population; due to very nature of sampling units of this research such a source list is not available.

5.5.6 Sampling Technique

The method of sampling depends on broad number of criterion such as desired accuracy of survey results and cost of sampling. In case of marketing surveys a non – probability sampling technique is appropriate where some broad idea of population parameter will serve the purpose (Krishnaswanmi & Ranganath, 2005). This Study could be put under market survey category but the intention being to develop a acceptable model of impulse behavior with respect to in-store factors a brood idea about population may not suffice the purpose. At the same time the research being a self funded and academic, there are constraints in terms of budget and the cost needs to be kept low.

The intention of the research is to draw statistical inferences and simple random sample is most appropriate. But practically it is not possible to obtain in advance a list of all shoppers at organized retail outlets in region of the study, thus making simple random sampling inappropriate in this research. Such a compromise is necessary and admission-able under these circumstances. (Krishnaswani & Ranganatham, 2005, Raj, 2002).

When sample frame is not available it is deliberated by Krishaswani & Ranganathan (2005), the researcher must balance between the conflating factors, purpose of study may demand for one type of sampling technique but research has to choose the pragmatic one. When no list of population and no information about its nature are available, it is difficult to apply probability sampling method. The situation discussed above resembles closely with population of this research.

Yet an effort is made to imbibe the characteristics of probability sampling by using systematic sampling technique. Systematic sampling is a complex probability sampling technique (Kothari, 2004; Panneerselvam, 2006). Systematic sampling is widely applied for conducting studies on assembly line outputs, where sample elements come out of production line in a sequence. The
exit movement of shopper’s after billing from the retail outlet is somewhat similar with assembly line output; this technique of sampling is applied for drawing samples from the population defined for this study (Krishnaswami & Ranganathan, 2005). Systematic sampling technique is a complex random sampling method. Under this method of sampling every $k^{th}$ item from the population is taken in the sample after a random start with an item between 1 to $k$ (Kothari, 2004; Krishnawami & Ranganathan, 2005). In this research ‘$K$’ is randomly generated.

Systematic sampling is quite flexible and practical to many situations. In systematic sampling there is no need to number the entries in a large personnel file before drawing samples. A systematic sampling can be drawn by merely identifying the random start and drawing samples by choosing every $K^{th}$ entry. Time sampling as the case of this research is also easily accomplished through this sampling method (cooper & schindler, 2004, Gupta, 2005, Cochran, 1963).

The systematic sampling gets further improved if performed in clusters with homogeneity. The different retail outlets could be considered as independent clusters with homogeneity in terms of shoppers characteristics. The individual retail outlets from which the samples are drawn are geographically located in different areas. This technique is also called as Area sampling; an important form of cluster sampling. This method overcomes both the problems of high sampling cost and unavailability of a practical sampling frame (Cooper & Schindler, 2004). Collecting data from different retail outlets also allows to random start several times in sampling process, which is desired to increase efficiency of systematic sampling (cooper & schindler, 2004, Gupta, 2005). Some critics of this approach of sampling consider this method as Pseudo-Random Sampling, believing that it possesses characteristics of both randomness as well as non-probability sampling (Krishnaswami & Ranganatham, 200) though this type of views are not supported by many, and most of authors consider systematic sampling under probability sampling technique. This approach of sampling seems to be most suitable and hence adopted for drawing sample for this research work.
5.5.7 Data Collection Method

a. Primary Data
Primary data was collected from the subjects by means of a survey. Furthermore the major technique that will be used to approach subjects was the intercept technique i.e. approaching respondents without prior notification or appointment at place of shopping. (Cooper & Schendilar, 2004; Malhotra, 2009). It not easy to ensure the research is conducted at the ‘moment of truth’ for everyone, especially in those situations where there is constant stream of moments of many buyers (Stone et. al., 2005). Personal intercept methods were earlier used to collect information in a face to face situation at place of shopping. A questionnaire was designed and administered through the personal contacts made with shoppers in shopping centers/Malls/Large organised retail outlets.(Annexure I(A)) The administration of schedules for data collection was done at various phases of day to eliminate any systematic variance which may occur due to time of shopping (Cooper & Schendilar, 2003). Care was taken to avoid loaded, double barreled, biased questions causing confusion among respondents.

Selection of shoppers for administration of schedule was done by randomly selecting a number between 1 to 12. The random number between 1 to 12 was chosen by looking on the wrist watch and picking that number through which the seconds hand of the watch was passing. In case the seconds hand is between two numbers, discretion was applied. The schedule was administered to that shopper who exited first from the retail outlet and after selecting the number say ‘k’ between 1 to 12 through above process a counting is made of every shopper who exited the outlet carrying a bill. A request was made to that shopper who falls on kth count to participate in survey. If he/she gives consent to participate the survey, the schedule was handed over to him and the purpose of survey explained to him / her. While administering schedule from shopping parties the response was taken from group leader usually buyer of
acquaintance/friends groups and buyer of product in case of family groups. If a shopper declines to participate in survey next immediate shopper carrying bill was requested for participation. The request was repeated until one agrees to participate and fills the schedule. After completion of schedule by one respondent again the count of shopper was repeated and request to k\textsuperscript{th} shopper was made to participate in the survey. This process continued till that many number of schedules were filled as decided for a retail outlet/cluster.

b. Secondary Data
In order to gather information about research problem and paradigm, articles and publications on impulse purchase were studied. Literature study and reference work was primarily done at Indian Institute of Management, Lucknow.

5.5.8 Sample Size
There are several factors that influence the sample size. One of them is nature population under study i.e. heterogeneous or homogeneous. One of the researcher has said that more homogeneous the population fewer the cases required to yield a reliable sample and vive-versa (Ahuja, 2001; Raj, 2002). The population of this study is quite homogeneous in terms of population characteristics under investigation. As per the previous studies gender and age are known to have impact on impulse purchase behavior (Medhavi & Chaturvedi, 2007; Vanniarajan, 2006). Further it is assumed that variability in income of people who come for shopping at modern format retail outlets will not be very high. The population under study is assumed to be quite homogeneous and very large sample may not be required to achieve a fair level of accuracy (Raj, 2002; Kothari, 2004; Cooper & Schindler, 2004). In following section due deliberation is done to derive a suitable sample size for this research work.

Krishnaswami & Ranganathan (2005) has suggested using standard error and population variance to estimate the size of an efficient sample. The use of ‘level of confidence for the study’ is also suggested for more precise estimation of
sample size (Gupta & Gupta, 2005). The technique suggested by these two authors is based on method of Interval Estimation for Population mean.

For an infinite population, as in case of this research, Interval Estimate is given as follows:

\[ \text{S.E. or Interval Estimate (Acceptable sampling error)} = Z_c \frac{\delta}{\sqrt{n}} \]

Where,  
- S.E is standard error or Interval Estimate
- \( Z_c \) is confidence level
- \( \delta \) is standard deviation of the population
- \( n \) is size of sample.

\( \delta \) ‘Population standard deviation is known to be calculated from sample standard deviation as follows(Gupta & Gupta, 2005, Levin & Rubin, 2004)

\[ \delta = \sqrt{\frac{\sum (x_i - \text{sample mean})^2}{n - 1}} \]

If Standard deviation of a population could be approximated and an acceptable error is defined for a research, than it is possible to estimate empirically a sample size that is suitable for a research work.

For the purpose of this research a standard deviation of 1.08 is taken on the basis standard deviation of population parameter that is ‘impulse purchase behavior’ obtained by Medhavi & Chaturvedi (2007) in their research which was conducted to study relationship of demographic aspects of a similar population with impulse purchase behavior. Acceptable error/ Interval estimate is taken as 15% of standard deviation i.e. 0.162 of the population parameter as stated above. The level of confidence is taken as 95% for which \( Z_c \) is 1.96, a known standard for social surveys (Gupta & Gupta, 2005; Thakur, 2003; Cooper and Schindler, 2004; Levin & Rubin, 2004)

Hence a sample size could be estimated for this research as follows…

\[ N = \frac{(Z_c \delta^2)}{\text{S.E.}^2} \]
By substituting the values of $Z_0$, $\delta$ and S.E. as 1.96, 1.08 and 0.162 as per above discussion the desired sample size for this research is obtained as 170. In this research the sample size taken is 300 that is well above the significant sample size estimated quantitatively. Fifty respondents from each of the following malls in Lucknow and NCR territory will be surveyed for collecting primary data; amounting to a total sample size of 300.

Lucknow: Shara Ganj Mall, Hazratganj; Fun Republic Mall and Wave-West End Mall, Gomtinagar.

NCR Territory: Shipra Suncity Mall, Gaziabad; The CenreStage Mall, L-1, Sector 18, Noida; DLF City Centre Mall, Gurgaon.

5.5.9 Measurement and Scaling Technique
To achieve the objective of this research, the opinion of sample units had to be captured. Here sample units are shoppers as defined above and their impulse purchase behavior with respect to in store factors was to be measured. There is need to assign a number (quantify) to the opinion of the shoppers, so that properties of number’s could be used for applying statistical tools for drawing inference about shopper's behavior in respect to study antecedents / stimuli (Cooper, 19980).

Among existing classes of scales, the scale suitable for this research is one-dimensional. This is so because this research wants to measure only response of shoppers towards in store factors at a given point of time (Kothari, 2004). Scales could also be classified on the basis of scale construction techniques. The scale that best suits to this research is arbitrary approach, where items in the scale are assumed to measure the concept for which they have been designed, in this case the impact of in store factor on shopping behavior. The main benefit of this scale is that the items can be developed easily, quickly and at relatively less cost. They can also be designed to be highly specific and adequate. Care has been taken to develop items in such a way that they could
be treated with factor analysis, a variable reduction technique applied in this research. Factor analysis is applied to identify the inter correlation between items to cluster them in homogeneous groups being called as in-store factors. A five point interval or ratio scale could suffice the purpose of factor analysis (Malhotra, 2009, Panneerselvam, 2006). In this research a five point itemized interval rating scale is being deployed. There is no specific rule whether to use a two point, three points or more point scale; in practice three to seven point scales are generally used. A five point itemized rating scale is best suited for attitude measurement in opinion surveys. (Edwards and Kennym, 1946; Kothari, 2003). The measurement of relative attitude of shoppers towards in-store factors is done through items developed on the basis of arbitrary approach. A comprehensive literature review is done in chapter 4 to identify items and develop the scale under this approach.

As mentioned above a five point multi item rating scale is being used in this research, the question remains which scale is suitable for measuring the concept of this research. A careful analysis of applicability of scales reveals that Thurstone type differential scale is more suitable for measurement of opinion or attitude towards image of an object i.e. an organization, brand or person etc. (Cooper & Schindler, 2004, Panneerselvem, 2006). The scale used in this research falls under summated scale category commonly called as Likert-type scales. Five Point Likert-type scales are favored for studying shopper’s attitude in retail research (Bolen, 1988). Likert-type scale is best suited to measure the relative favorableness or unfavorableness of respondent’s attitude towards a research object on a three to seven point scale expressed in terms of ‘strongly agree’ to ‘strongly disagree’ with attached quantitative weightage. Further Likert type scale also falls under category of interval scale and generates data that could be used for parametric as well as non-parametric test. (Kothari, 2004, Cooper and Schendlier, 1998). This scale type closely ties up with the measurement and scaling requirements of this research.

Skewness and kurtosis is used to check Normality of data. These measures helps to verify weather people homogenously behave in a given
manner or not, for e.g. a skewed data pertaining to shopping frequency having mode as ‘weekly shopping’ means large number of respondents go for weekly shopping but many people also shop more occasionally. A reliability test of data is done through conbach alpha popularly known as Alpha Test. This test indicates internal consistency among items under a scale.
5.6 Research Design – Summary

Design Summary

<table>
<thead>
<tr>
<th></th>
<th>Type of universe</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Infinite</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Sampling Unit</td>
<td>One shopping party carrying Bill</td>
</tr>
<tr>
<td>3.</td>
<td>Sampling Technique</td>
<td>Combination of Systematic Probability sampling with Area/Cluster sampling</td>
</tr>
<tr>
<td>4.</td>
<td>Sample Size</td>
<td>300 (Estimated Statistically significant sample size = 170)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Data Collection Method</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>Primary:</td>
<td>Secondary:</td>
</tr>
<tr>
<td></td>
<td>Survey Method – Self Administered Intercept Technique</td>
<td>Literature review on Impulse Purchase Behavior</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Instrument Used Annexure I(A)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>Closed ended Schedule</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Sampling Frame</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>Retail Stores at Lucknow and NCR</td>
<td></td>
</tr>
</tbody>
</table>

Table 5.3
Chapter 6
Data coding, Tabulation and Analysis Methods

6.1 Introduction
It is a well known fact that unless data is properly coded and tabulated performance of analysis on them may not be worthy and very fruitful. Hence this chapter gives an elaborate description of method used for coding and tabulation of data collected. Further scheme of data analysis is also discussed to ensure that tools employed for analysis are fairly evaluated and their use is justified. This exercise is also desirable to ensure that one don’t get stuck in between the analysis process.

6.2 Data Coding, Variable definition, tabulation scheme:

1. Factor analysis technique is used to reduce 33 variables into clusters / Factors (approx 10 Clusters) and a name is given to each factor.

2. Through summating and averaging the response values of variables clustered in a factor, a data series is generated for each factor. A name is assigned to the summated variable as per name of the factor i.e. <factor name>_factor, Factor1, factor 2, etc. These variables are independent variables of regression analysis.

3. Through summating and averaging data from construct ‘Impulse purchase behavior cumulative series for impulse purchase behavior is generated. A name to the variable assigned as CUM_IPB. This variable served as dependent variable for performing regression and correlation analysis in this study.

4. Summated / Average data series of shoppers perception of impact of In-store factors on impulse purchase behavior (IPB) is generated and called as ISF_IPB
5. A data series from questions indicating respondent’s impulse purchase proportion in total bill is generated. Coding rule given below is used for this purpose. This variable as named as IP_PROP_BILL.

Coding Rule:

<table>
<thead>
<tr>
<th>Percentage of impulse purchase in bill</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 -20%</td>
<td>01</td>
</tr>
<tr>
<td>20-40%</td>
<td>02</td>
</tr>
<tr>
<td>40-60%</td>
<td>03</td>
</tr>
<tr>
<td>60-80%</td>
<td>04</td>
</tr>
<tr>
<td>80-100%</td>
<td>05</td>
</tr>
</tbody>
</table>

6. A date series for time spend in store/Shopping duration (SD) is generated. Conversion rule as given below is used to generate data on 1 to 5 scale. This variable is named as SD.

Coding Rule:

<table>
<thead>
<tr>
<th>Time spend in the store</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 15 minutes</td>
<td>01</td>
</tr>
<tr>
<td>About half (1/2) hour</td>
<td>02</td>
</tr>
<tr>
<td>About 1 hour</td>
<td>03</td>
</tr>
<tr>
<td>About 1 and half hour</td>
<td>04</td>
</tr>
<tr>
<td>Two hours and more</td>
<td>05</td>
</tr>
</tbody>
</table>

7. Another data series is generated from construct pertaining to impact of In-store Factor (ISF) on sopping duration and the variable is named as ISF_SD

8. Age of the respondent is rounded to integer value and directly tabulated for demographic analysis.

9. Gender of the respondents is coded as follows (Assuming trans genders were not part of population under study) :

<table>
<thead>
<tr>
<th>Gender</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>1</td>
</tr>
<tr>
<td>Female</td>
<td>2</td>
</tr>
</tbody>
</table>
The variables defined at points 1 to 7 are generated from a Likert Type Five point Scale and data series obtained is of Interval type. The coding for Likert scale is as follows:

Coding Rule for attitude measurement Likert’s Type scale:

<table>
<thead>
<tr>
<th>Attitude</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>01</td>
</tr>
<tr>
<td>Disagree</td>
<td>02</td>
</tr>
<tr>
<td>Moderately Agree</td>
<td>03</td>
</tr>
<tr>
<td>Agree</td>
<td>04</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>05</td>
</tr>
</tbody>
</table>

Table 6.1

The data for variables at point 8 & 9 is of nominal type. Variables detail and their definition as created in SPSS software is attached as Annexure I (B).

6.3 Design of data analysis
Data analyses are performed in two sections. In first section a general profile analysis of respondents is performed. In second section remaining hypotheses are tested.

6.3.1 Methods for analysis of demographic profile and attitude towards shopping list.
The analysis in this section is based on demographic profile of shoppers and their attitude towards shopping list. In order to analyze the demographic profile and attitude of shoppers towards shopping list, a set of 8 questions numbered from 1 to 8 is introduced in beginning of the questionnaire. Questions from 1 to 8 are analyzed through descriptive and graphical analysis. Both descriptive and Graphical analysis is done for questions 1,2,3,5,8,7 in the questionnaire and only graphical analysis is performed for 4,6 & 8 numbered questions. For purpose of analysis, data is coded 1,2,3,4, 5 etc. as per number of options available in a question, where each number represent an alternative given in the question.
Descriptive analysis includes appropriate measure of central tendency, measure of variance etc. Mean Value represents Shopper’s tendency for a given population characteristics. Mode represents that most shoppers do in practice.

Two hypotheses are also stated in this section to study the influence of age and gender on impulse purchase. These hypotheses are analysed through ANOVA test.

6.3.2 Method for analysis of hypotheses

Each hypothesis is analyzed through a suitable and valid statistical method. Since data is metric and based on interval scale, various parametric and non-parametric analysis tools could be conveniently used for hypothesis analysis. In following section each of the hypotheses is taken one by one and method adopted for their analysis is explained.

Hypothesis # 1

In-store factors have no influence on impulse purchase behavior.

Analysis applied:

1. In order to find out the nature and extent of relationship between impulse purchase behavior and in-store factors correlation analysis will be applied and karl Pearson co-efficient of co-relation will be determined between CUM_IPB obtain from construct impulse purchase behavior in questionnaire and each of the factors obtained after factor analysis.

   The co-efficient of co-relation ‘r’ obtained for each factor will be used to interpret the nature and extent of relationship between the variables. Though it is not necessary to define dependent and in-dependent variable for performing a co-relation analysis (Gupta & Gupta, 2005), in this study CUM_IPB is dependent and in-store factors are independent variables.

   The value of ‘r’ for each factor will explain the extent by which these factors individually influence the impulse purchase of shoppers. The findings will be helpful to the retail
store manager’s to know the importance of these factors in influencing the impulse purchase of shoppers.

Hypotheses # 2
There does not exist a significant relation between attitude of shoppers towards ‘impact of in-store factors on impulse purchase’ and ‘proportion of impulse purchase in bill’

Analysis applied:
1. A co-relation between ISF_IPB variable based on average response of respondents from construct to measure the respondents attitude towards impact of in-store factors (ISF) on impulse purchase behavior (IPB) (Item # 12 in questionnaire) and proportion of impulse purchase in bill i.e. variable IP_PROP_BILL based on item # 13 in the questionnaire. Interpretation of co-efficient of correlation ‘r’ is, a positive and high / moderate value of ‘r’ indicates that those shopper’s who perceive the role of in-store factors on impulse purchase behavior as high also have high proportion on impulse purchase in their bill. This allows inducting that in-store factors do influence practically the Impulse purchase behavior and reinforce that people actually buy impulsively under influence of various in-store factors. A low value of ‘r’ explains that there is little impact of ISF on IPB and negative value means shopper’s IPB gets restricted or reduces with use of ISF in retail stores.

2. Cross tab analysis of variables ISF_IPB with IP_PROP_BILL is performed. This tabulation will show how the variables very with each other and also show crass tab frequency distribution. If hypothesis is true than high frequencies will lie in that part of matrix where both variables are of either high or low value (i.e. frequency distribution will co-vary with both variables in matrix).

Test of significance from cross-tab (i.e. Chi-Square test) will be performed to find out weather the respondents with different proportion of impulse purchase in their bill differ or not in their perception of impact of in-store factors on their impulse purchase. If difference in perception of shopper’s in significant, than Null Hypothesis is true and co-
variance of frequency in cross tab will occur, otherwise frequency distribution in cross tab matrix will be homogeneous (i.e. evenly distributed in the matrix) and alternate hypotheses is true. The null hypothesis is to be rejected and people with different proportion of impulse purchase in their bills, have uniform perception about role of in-store factors on their impulse purchase will be established. The strength of perception about role of in-store factors on impulse purchase behavior is high or low could be obtained from mean score of ISF_IPB variable.

Hypothesis #3
Impulse purchase proportion in bill is independent of shopping duration.

A cross Tab Chi-square test is performed between impulse purchases proportions in bill with SD (Shopping Duration). This will help to verify weather the shopper’s with differential shopping duration differ in impulse purchase behavior or not. If they differ than shopping duration will have influence on IPB and this hypothesis will be rejected.

Hypothesis #4
Shopping duration is not correlated with impulse purchase proportion in bill.

Analysis is done through performing Co-efficient of correlation between time spend in the store ‘SD’ with proportion of impulse purchase in the bill of the respondent. This analysis will help to find out how IPB of shoppers changes with SD. Co-efficient of correlation ‘r’ value will be interpreted to discover the nature and extent of relationship between the two variables. In case of acceptance of hypothesis further how strongly IPB increases with SD will be found, else no relation exists between the variables could be ascertained.

Hypothesis# 5
Longer stay of shoppers in side the store is not influenced by in-store factors.
1. A cross Tab Chi-square test is performed between shopper’s attitudes towards role ISF on IPB (This data series is available through Average of cumulative score of respondents in ISF construct) with SD (Shopping Duration). This will help us to verify whether the shopper’s with differential shopping duration differ in attitudes towards role ISF on IPB or not. If they differ than one could claim that differential shopping duration is due to ISF other wise the null hypothesis is accepted.

2. Next analysis is done through performing Co-efficient of correlation between shopper’s attitudes towards role ISF on SD with two variables, one the shopper’s attitude towards role of ISF on IPB and other the actual shopping duration.

First correlation analysis will help to find out weather shoppers who believe that ISF influences IP also believe that ISF influences SD. Second co-relation will help to determine weather In-store Store Factor’s are responsible for enhancing SD or not, i.e. those who exhibit longer shopping duration also score high in scale to measure opinion on influence of ISF on SD(ISF_SD).

Co-efficient of co-relation ‘r’ will be interpreted to discover the nature and extent of relationship between the two variables. This hypothesis will help to establish that those who exhibit longer SD attribute ISF responsible for this or not. A positive correlation between shopper’s attitudes towards role of ISF on IPB with role of ISF on SD means that those shoppers who believe ISF is responsible for IPB also believe that ISF influence their SD, else can be ascertained that shoppers keep different opinion on role of ISF on IPB and SD.

Mean score of ISF_SD of the construct ISF on SD (Item 16 in questionnaire) will allow to infer about shopper’s perception of role of ISF on influencing SD.

Hypotheses # 6
The impulse purchase behavior is substantially and collectively explained by various in-store factors.
Analysis is done through multivariate regression analysis method. The values of Beta and $R^2$ will be used for describing the independent variable i.e. impulse purchase behavior. Regression analysis will be used to develop the final integrated model of impulse purchase behavior with respect to in-store factors.

6.4 Pilot Survey
A pilot survey of 25 respondents is conducted in Saharaganj shopping mall. On the basis of feedback from pilot survey following changes were made in questionnaire:

1. 5th question is made as first question and a respondent giving negative reply for this question was politely asked to give-up the participation. A negative reply means the respondent has not made any impulse purchase.
2. Due to large number of questions in the questionnaire many respondents were reluctant to participate and fill the questionnaire. Hence it was decided to give a ‘Pen’ to those respondents who decided to participate and fill the questionnaire. This decision was taken primarily to encourage more people to participate in survey.
3. Section 7, the last section of questionnaire is brought in beginning as 2nd section. Since this section needed more involvement of respondent and is found in the pilot survey that by the time the respondent reached to last section they loose interest and left this section unfilled.

6.5 Chapter Summary

This chapter was devoted towards pre-designing the analysis scheme. Methods of analysis of each of hypothesis and rationality behind analysis are established in this chapter. A pilot run of analysis after feeding data from pilot survey in SPSS data sheet was also made to check suitability and to ensure data is executable through various analytical tools of SPSS to be applied in this research. After getting a satisfactory result from pilot survey and incorporating changes as mentioned above, further collection of data was done as described in data collection method section of chapter 5.