3 RESEARCH METHODOLOGY AND HYPOTHESIS
In the previous chapter, the underlying conceptual framework and literature reviews of this study has been presented. This chapter describes the methodology and hypothesis undertaken in relation to justification of the research paradigm, questionnaire design, sampling process and data collection and administration. In addition, this chapter introduces the intended analysis strategy as to test the propositions of this study. Finally, the data collection and relevant to this research is discussed.

3.1 JUSTIFICATION OF PARADIGM AND METHODOLOGY
A paradigm is described as a holistic approach underlying a research methodology. It reflects the philosophy of knowledge or how we reach the knowledge while methodology focuses on the practicalities of how we come to know. Realism deals with an external reality which cannot be known perfectly, that is in reality no one can claim to have perfect knowledge of what contributes to customer satisfaction, loyalty. This study proposes that, firstly, data are collected and analyzed from various sources including literature, exploratory research, pilot study, and by a final survey. Secondly, descriptive statistic, chi test, regression analysis and factor analysis of the surveyed data incorporates complex interdependencies using linkert scales. Drawn from literature pertaining to the subjects under study, several hypotheses are proposed and tested using the causal method, as to investigate the relationships Customer satisfaction.

3.2 RESEARCH OBJECTIVES
A thorough review of the literature on customer satisfaction in the retailing industry showed that no studies have been conducted to compare retail store under south Gujarat. Only a handful of studies have made comparisons between different stores but never attempted to find out the
extent to which the sex, age, education and monthly expenditure as well as
time of day to prefer shop of customers influenced their satisfaction of the
quality of stores’ services. As a result, this study seeks to fill these gaps.

The main objective of the research is to comparative study of
customer satisfaction regarding the quality of services provided by store in
South Gujarat region. Specifically, the objectives of the study are;

1. To compare the customer satisfaction about quality dimension of
retail services under stores.
2. To find out the relationship between overall satisfaction and the
quality dimensions of service in store.
3. To find out the main dimensions of the construct quality in relations
to stores’ services in South Gujarat Region.
4. To make recommendations on enhance customer satisfaction in the
retail industry in general.
5. To make recommendations about the SERVPERF model in
analyzing service quality and satisfaction in stores.

3.3 RESEARCH HYPOTHESIS

3.3.1 RELATIONSHIP BETWEEN CUSTOMER SATISFACTION
AND SERVICE QUALITY
Empirical evidence using the SERVQUAL model and other approaches
show that perceptions of customers are influenced by where they live or
come from. The study of Lopez et al (2007) revealed that although no
statistically significant differences were apparent in the overall levels of
satisfaction among the groups, respondents from the three largest regional
ethnic groups (African- Americans, Latinos, and non-Latino Caucasians)
weighted the importance of several of ten service quality dimensions quite
differently. The results of the study of Dash et al (2009) in Canada and
India revealed that at the national level, Indian consumers attached higher
importance to tangible attributes, whilst Canadian consumers considered service reliability more important. The findings of the research of Petridou et al (2007) indicated that Greek customers received higher quality services than their Bulgarian counterparts. Athanassopoulos et al (2001) also found that customer satisfactions were region and nation specific. The first objective of this study is to compare the satisfaction of customer with service quality at retail stores. Therefore, on the ground of the above objective and the findings, it is hypothesized that;

H0. There are no differences between the customer satisfactions regarding the service quality dimensions in retail stores.

The sub-hypotheses are;

H1. There are no differences in the perceptions of the satisfaction regarding the quality dimensions of retail stores.

H2. There are no differences in the perceptions of the store regarding the service quality dimension.

H3 There is no difference between the perceptions of demographic variables regarding the service quality dimensions and customer satisfaction of retail store.

3.3.2 RELATIONSHIP BETWEEN RETAIL STORES AND OVERALL SATISFACTION

Satisfaction has been the major concern of customers. Overall service quality leads to overall customer satisfaction. Overall satisfaction in general is also influenced by factors such as country, community, age, occupation and education when the SERVQUAL and other models were adopted. By comparing banks in Canada and India, Dash et al (2009) found that there were no differences between both countries with regards to the overall service quality expectations of customers. A similar study conducted by

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Lasser et al (2000) in USA and the countries in South America showed that in instances involving particular elements of quality and satisfaction, both the incidence of service failure and the type of communication between service providers and consumers may influence the effects of quality on satisfaction. Snee et al (2000) investigated customer satisfaction of Automated Teller Machines (ATMs) of banks in the United Kingdom and Hungary. The results showed that there was a statistically significant difference between both countries. Satisfaction levels in the UK were much higher than in Hungary. The third objective of this study is to look at the overall satisfaction of banks’ customers in Ghana and Spain. Based on the objective and the literature, it is hypothesized that;

H2. There are no differences in the perceptions of the satisfaction regarding the quality dimensions of retail stores.

The sub-hypotheses are;

H2.1. There is no relationship between overall satisfaction and the service quality dimensions of Reliance Fresh store.

H2.2. There is no relationship between overall satisfaction and the service quality dimensions of Dhiraj Sons store.

H2.3. There is no relationship between overall satisfaction and the service quality dimensions of Sahaj Super store.

H2.4. There is no relationship between overall satisfaction and the service quality dimensions of Star Bazar store.

H2.5. There is no relationship between overall satisfaction and the service quality dimensions of Big Bazar store.
H2.6. There is no relationship between overall satisfaction and the service quality dimensions of D-Mart store.

3.3.3 RELATIONSHIP BETWEEN OVERALL SATISFACTION AND SERVICE QUALITY DIMENSION OF RETAIL STORE

Empirical studies show that the quality of banks’ services is related to overall satisfaction by using the SERVQUAL and other methods. The results of the regression analysis of Jabnoun and Khalifa (2005) indicated that though all the four factors were significant determinants of quality of service in conventional banks, the most important were values and image. The study of Arasli et al (2005) showed that reliability had the highest impact on overall customer satisfaction. Lopez et al (2007) found that reliability, responsiveness, tangibles, access, communication and credibility positively correlated with satisfaction. In the case of Jamal and Anastasiadou (2009), reliability, tangibility and empathy positively correlated with customer satisfaction. Also, the results of the study of Caruana (2002) showed that banks’ service quality and customer satisfaction were correlated in Malta. This has been supported by the studies of Yavas et al (1997) and Siu and Mou (2005). In the case of Ravichandran et al (2010), responsiveness was the only significant dimension related to overall satisfaction of banks’ services in India. The fourth objective of the research is to find out the relationship between overall satisfaction and the quality dimensions of banks’ services in Ghana and Spain. In the light of the afore-mentioned objective and the findings it is hypothesized that:

H2. There are no differences in the perceptions of the store regarding the service quality dimension.
3.3.4 RELATIONSHIP BETWEEN SERVICE QUALITY, OVERALL SATISFACTION AND DEMOGRAPHIC VARIABLES

Gender constitutes an important factor as far as perceptions of service quality are concerned. The results of the study of Spathis et al (2005) in Greece showed that men had more positive impressions about the quality of banks’ services than women. Again, men ranked effectiveness and reliability highest, with assurance being second. Women on the other hand, ranked price first and access second. In a related study, Rashid and Hassan (2009) found that both men and women differed in the criteria used in selecting banks in Bangladesh. Women ranked core banking first and corporal efficiency second whilst men ranked corporal efficient first and compliance second. Dimitriades and Maroudas (2007) also found that men perceived experiencing a higher level of satisfaction than women. In contrast, the study of Lee and Chen (2009) showed that there was no significant difference between the perceptions of men and women about banks’ service quality in Vietnam. The second general objective of this research is to examine the perceptions of people in terms of sex, age, education and occupation about the quality dimensions of banks’ services in Ghana and Spain. Given the objective and the findings, it is hypothesized that:

Age has been identified as having an influence on the perceptions of customers when the SERVQUAL and other models were adopted. The study of Galloway and Blanchard (1996) in the United Kingdom unveiled that life stage affected perceptions of service quality. The results showed that the youth wanted to be treated well by bank’ staff and were mainly interested in cash from cash machines. In addition, though the independent were concerned with cash availability, they were somewhat more concerned with the nature and quality of the interaction with the bank. Contrary, the family was more concerned with privacy. The empty nester
was also concerned with privacy and attached more importance to issues of personal treatment than the others. The study of Rashid and Hassan (2009) revealed that age was a factor in selecting banks in Bangladesh. The age group 21-30 ranked corporal efficiency first and core banking second. On the other hand, the age group 31-40 ranked compliance first and cost benefits and corporal issues second. Finally, the age group 41 and above ranked confidence first and core banking, corporal and compliance second. Similarly, the study of Dimitriades and Maroudas (2007) indicated that there were significant differences in satisfaction ratings between younger and older citizen-customers. Apart from one item relating to the provision of reliable service and one item relating to context-specific factors, older individuals had more favorable perceptions of service satisfaction compared to their younger counterparts. The findings of Lee and Chen (2009) too indicated that there were significant differences among the age groups regarding banks’ service quality in Vietnam. Also Caruana (2002) found in Malta that service loyalty was affected by age only to a secondary extent. The second general objective of this research is to examine the perceptions of people in terms of sex, age, education and occupation about the quality dimensions of banks’ services in Ghana and Spain. Customers’ views to a large extent are influenced by their educational status when SERVQUAL and other methods were used. The research of Lee and Chen (2009) revealed that there were significant differences among the educational groups regarding banks’ service quality in Vietnam. The groups differed about the reliability dimension. The study of Siu and Mou (2005) unearthed that customer perceptions of credibility, security and efficiency are significantly correlated with the educational level in Hong Kong. In the same vein, university, technical/vocational and secondary groups had different views about the four dimensions found. The results of the research of Rashid and Hassan (2009) showed that the various educational groups
differed in the criteria used in selecting banks in Bangladesh. Undergraduates ranked corporal efficiency first and compliance and core banking second. On the other hand, postgraduates ranked coral efficiency and confidence first and core banking second. This has been confirmed by the study of Caruana (2002). He found that service loyalty was primarily affected by education in Malta. The second general objective of this study is to examine the perceptions of people in terms of sex, age, education and occupation about the quality dimensions of banks' services in Ghana and Spain. In the light of the afore-mentioned objective and the findings it is hypothesized that:

H3. There is no difference between the perceptions of demographic variables regarding the service quality dimensions and customer satisfaction of retail store.

### 3.3.5 SUMMARY OF HYPOTHESES TO BE TESTED

TABLE 3-1 GIVES THE SUMMARY OF THE HYPOTHESES TO BE TESTED.

<table>
<thead>
<tr>
<th>Hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H0. There are no differences between the customer satisfactions regarding the service quality dimensions in retail stores.</strong></td>
</tr>
<tr>
<td>The sub-hypotheses are;</td>
</tr>
<tr>
<td><strong>H1. There are differences in the perceptions of the satisfaction regarding the quality dimensions of retail stores.</strong></td>
</tr>
<tr>
<td><strong>H2. There are differences in the perceptions of the store regarding the</strong></td>
</tr>
<tr>
<td><strong>H3.</strong> There is no difference between the perceptions of demographic variables regarding the service quality dimensions and customer satisfaction of retail store.</td>
</tr>
</tbody>
</table>
H3. There is difference between the perceptions of demographic variables regarding the service quality dimensions of retail store.

**HO:1. There are no differences in the perceptions of the satisfaction regarding the quality dimensions of retail stores.**

The sub-hypotheses are:

H1.1. There is relationship between overall satisfaction and the service quality dimensions of Reliance Fresh store.

H1.2. There is relationship between overall satisfaction and the service quality dimensions of Dhiraj Sons store.

H1.3. There is relationship between overall satisfaction and the service quality dimensions of Sahaj Super store.

H1.4. There is relationship between overall satisfaction and the service quality dimensions of Star Bazaar store.

H1.5. There is relationship between overall satisfaction and the service quality dimensions of Big Bazaar store.

H1.6. There is relationship between overall satisfaction and the service quality dimensions of D-Mart store.
H0:2. There are no differences in the perceptions of the store regarding the service quality dimension.

H1:2 There is difference in service quality of retail stores

H0:3. There is no difference between the perceptions of demographic variables regarding the service quality dimensions and customer satisfaction of retail store.

3.4 RESEARCH DESIGN
Subsequent to establishing a paradigm, the development of an appropriate research design is pursued. A research design, which is a function of the research objectives, is defined as “…a set of advance decisions that makes up the master plan specifying the methods and procedures for collecting and analyzing the needed information”. An appropriate research design is essential as it determines the type of data, data collection technique, the sampling methodology, the schedule and the budget. Primarily, it helps to align the planned methodology to the research problems. There are many frameworks of research designs and they can be classified into three traditional categories: exploratory, descriptive and causal. This study applies these research designs as to achieve the research objectives. Although not compulsory, it is common that researchers utilize multiple research designs. That is, a researcher may begin with an exploratory study which will provide essential background information needed preceding a descriptive study. In turn, information obtained from a descriptive study may help the researcher design a causal experiment. The aim of this study is to identify customer satisfaction with retail store. In addition, this study attempts to investigate the extent to service quality of satisfaction. To
achieve these objectives, the research design of this study has been conducted in two phases. Phase one dealt with an exploratory study and the latter involved both descriptive and causal research. These phases are discussed next.

**Exploratory research** was conducted to develop initial insights and to provide direction for any further research needed. An exploratory study is essential when a researcher needs to define the problem more precisely and identify any specific objectives or data requirements to be addressed through additional research. Indeed, the comparative study on customer satisfaction in south Gujarat a relatively new phenomenon in retailing industry. Although the number of customers is proliferating, there is little empirical evidence to help marketers fully understand what constitutes consumer satisfaction in service quality with retail store in South Gujarat perspective. Therefore, the imperative of an exploratory study is to gain much-needed background information pertaining to building a long-term consumer relationship in retail business. The outcome of the exploratory study helped in developing the scales for the survey instrument in the subsequent descriptive research (phase two). Having obtained some primary knowledge of the subject matter by an exploratory study.

**Descriptive research** was conducted next. Contrary to an exploratory research, a descriptive study is more rigid, preplanned and structured, and is typically based on a large sample. The purpose of descriptive research is to describe specific characteristics of existing customer satisfaction. In addition, it helps provide data that allows for identifying relationships or associations between two variables. As many researchers have noted, descriptive research designs are for the most part quantitative in nature. There are two basic techniques of descriptive research: cross-sectional and longitudinal. Cross-sectional studies collect information from a given
sample of the population at only one point in time, while the latter deals with the same sample units of population over a period of time. The cross-sectional study is also referred to as a sample survey, that is selected individuals are asked to respond to a set of standardized and structured questions about what they think, feel and do. For the purpose of this study, a cross sectional study was the appropriate technique as opposed to a longitudinal study due to time constraints, and furthermore, this study does not attempt to examine trends. Subsequent to the descriptive study,

*Causal research* was conducted. Descriptive studies may show that two variables are related but are insufficient for examining cause and effect relationships. Causal research is most appropriate when the functional relationship between the causal factors and the effect predicted on the marketing performance variable is under investigation. This study concerns the causal relationships between customers satisfaction for retail stores in South Gujarat.

3.5 RESEARCH APPROACH:
The knowledge claims, the strategies and the method all contribute to a research approach the tends to be more quantitative, qualitative or mixed. The process are illustrated in figure 3.1 and are express next.
3.5.1 QUANTITATIVE APPROACH:
Qualitative approach is one in which the investigator primarily uses post positivist claims for developing knowledge (i.e. cause and effect thinking, reduction to specific variables and hypotheses and questions, use of instrument and observation, and the test of theories), employs strategies of inquiry such as experiments and surveys and collected data on predetermined instruments and that yield statistical data. Quantitative research is frequently referred to as hypothesis-testing research. Characteristically, studies begin with statements of theory form which
research hypotheses are varied. Then an experimental design is established in which the variables in question. The dependent variables are measured while controlling for the effects of selected independent variables. Subject included in the study are selected at random is desirable to reduce errors and to cancel bias. The sample of subjects is drawn to reflect the population.

These procedures are deductive in nature, contributing to the scientific knowledge base by theory testing. This is the nature of quantitative methodology. Because true experimental designs required tightly controlled condition, the richness and depth of meaning for participant may be sacrificed. As validity concern, this may be limitation of quantitative design.

3.5.2 QUALITATIVE APPROACH
Qualitative research is multi method in focus, involving an interpretive, naturalistic approach to it subject matters. This means that qualitative research study thinks in that their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them.

Qualitative approach is one in which the inquire often makes knowledge claim based primarily on constructivist perspective (i.e., the multiple meaning of individual experiences, meaning socially and historically constructed, with an intent of developing a theory or pattern) or advocacy/participatory perspective (i.e. political, issues- oriented, collaborative or change oriented) or both. It also uses strategies of inquiry such as narratives, phenomenology, ethnography, grounded theory studies or case studies. The research collected open-ended emerging data with the primary intent of developing themes from the data.
So this is qualitative and quantitative both. Researcher used quantitative primary data collected through descriptive survey method. Mall intercepts methods of personal interviews have been by the research to collect primary quantitative data.

3.6 SURVEY METHOD AND ADMINISTRATION
In a survey, respondents may be asked verbally, in writing or via a computer a variety of questions regarding their behaviour, attitudes, demographic and lifestyle characteristics. Typically the questions are standard and structured, which means a formal questionnaire is prepared and questions are asked in a prearranged order. In this study, a survey was used as the method of primary data collection. The structured survey involved several steps from designing the questions to field work and assessing the reliability of the measurement used. These processes are illustrated in Figure 3.2 and are discussed next.
3.7 **SPECIFY THE INFORMATION NEEDED**

The objectives of the first stage were twofold: identify the information requirements and determine the source from which the information could be obtained. This stage begins with identifying the information needed to meet the research objectives. As such an exploratory study was carried out as discussed. From these interviews, insights were sought on the variables identified and on an initial format of a questionnaire.
3.7.1 SELECTION OF SURVEY METHOD.

The decision to choose a survey method may be based on a number of factors which include sampling, type of population, question form, question content, response rate, costs, and duration of data collection. The most appropriate survey method for this research was a personally administered one. This method was chosen for the following reasons:

- The customers are easily available at retail stores.
- A higher response rate of almost 100% can be assured since the questionnaires are collected immediately once they are completed.
- Higher anonymity of respondents because respondents are not required to disclose their identities.
- It can be very time consuming if a wide geographic region is involved. However for this survey, the customers of different retail stores, hence data were collected from regions from various branches of stores at various locations. I was responsible for all the detailed aspects of the project including research design, designing the survey instrument, testing of hypotheses and data analysis. I was responsible for all the detailed aspects of the project including research design, designing the survey instrument, testing of hypotheses and data analysis.

3.7.2 DESIGNING THE QUESTIONNAIRE.

This step involves selecting appropriate measurement scales, question wording and content, response format and finally the sequence of questions. The questionnaire was written in English language, hence can be easily understood by the respondents.

Measurement scale. As this study aims to measure customer satisfaction towards the retail store, linkert scales were deemed appropriate as it is frequently used in marketing research to measure attitudes. The use of a
linkert scale would ensure that the overall score, which was a composite of several observed scores, was a reliable reflection of the underlying true scores. Three types of measurement scales were used in this research: nominal, ordinal and interval.

- **Nominal scales** were used for identification purposes because they have no numeric value. For example, respondents were asked to select the location from which they access the Internet.

- **Ordinal scales** were used to rank satisfaction of service, age group and income level. These scales were then assumed to be interval scales, as is commonly practiced in social science research.

- **Interval scales** were used to measure the subjective characteristics of respondents. For example, in this study, respondents were asked about their attitudes and behaviours in relation to service quality and satisfaction. This scale was used due to its strength in arranging the objects in a specified order as well as being able to measure the distance between the differences in response rating.

**Question content and wording.** The question content and wording, the questions were designed to be short, simple and comprehensible, avoiding ambiguous, vague, estimation, generalization, and leading, double barreled and presumptuous questions.

**Response format.** Two types of response format were chosen: dichotomous close-ended and labelled scales. In order to obtain information pertaining to respondents’ demographics and service quality a dichotomous close-ended question format was used. In addition, to obtain service quality response towards customer satisfaction. Apart from the simplicity to administer and code in further statistical analysis labelled scale response format is appropriate for marketing research as it allows the respondent to respond to attitudinal questions in varying degrees that
describes the dimensions being studied. For this research, labelled Likert scales were appropriate to measure responses. This scale was adopted based on the following reasons:

- It yields higher reliability coefficients with fewer items than the scales developed using other methods.
- This scale is widely used in market research and has been extensively tested in both marketing and social science.
- It offers a high likelihood of responses that accurately reflect respondent opinion under study.
- It helps to increase the spread of variance of responses, which in turn provide stronger measures of association. In relation to the number of scale points, there is no clear rule indicating an ideal number. However, many researchers acknowledge that opinions can be captured best with five to seven point scale. In fact, researchers indicate that a seven-point scale is just as good as any other. Thus, a seven-point Likert scale was used in this research.

3.7.3 **SEQUENCE OF QUESTIONS.**

The questionnaire began with less complex and less sensitive questions and progressed to opinion-sought questions. The questionnaire consisted of three parts. The first part, Section I, was designed to assess the attributes affecting respondent’s perception on service quality, satisfaction, with respective retail store. The respondents were asked to indicate their opinions on the various dimensions of the variables being studied. Section II consists of service quality, overall satisfaction, and future transaction and suggested other. Section III consisted of demographic information such as a respondent’s gender, age group and monthly expenditure and preference of product.
3.8 QUESTIONNAIRE DISTRIBUTION AND ADMINISTRATION

This research called for data to be collected from four major retail stores in South Gujarat. I had collected all data in three months. In process of data collection, I need to take permission from the stores for smooth functioning of survey Process. When the data collection process was over, the data entry is going to done. It is important to note that I was fully responsible for designing the questionnaire and analyzing the data for this study. The sampling process included several steps: define the population, establish the sampling frame, specify the sampling method, determine the sample size and select the sample.

**Step 1: Population.** The target population for this study was defined as individuals purchasing form retail store in South Gujarat at the time the survey was conducted.

**Step 2: Sampling frame.** To establish the sample frame, customers were obtained from various retail store in south Gujarat. Although the respondents were selected from these stores, it was clearly expressed in the questionnaire that their opinions should reflect their satisfaction of service quality.

**Step 3: Sampling method.** Non Probability sampling was used as this research sought to generalize the results obtained as much as possible. Thereafter, a convenient sampling method was deemed appropriate as this method ensures efficiency, speed, low cost as well as produces a more representative sample. For this study, in order to minimize the sampling bias, respondents are asking to fill the questionnaire at store location.

**Step 4: Sample size.** Now that the sampling method was determined, the next step involved determining the sample size of this study. The required sample size depends on factors such as the proposed data analysis
technique and access to sampling frame. The proposed data analysis technique for this research is factor analysis which is very sensitive to sample size and less stable when estimated from small samples. As a general rule of thumb, at least 300 cases is deemed comfortable, 500 as very good and 1000 as excellent, thus it was decided to target a total of 1260 respondents from the retail store of south Gujarat. The division of samples size in six different store in equal ration i.e.

- Reliance Fresh-210
- Dhiraj Sons-210
- Sahaj Super Store-210
- Star Bazar-210
- Big bazaar-210
- D-Mart-210

**Step 5: Sample selection.** This step required a detailed specification of all the steps discussed above. In this study, it was decided that every 210 respondents from the list would be selected until the required sample size of 1260 respondents was reached. After having decided on the sampling process, the tests of reliability and validity of the instrument were pursued.

**Step 6: Reliability and validity tests of the instrument.**

**Reliability.** In order to test reliability, a Cronbach’s coefficient alpha was used as it is the most common method used for assessing the reliability for a measurement scale with multi-point items. The coefficient, which reflects homogeneity among a set of items, varies from 0 to 1. However, a good reliability should produce at least a coefficient value of 0.60.

**Content validity.** Content of this research was validated by determining the variables which have been defined and used previously in the literature. In this study, the dimensions of variables were identified from the
SERVPERF model and literature. Further, three marketing professors were requested to review a list of measurement scale in a questionnaire format before it was sent out for pre-testing.

**Construct validity.** Demonstrates the extent to which the constructs hypothetically relate to one another to measure a concept based on the theories underlying a research. For the purpose of this study, factor analysis was performed to measure the dimensions of a concept as well as to identify which items were appropriate for each dimension. Then, since this study sought to test the potential relationships among variables a principal component analysis using SPSS was applied. Further, to achieve construct validity, the measurement should demonstrate convergent validity and discriminant validity. Convergent validity refers to the items purporting to measure the same construct correlates positively with one another. On the other hand, the latter requires that an item does not correlate too highly with other items of different constructs.

### 3.9 DATA ANALYSIS STRATEGY

Data analysis involved steps such as coding the responses, cleaning, screening the data and selecting the appropriate data analysis strategy as detailed below.

**3.9.1 CODING OF RESPONSES.**

This task involved identifying, classifying and assigning a numeric or character symbol to data, which may be done in two ways: pre-coded and post-code. In this study, most of the responses were pre-coded except for questions 1-21, which required post-coding. Taken from the list of responses, a number corresponding to a particular selection was given. This process was applied to every earlier question that needed this treatment. Upon completion, the data were then entered to a statistical analysis software package, SPSS version 17.0 & SYSTAT 13.0, for the next steps.
3.9.2 CLEANING AND SCREENING DATA.
The process of cleaning and screening data included inconsistency checks and missing responses. In this procedure as research I had sound clearly collected data with research instrument i.e. questionnaire.

3.9.3 SELECTING A DATA ANALYSIS STRATEGY.
The final step was to select the appropriate statistical analysis technique. To do this, research elements, namely the research problem, objectives, characteristics of data and the underlying properties of the statistical techniques are considered. To meet the purposes of this study, descriptive and factor analyses with chi test and krushkal Wallis ANOVA test were applied.

Descriptive analysis refers to the transformation of raw data into a form that would provide information to describe a set of factors in a situation that will make them easy to understand and interpret. This analysis gives a meaning to data through frequency distribution and percentage value, which are useful to identify differences among groups.

Factor analysis:-Prior to multivariate analyses, a principal component analysis was performed to identify the common items of an underlying dimension, or also called factor. The VARIMAX rotation was applied as to simplify the interpretation of factors. Through this extraction technique, it was obvious which factors should be considered: the higher/lower loading factors will obviously produce higher/lower values. Factors that produced Eigen values greater than 1.0 were considered significant. Once these factors have been identified, large numbers of variables can be reduced to a more manageable number, which can be achieved, by factor extraction and rotation component matrix.
ANOVA (analysis of variance) - When we have only two samples we can use the t-test to compare the means of the samples but it might become unreliable in case of more than two samples. If we only compare two means, then the t-test (independent samples) will give the same results as the ANOVA. It is used to compare the means of more than two samples. Here with this study six stores were taken for analysis customer satisfaction with their service quality variables.

Regression analysis is to determine the values of parameters for a function that cause the function to best fit a set of data observations that you provide. In linear regression, the function is a linear (straight-line) equation. In the linear regression model, the dependent variable is assumed to be a linear function of one or more independent variables plus an error introduced to account for all other factors:

\[ Y = a + B \cdot X_1 \ldots \]

In the above regression equation, \( y \) is the dependent variable, \( x_1, \ldots, x_iK \) are the independent or explanatory variables. The goal of regression analysis is to obtain estimates of the unknown parameters Beta_1, ..., Beta_K which indicate how a change in one of the independent variables affects the values taken by the dependent variable.

Pearson's chi-squared test (\( \chi^2 \)) is the best-known of several chi-squared tests – statistical procedures whose results are evaluated by reference to the chi-squared distribution. Its properties were first investigated by Karl Pearson in 1900. In contexts where it is important to make a distinction between the test statistic and its distribution, names similar to Pearson X-squared test or statistic are used.

It tests a null hypothesis stating that the frequency distribution of certain events observed in a sample is consistent with a particular theoretical distribution. The events considered must be mutually exclusive and have
total probability. A common case for this is where the events each cover an outcome of a categorical variable. A simple example is the hypothesis that an ordinary six-sided die is "fair", i.e., all six outcomes are equally likely to occur.

3.10 RESEARCH LIMITATION
The study is confined to the Indian scenario and with South Gujarat region as the focal point. Geo-demographic could have great deal of influence on customer satisfaction. The study also confined to defined formats and does not cover various formats that exist in the retail sector. We used limited 21 items to measures customer overall satisfaction. Considering the questionnaire is too long, people may not will to answer it outside of the stores patiently.