CHAPTER 4

RESEARCH METHODOLOGY

This is to describe a detailed layout of research design and the research methodology employed to act in response to the research questions and scrutinize the hypotheses regarding measurement of quality of service leading to CS in the field of internet banking. The chapter also confers how the sample was derived, the size of the sample, the instrument used for research, procedure of data collection, the tools for data analysis and the ethical considerations.

Research refers to an art of scientific investigation. In other words research is a systematic and scientific investigation for relatable information on a particular topic. The reason behind taking research methodology into account is that one can have awareness pertaining to the method and procedure taken up for achievements of purpose of the project. With the implementation of this methodology others can also evaluate the findings.

The methodology adopted for studying the relationship among internet banking service quality, banking product quality, information provision and OIBSQ and subsequently the CS was surveying the bank account holders dealing with internet banking of Delhi NCR, Uttar Pradesh, Madhya Pradesh, Karnataka and Rajasthan. So keeping in view the environment of the study to collect all the relevant information concerning the experiences of public sector banks’ users and the private sector banks’ users, direct personal interview with the help of structured questionnaire was chosen for collection of primary data.

4.1 Research Questions and Conceptual Framework

Comprehensive economic growth of a country largely depends upon the growth of the banking sector there which, in turn, is strongly maintained by the advancement of information technology and its implementation in banking.
Transaction costs are reduced drastically and, simultaneously, front end operations are improved with back office management.

The level of CS and how to attract them must be clearly understood by the bankers. At the time of evaluating online service quality, the managers should not use general measures rather they must adopt industry – specific measures so as to ensure evaluation of all the aspects of definite online service quality.

Customers’ loyalty to a bank depends a lot upon the level of fulfillment of individual needs and their satisfaction for an organization providing online banking services.

To ensure the most economic cost to company (CTC) it is very important for a bank to promote and encourage internet banking.

Lastly, merely providing good online service quality is not all as far as maintaining long lasting and strong relationship with customers is concerned.

4.1.1 Quality of Website

In the area of ecommerce the website quality is an imperative concept because the perception of customer’s for the quality of website is directly related to the purchase intentions of the customer. So, the considerations those are most vital for the assessment of the website offerings of bank are most important and have become significant for the banks to follow and implement an e-strategy that is efficient for the perspective of marketing the services, to retain clients, to attract new clients. The banks are required to make a clear portrait about the expectations of its customers that the website shall offer. Website of the bank could serve as the basic element for the purpose of evaluating the perceptions and expectations of the quality of website.

4.1.2 Information Quality, System Quality and Service Quality

It refers to the assessment of the perceived value of a customer with respect to the output created by a website. System quality refers to the overall performance of
the website that can be assessed by a customer with a perceived degree of used friendliness at the time of making an online transaction. The service quality indicates the overall judgment of the customers and the estimations of the services delivered online. These three factors of quality have a significant role in the satisfaction of customers that use online banking services and are thus helpful in enhancing the purchase intentions of the customers. As a whole the OIBSQ is used as stimuli in this study.

CS consumer’s response of fulfillment may, further, be defined the summary of psychological status resulting when the sentiment surrounding disconfirmed expectations is attached with a consumer’s former feelings about the service encounter. CS is one of the vulnerable consumer outcomes in online business to consumer environment. CS as a construct has obtained multiple importance in recent times. A great many research efforts have been poured into understanding the consequences and antecedents of CS and, thus, it does not remain to be a new concept.

It is also important to learn customer’s purchase intention because customer’s buying behavior can generally be predicted by their purpose along with CS. Purchase intention of a customer is one measure of behavioral intention. To examine the behavioral patterns of consumers their purchase intention have been used to forecast actual behavior because it is related to their actual behavior and the connectivity has been investigated empirically in tourism and hospitality businesses. The common behavioral measures investigated are purchases and/or repeat purchase intentions or actual purchase/repeat purchase behavioral patterns; inclination to price tolerance, present word of mouth and tendency to make additional purchases frequently from the same source. This study is focused upon purchase intention as the critical outcome measurement. During the first visit to a website, the major challenge that the service provider faces is to convert the visitor into a purchaser. Furthermore, purchase intention directly impacts on both profitability and revenue of the firm.
One more fact that gives rise to the need of the hour to explore internet banking and its associated compounding factors is the realization by several developing countries that by providing internet facilities to their people, the sense of dignity are reinforced which, in turn, would empower them to take part in the world society and economy as a whole. This gesture by various Governments, including the Government of India, has been responded by financial sectors of world economies leading to a competitive provision of e-Banking services to its customers in the banking sector. Up to the extent that while hiring personnel in the banking sector, it is highly expected that the applicants must have fair knowledge of information technology (IT) and the services enabled by IT (ITES) else adequate training would be provided to them after employment. This has augmented the growth and a cutting edge competition in the financial industry. The financial institutions offer almost similar products to their minds, keeping in mind the importance of globalization worldwide. Their commitment to CS may vary from organization to organization. CS is a basic concept in the field of marketing and its quest is a significant goal of business. In fact businesses of all sorts are devoting substantial energies in the pursuit of CS. In fact another entirely new industry of CS research and consulting has taken a well-crafted shape. Leading researchers of CS strongly advocate that CS augments future profitability and it is an inevitable measure of a firm’s performance, industries and national economies. A remarkable implementation of market surveys on CS by service industries is guided by the assumption that a customer satisfied by the services of an organization will surely return for a repurchase. It is also a fact that CS is critical for banking sector where organizations compete in the global market and with other foreign banks in the fray.

On the basis of research question crystallization, there are two categories of research designs, known as Exploratory Research and Formal Research. In an exploratory research the purpose is usually to explore the nature of a situation as it exists in a particular environment, which usually engages the use of unstructured questionnaires to gather enough data about the observable fact under
consideration. On the other hand, formal research is defined as involving a well-structured study that seeks to test hypotheses or specific questions.

The current study is a formal research. This is because it goes further than exploration of facts; it has well-structured systematic methods that seek to answer some specific research questions.

A basic orientation to research and theory also known as research paradigm, has to be a universal framework organizing theory and research that embraces basic assumptions, key issues, and models of quality driven research and means of seeking answers. With regard to research paradigm a research can be quantitative or qualitative.

Quantitative research is a tool involving measurement of variables and the deliverance of findings in numerical form where research findings are described by confidence intervals, text of significance and mathematically demonstrated relationships. Qualitative research, on the other hand, is a paradigm which is a demeanor to find out what people know, do, think and feel. Such a study aims at understanding and explaining a phenomenon that focuses on “how” and “why” questions along with in-depth and detailed “what” questions.

This study is based on quantitative as well as qualitative paradigms. On one hand, some numerical data is collected and analyzed for example the number of satisfied customers and those who are unsatisfied with internet banking service quality. On the other hand, words are used in explaining how CS can be described in internet banking in public as well as private banking sectors, which makes it a qualitative research.

4.2 Hypotheses Development

Taking into account the above mentioned curiosities and questions, thus cropped up, we need to specify our research problem so as to be able to dig deeper to find the answers of our problems. Individual is the unit of this study and SERVQUAL
tool, designed by Parasuraman et al. (1988), is adapted for the measurement of service quality and CS. A 5-point Likert scale with the range of 1 (strongly agree) to 5 (strongly disagree) was used for measurement purposes, that is to quantify the qualitative responses.

The questionnaire contains the demographic sketch of respondents and items for the measurement the constructs. The sample size for the purpose of research is targeted to be 385 samples which would be a random selection of the internet banking users.

For the purpose of sample a questionnaire was developed and was its reliability was tested using cronbach alpha. The respondents were told about the use of the questionnaire and were persuaded to complete the questionnaire and provide their feedback. The pilot phase of the survey was conducted on sample of 25 respondents. Looking into the results derived from pilot phase few changes and refinements were made in the survey questionnaire and the amendments were made. The work done by Kleinbaum, Kupper and Muller (1988) suggests taking respondents in multiple of 10 of the questions. Looking into it total 385 responses were taken to be informative and 13 responses were rejected for being defective.

4.2.1 Association between Online Customer Service Quality and Overall Internet Banking Service Quality

There is no face to face interaction of online customers with the staff of bank, then also the online customers expect a respectful treatment, valuable information and reliable services from the website of the bank (Jun and Cai, 2001). Lewis and Booms (1983) defined service quality as “a measure of how well a delivered service matches the customers’ expectations” whereas Gronroos (1983) suggested that service quality is the perception of customers in relation to difference between the actual service performed and expected service. Johnston (1997) conducted an empirical study and established that reliability and security are considered most important by the customers and are followed by competence, responsiveness and communication. A number of measures were developed by
Jayawardhena (2004) that can be used for measurement of customer service quality in internet banking services. These measures were across five dimensions that were trust, credibility, website interface, attention and access. Han and Baek (2004) also used SERVQUAL tool and found that there was a positive association between OIBSQ and OCSQ.

**H1. Online customer service quality is positively associated to overall internet banking service quality.**

### 4.2.2 Association between Overall Internet Banking Service Quality and Online Information System Quality

OISQ is the key enabler of the services used by internet banking users. Unless the information system works well, customers cannot access information or are not able to make regular transactions smoothly and, subsequently, they have to compromise with the level of service quality.

If the web site of the concerned bank is not informative enough, there would be a negative impact on the observations of customers regarding OIBSQ. Depending upon the ease of use of a bank’s web site the extent of safer online transactions vary, the easier the use of website the safer the online transactions will be. If the transaction is less erroneous, the perceptions of the customers of online service quality offered by the bank will be better. Thus, second hypothesis is as follows:

**H2. Online information system quality is positively associated to overall internet banking service quality.**

### 4.2.3 Association of Banking Service Product Quality and Overall Internet Banking Service Quality

BSPQ does influence the customers’ perception of overall banking service quality, significantly. Strieter argued that since there is an increased emphasis on marketing, as the most vital development in banking, a wide range of financial services are offered by banks.
More new customers can be attracted by way of adding more features and characteristics of financial products that are offered to the existing customers. Some of the scholars in the field of commerce and finance are of the opinion that there is a great influence of a wide range of products on internet banking CS. Thus, a wide range of products with varied features is a definite factor influencing customers’ observation of internet banking service quality, advocated that firms that offer a wide range of services with varied features are preferred by online customers. Hence, third hypothesis is:

**H3. Banking service product quality is positively associated to overall internet banking service quality.**

### 4.2.4 Association between Overall Internet Banking Service Quality and Customer Satisfaction

An interesting quote by Oliver (1997) says “everyone knows (satisfaction) until asked to give a definition. Then it seems nobody knows”. Satisfaction refers to the end result of individual service operation and the overall service encounters, while customer’s overall sentiment of the relative superiority/inferiority of an organization and the services offered by it is its service quality. Numerous studies have revealed that service quality and CS are reciprocal to each other in an online environment. The overall satisfaction of customers with the bank is likely to be enriched provided their perception of online service quality is optimistic. The weight age assigned by customers to OIBSQ is proportional to the weight age given with regard to other qualities of the bank. Thus, fourth hypothesis is as follows:

**H4. Overall internet banking service quality is positively associated to customer satisfaction.**

The development of the hypotheses also incorporates the possibilities of future research that may be followed by the present study by other researchers in quite a few ways.
To begin with, this study is oriented all around the OIBSQ and the subsequent CS of the present practitioners of internet banking. Another fact remains that there are much more internet users all over the world who need it for resourcing information yet they have never made any commercial transactions on the World Wide Web. However, these consumers of the internet services would, definitely, have their own kind of perception for online service quality and also that their opinions would be of a variety of disparities in them. They must be considered to be future internet banking customers and, therefore, web designs of quality scales that are more generalized would be required to be developed.

As is seen everywhere, the field of e-Commerce is at its boom and as it gets increasingly matured, the customers would develop diversified expectations relating to overall internet service quality, including that of commercial transaction channels. This would result in an increasing industry-wide requirement of service quality standards. In this way, customer expectation-disconfirmation paradigm may be used by the future researchers to investigate the contemporary and forthcoming dimensions of overall internet service quality and the subsequent CS.

The way banking practices are performed in the present era, many innovative modifications have been incorporated resulting into much refined form of banking and other financial services. The use of online technology in banking services, popularly known as internet banking, is one such modification. According to Ho and Wu (1999), online transactions have five factors, which are causal in nature, that affect CS up to a great extent. These determining factors are technical characteristics, logistic support, presentation of home page, features of information and product personality. With the fear of perceived worries and technical problems relating to service delivery systems based on technology, most of the customers tend to ignore or reject the use of internet banking as they lack the confidence that such systems can be successfully used to address the forthcoming challenges that might crop up.
Considering Indian sub-continent and a number of other developing countries it is argued that internet banking is still in its state of infancy since smaller number of customers are familiar with the usage of electronic channels for managing their financial matters, resulting into a low adoption level of internet banking. In addition to this, it is also indicated that the dissatisfaction among the customers with electronic channels or internet banking is due to the fact that most of the pioneering products and recent services introduced are prone to high failure rates. Customer location, the utmost need to maintain CS and the capability of the system software, as determinant factor to motivate customers’ decision to make use of electronic channels for banking services, are the operational constrains that persuade the handling experience and, subsequently, affect the level of CS.

It has been noticed some customers have shifted from traditional banking owing to the perceived satisfaction related to internet banking. The major gradation for such a shift is the perceived ease of use, perceived usefulness, privacy and security provided by internet banking. Increasing website usability might result in increasing levels of customers’ commitment to the website that would have a significant, direct and positive effect on its usage as well as CS.

Earlier studies on the Indian economy and internet banking revealed that private and foreign banks have outperformed public sector banks in offering an extensive range and more advanced features of internet banking services. This enabled private and foreign banks to satisfy their clients better than their local public sector counterparts.

4.3 Research Design

4.3.1 Details of Study

The study conducted is an empirical study. An empirical research derives knowledge from the actual experience of the researcher not from any theory or belief. It is based on the phenomena that are observed or measured by the
researcher. The feature of empirical research is that it could be recreated and its results can be tested.

The key characteristics of empirical research are:

- Specific questions related to research are to be answered.
- A study relative to behaviour, population or phenomena is defined.
- A description that details the process that is used to study the selection criteria, testing instruments (for example survey) and population and phenomena.

4.3.2 Selection of Study Area

In India, the net banking facility is offered by almost all of the banks to its customers throughout the country. This study mainly focuses on the net banking users of Uttar Pradesh, Karnataka, Rajasthan, Madhya Pradesh and Delhi NCR. The samples are taken on a random basis and the respondents have filled questionnaire manually as well as online. Maximum of the responses have been collected online by the using Google drive.

4.3.3 Sample and Sampling Methods

Here the sample represents the entire population of internet banking users of Delhi NCR, Uttar Pradesh, Karnataka, Madhya Pradesh and Rajasthan. The sample size for the purpose of research is 380+ samples. The sample size is determined from the recommendation of Kleinbaum, Kupper and Muller, (1988) that suggests that the number of respondents to be multiple of 10 of the number of questions in the questionnaire. The questionnaire contains 38 questions.

For the purpose of sample a questionnaire was developed and was its reliability was tested using cronbach alpha. The respondents were told about the use of the questionnaire and were persuaded to complete the questionnaire and provide their feedback. The pilot phase of the survey was conducted on sample of 25
respondents. Looking into the results derived from pilot phase few changes and refinements were made in the survey questionnaire and the amendments were made. Looking into it total 385 responses were taken to be informative and 13 responses were rejected for being defective.

The composition of sample contained 246 or 63.9% males and 139 or 36.1% females as shown in figure 4.1 below. Out of the total sample of 385 respondents 274 or 71.2% respondents were between the age group of 20-30 years. Two respondents were under the age of 20 years and two were above 60 years. 72 or 18.7% respondents were among the age group of 31-40 years. 22 respondents were among the age group of 41-50 years constituting 5.7% of total population. 13 respondents were among age group of 51-60 years constituting 3.4% of the total sample population.

![Figure 4.1: Composition of Male and Female in Sample.](image)

### Table 4.1 Sample Demographics

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>Respondents</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>246</td>
<td>63.9%</td>
</tr>
<tr>
<td>Female</td>
<td>139</td>
<td>36.1%</td>
</tr>
<tr>
<td>Age</td>
<td>Count</td>
<td>Percentage</td>
</tr>
<tr>
<td>------------------</td>
<td>-------</td>
<td>------------</td>
</tr>
<tr>
<td>Under 20</td>
<td>2</td>
<td>0.5%</td>
</tr>
<tr>
<td>21 - 30</td>
<td>274</td>
<td>71.2%</td>
</tr>
<tr>
<td>31 - 40</td>
<td>72</td>
<td>18.7%</td>
</tr>
<tr>
<td>41 - 50</td>
<td>22</td>
<td>5.7%</td>
</tr>
<tr>
<td>51 - 60</td>
<td>13</td>
<td>3.4%</td>
</tr>
<tr>
<td>Above 60</td>
<td>2</td>
<td>0.5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>385</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

**Figure 4.2: Age of Respondents**

A sample design is a clear-cut plan for obtaining a sample that represents a given population. It refers to the techniques that the practitioners would adopt in choosing items for the samples. Sample design may also work out the number of
items that should be included in the sample i.e the size of the sample. Sample
design is determined prior to data collection. Here we choose the population as
sample in our sample design. The selected respondents should be the
representatives of the total population.

This chapter attempts to present the methodological apprehensions used in
carrying out this research and provides a validation for steps taken. It covers the
common research perspectives, data collection summary followed by statistical
measurement techniques, access strategies and credibility of the research.

4.3.4 Data Collection Methods

The current study makes use of qualitative and quantitative data collected from
primary sources in order to objectively answer the research questions. Primary
data is a pool of statistical data generated by researchers for the precise purpose of
addressing a research problem. It is what is originally collected by the researcher
from the sample or target population. In the current study the primary data
generated are those responses of Internet Banking customers approached via a
questionnaire survey.

Many scholars believe that while employing survey strategy, the main tools used
are questionnaires and self-administered or interviewer administered structured or
unstructured interviews or a combination of both. Additionally it is agreed upon
that, the questionnaire can be employed for descriptive or explanatory study,
and it must have a good layout, complete items, unambiguous questions, non-
offensive but relevant items and the ability to bring out readiness to answer in
respondents. Which is why, self-administered interviews and structured
questionnaire are used as tools to collect data from respondents. The rationale of
the questionnaire is to contain insight into customers’ level of satisfaction
with OIBSQ and lastly to collect some data on respondents’ bio-data.
The self-administered questionnaire consists of mainly five dimensions with 10 items for internet banking service quality dimensions in accordance with the SERVEQUAL tool developed by Parasuraman et al., (1988, 1991).

Individual was the unit of this study and SERVQUAL tool was adapted for the measurement of service quality and CS. A 5-point Likert scale with the range of 1 (strongly agree) to 5 (strongly disagree) was used for measurement purposes.

The questionnaire contains the demographic sketch of respondents and items for the measurement the constructs. The sample size for the purpose of research will be 380 samples which will be internet banking users and will be selected randomly.

A pre-screening of the questionnaires was done with the customers of top level banks in India who have experience with branch banking. The respondents were persuaded to provide feedback on the indistinctness and structure of the questions. With the help of the pre-test, the selected questions were refined and some amendments were made. There were a total of 385 responses identified to be informative enough at the end of data collection process.

In all, thirty eight items asked about the level of customer satisfaction by means of ten dimensions of overall internet banking service quality adapted from SERVQUAL tool developed by Parsuraman et al., (1988). Other than these 38 items, 9 items relate to respondent’s characteristics such as name age, city, e-Mail id, net banking user, contact number, gender, home town and state.

OCSQ dimension was investigated using 12 items in the questionnaire which was supposed to be responsible for OIBSQ and a positive association between the two variables was observed.

By multiple regression analysis one would be able to check the OCSQ, OISQ, BSPQ dimensions. By using linear regression the subsequent impact of OIBSQ on CS can be checked. The multiple regression analysis is mathematically identical in many ways; however the correlation is a technique that is interdependent
whereas regression is a dependent technique. The value of R square ranges from 0 through 1 and indicates how far the dependent variable is elucidated by the independent variables. The more the value of R square tends to one the stronger the alliance among the dependent variable and the independent variables. Normality is not required at all times while performing regression analysis for analyzing variables. Nevertheless, better results may be expected from normally distributed data. Since multi co-linearity among independent variables weakens the regression model, when the association among them is strong, it should better not exist. A regression analysis for testing the strength of bonding among the dependent variable, OIBSQ and the independent variables, OCSQ comprising of Customer service, Web design, Preferential treatment, Assurance and Information provision) was performed.

Furthermore, majority of the variance in OIBSQ found was owing to the reasons not pertaining to the service quality measures considered in the chosen regression model. The statistical results show that all the service quality dimensions i.e. Customer service, Web design, Preferential treatment, Assurance and Information provision were significant predictors of OIBSQ customer satisfaction. The strongest relationships were between the web design and OIBSQ, preferential treatment and OIBSQ and information provision and OIBSQ in descending order with their respective Beta values.

Fourteen items on the basis of web design and information provisions were included in the instrument to diagnose if the relationship between OISQ and OIBSQ is positive.

If the value of R square (coefficient of determination) would tend to be closer to one that would mean that the OISQ dimensions are accountable for a considerable variance in OIBSQ. Additionally, the variance in OIBSQ is owing to the reasons not pertaining to the OISQ measures considered in the chosen regression model. The statistical results show that all the online information system dimensions were significant predictors of overall OIBSQ and the subsequent CS. There is a
strong bonding between OISQ, when the value of Beta is on a higher side (Above 0.5), and OIBSQ.

Anywhere above 5% level of significance there is a significant correlation between independent variables and dependent variable. Therefore OIBSQ level depends on OISQ dimensions. An ANOVA table depicting significant F values would confirm that the regression model and data prove the goodness of fit in explaining OISQ in internet banking. Based on the data found in the analysis of variance above, it can be argued that the independent variable OISQ has a significant impact on OIBSQ.

There are four items in the questionnaire that are qualitatively capable of digging out information regarding the closeness of the association between BSPQ and OIBSQ.

Regression analysis should be performed to check the OISQ dimensions on OIBSQ and, subsequently, its impact on CS. The value of R square ranges from 0 through 1 and indicates how far the dependent variable is elucidated by the independent variables. The more the value of R square tends to one the stronger the alliance among the dependent variable and the independent variables. Normality is not required at all times while performing regression analysis for analyzing variables. Nevertheless, better results may be expected from normally distributed data. Since multi co-linearity among independent variables weakens the regression model, when the association among them is strong, it should better not exist. A regression analysis for testing the strength of bond between the dependent variable i.e. OIBSQ and the independent variable BSPQ must be performed the results of which are forecasted as follows:

In an ANOVA Test which reflects 5% level of significance of the null hypothesis would mean there is a significant correlation between independent variables and dependent variable. Therefore OIBSQ quality level depends on BSPQ dimensions. The ANOVA table depicting significant F values confirms that the regression model and data prove the goodness of fit in explaining BSPQ in
internet banking. Based on the data in the analysis of variance above, it can be argued that the independent variable BSPQ has a significant impact on OIBSQ.

What needs to be noted is that the BSPQ has the strongest effect on OIBSQ as compared to that of OISQ and OCSQ. Although, OISQ is also nearly equally correlated to OIBSQ, the OCSQ needs to be improved further to raise the level of OIBSQ which is, subsequently, responsible for CS.

Finally, to ascertain a positive association between OIBSQ and CS, two and four items, respectively, were stressed upon in the instrument.

If the standard deviation does not differ significantly between OIBSQ and it would indicate a strong bonding between them. This confirms that there is a positive relationship between OIBSQ and CS.

The implication is that all the three variables collectively impact CS, but individually one of them significantly impact CS.

4.3.5 Questionnaire

Both the qualitative and quantitative data is collected from primary sources in order to impartially answer the research questions. Primary data is a puddle of statistical data base obtained by researchers for the precise purpose of addressing a research problem. It is what is originally collected by the researcher from the sample or target population. In the current study the primary data generated are those responses of Internet Banking customers approached via a questionnaire survey.

It is believed that while employing survey strategy, the main instruments used are questionnaires and self-administered or interviewer administered structured or unstructured interviews or a combination of both In addition, it is agreed upon that, the questionnaire can be employed for descriptive or explanatory study, and it must have a good layout, complete items, unambiguous questions, non-offensive but relevant items and the ability to bring out readiness to answer in
respondents. Therefore, self-administered interviews and structured questionnaire are used as tools to collect data from respondents. The rationale of the questionnaire is to contain insight into customers’ level of satisfaction with overall internet banking service quality and lastly to collect some data on respondents’ bio-data.

The self-administered questionnaire consists of mainly five dimensions with 10 items for internet banking service quality dimensions in accordance with the SERVEQUAL tool developed by Parasuraman et al. Individual was the unit of this study and SERVQUAL tool was adapted for the measurement of service quality and CS. A 5-point Likert scale with the range of 1 (strongly agree) to 5 (strongly disagree) was used for measurement purposes.

Overall, thirty eight items asked about the level of customer satisfaction by means of ten dimensions of overall internet banking service quality adapted from SERVQUAL tool developed by Parsuraman et al. Other than these items, nine items relate to respondent’s characteristics such as name age, city, e-Mail id, net banking user, contact number, gender, home town and state.

OCSQ Quality dimension was investigated using twelve items in the questionnaire which was supposed to be responsible for OIBSQ and a positive association between the two variables was observed.

Fourteen items on the basis of web design and information provisions were included in the instrument to diagnose if the relationship between OISQ Quality and OIBSQ is positive.

There are four items in the questionnaire that are qualitatively capable of digging out information regarding the closeness of the association between BSPQ and OIBSQ.

For the sake of concluding the questionnaire and to ascertain a positive association between OIBSQ and CS, two and four items, respectively, were stressed upon in the instrument. If the standard deviation does not differ
significantly between OIBSQ and CS, it would indicate a strong bonding between them. This confirms that there is a positive relationship between OIBSQ and CS.

### 4.4 Identification of Variables under Study

This chapter sketches out the research variables employed to respond to the research queries and scrutinize the hypotheses regarding measurement of quality of service leading to CS in the field of internet banking. The chapter also confers how the sample was derived, procedure of data formation, the tools for data analysis and the ethical considerations.

Generally researches are categorized in to three on the basis of the study purpose or the research problems and objectives. These categorizations are descriptive, exploratory and explanatory.

Despite of these standard categorizations, a particular research may contain more than one of these objectives. This study makes use of descriptive and exploratory nature of research from its questions, research problems and objectives.

While finding information about the present state of affairs so as to be able to describe “what exists”, descriptive research is used in relation to varying conditions in a situation. In addition to this, it offers the frequency of occurrence of an event and also supports determination of the central tendencies or average occurrence, statistically. A major demerit of descriptive research is that alone it does not help evaluating causal relationships. This is precisely where the exploratory research steps in to help set up the relationships among dependent and independent variables. This arrangement is required where there is not enough clarity as to what types of models should be used, how many of them should be used and in what relation they are required to be used.

Two basic approaches are adopted in research, qualitative and quantitative approaches. Qualitative approach, on one hand, depends upon relating an event with the use of words whereas the quantitative approach makes use of statistical
tools and numbers that are mostly presented in graphs or figures. A research approach selected should be according to the research questions in that exacting situation because each approach has merits as well as demerits and, also, how the data is collected and, subsequently analyzed. In addition to this, the degree of focus on either modern or historical event along with the type of questions structured should be the foremost basis of choosing a research approach. In conducting this research a comparison of both qualitative and quantitative approaches were made and the quantitative approach was adopted for the study.

4.4.1 Overall Internet Banking Service Quality

Quality of service has been adjudged as a critical success element for business entities to build their gung ho advantage and increase their competence.

Parasuraman et al. (1988) defined service quality as “The overall evaluation of a specific service firm that results from comparing that firm’s performance with the customer’s general expectations of how firms in that industry should perform”. However various researchers have given various definitions of service quality which vary from person to person but the real meaning of all the definitions is same. Revolutionary work by Parasuraman et al. (1985) augmented ten determinant (tangibles, responsiveness, competence, reliability; communication: access, courtesy, security, credibility and understanding the customer) of service quality as a consequence of their focus cluster studies with customers and service providers which afterward resulted in the development of the SERVQUAL tool with these ten elements distilled into five overall measures of service quality. These five measures of SERVQUAL are:

a. Tangibles
b. Responsiveness
c. Reliability
d. Assurance
e. Empathy
Table 4.2: Ten Dimensions of Service Quality

<table>
<thead>
<tr>
<th>Service Quality Dimension</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability</td>
<td>Requires consistent performance and dependability of the service.</td>
</tr>
<tr>
<td>Access</td>
<td>The service can be easily approached and contracted.</td>
</tr>
<tr>
<td>Credibility</td>
<td>Trustworthy, believable and having customer’s best interest at heart.</td>
</tr>
<tr>
<td>Security</td>
<td>It should not carry any kind of doubt, risk and danger.</td>
</tr>
<tr>
<td>Competence</td>
<td>To perform the service the service provider should possess necessary skill and knowledge.</td>
</tr>
<tr>
<td>Understanding/Knowing the Customer</td>
<td>Efforts should be made to understand the needs of customers.</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>Willingness or readiness of employees to provide service promptly and timely.</td>
</tr>
<tr>
<td>Courtesy</td>
<td>Politeness, friendliness and respect of contract personnel.</td>
</tr>
<tr>
<td>Communication</td>
<td>Providing information to the customers in the language they can understand.</td>
</tr>
<tr>
<td>Tangibles</td>
<td>Physical evidence of services.</td>
</tr>
</tbody>
</table>

Source: Quality online banking services (2006)

The main sources of discontent are reliability, availability, integrity, responsiveness and functionality. Further, it is also suggested that definite activities, such as increasing the speed of data processing and customer handling, are likely to have an enormous impact in terms of satisfying customers; however, other activities, such as improving upon the reliability of equipment, will decrease dissatisfaction and argues that it is more imperative to ensure that the dis-satisfiers
are dealt with earlier than the satisfiers. Therefore, in order to uphold and enlarge their customer base, it is vital for banks to comprehend the criteria customers use to assess internet banking services and, also, how these affect their insight towards the quality of overall internet banking services, and satisfaction level with e-service and banking on the whole.

It is possible to conceptualize Internet banking within the context of electronic banking. Though it has been variously defined, electronic banking is the transfer of bank’s information and services by banks to customers, and vice versa, via different delivery platforms that can be employed with different terminal devices such as mobile phones and personal computers, telephones or digital televisions and with browser or desktop software.

Therefore, Electronic banking could be categorized into PC banking, TV-based banking, Telephone-based banking and Internet banking. It is a platform that consists of numerous distribution channels. Internet banking is the phenomena wherein customers can access their bank accounts via the internet using a mobile phone and web-browser or a personal computer.

The dimensions for the OIBSQ are as follows:

- customer service,
- web design,
- preferential treatment,
- assurance and
- information provision.

This points the relationship between quality of service and satisfactions. In literature regarding consumer satisfaction and, contrarily, dissatisfaction, expectation and disconfirmation has been paid attention where disconfirmation shows the difference between pre purchase expectations and that of post purchase.
perceptions. There are two categories of disconfirmation: negative and positive disconfirmation. Negative disconfirmation arises when product performance is overestimated, consequently consumers are more prone to be dissatisfied, and positive disconfirmation appears when product performance is beyond expectations, thereby resulting in satisfaction. Especially, consumer satisfaction is the outcome of an analytical process that compares pre-purchase anticipation with the insight of performance during and after having availed the services. In spite of the cognitive processes, some of the researchers opine that affections and collective experience could result in consumer satisfaction.

In the environment of internet banking, there is a mounting body of research which has looked in to the impacts on CS. It has already been demonstrated that such web features as web site content and design, speed, interactivity, navigation and security all influence CS. While it is also observed that the level and nature of customer involvement had the utmost impact on the service quality, know-how and concerns such as customers’ precinct of tolerance, the grade of role understanding by consumers and emotional reaction potentially determined, perceived and expected service quality.

Similarly, a functional-quality oriented model did a better job of forecasting CS as compared to a SERVQUAL tool for those customers keenly involved or highly fascinated in service delivery. Research that explores the criterion used by the customers in evaluating i-banking service quality and their contentment with the bank overall seems to be still a relatively up-to-the-minute area.

Ease of use and efficacy are important factors in estimating online service quality. It has been figured out five quality measures that have significant impact on “end-user” contentment in an online working environment: accuracy, content, format, timeliness and ease of use. The validity and reliability of these measures were confirmed by a host of previous studies.

E-service quality includes all the points of the interaction of customers with a website. Parasuraman et al. (1988) analyzed the degree to which a website helps
in effective and efficient shopping, delivery and purchasing. Delivery of services online is highly recognized by the world. The reason for the increased importance of e-service quality is that the customers find it much easy to evaluate the various services online than evaluating through traditional channels. Although there is a high awareness of online services, but there remains the problem that how the quality of online services can be defined, what are the determinants of defining it and what is the method of measuring it. The e-service quality is an important issue to build up a valid scale. The development in e-commerce around the world makes it interesting to measure the quality of e-service as well as it creates interest in examination of dimensions of e-service. A number of studies have been executed that focus evaluation as well as measurement of online service quality.

E-banking has emerged as a new channel for the disbursement of financial services and has gained a high importance for the banking companies to sustain in the competitive market. E-banking services is helpful in making a varied number of transactions such as purchasing insurance, accepting payment from the customers, making payment to vendors and dealing in securities etc.

4.4.2 Customer satisfaction and service quality

The crux of marketing theory and practice lies in the two core concepts that are service quality and CS. The satisfaction decision is attained by customers after making a comparison of their expectations and product’s performance. If the performance of product or service is more than expectation a positive disconfirmation is the outcome which helps increasing the satisfaction. Contrary to it if the performance is less than expected a negative disconfirmation takes place which results in decreasing satisfaction.

The quality of a website is an important concept in the field of ecommerce since the customer’s perception of quality of website directly derives his purchase intentions. This way, while assessing a company’s website offerings, understanding which factors the user considers most vital has become a priority for corporations to employ an efficient and workable e-strategy. i.e., from the
services-marketing point of view, to attract and retain clients, online travelling agencies need to have a clear picture of what its customers expect not its customer’s in terms of quality that a website shall offer. This free faceted website quality could be the basic factor to evaluate the user’s perceptions and expectations of website quality.

Various structural reforms in the real sector began in 1991-1992 and resulted in a number of financial sector reforms in India. To create more competition in banking it was proposed to liberalize the entry norms along with a liberal policy of allowing foreign banks as well as private banks to establish and operate offices in India. After the implementation of recommendations a number of foreign and private and foreign banks have started their operations and a number of banks are waiting in queue seeking permission from the Reserve bank of India. Structure of rate of Interest has been deregulated and a greater degree of freedom has been given to banks to determine interest rates for deposits and advances and for other range of their products. Post liberalization the banking has become highly competitive in context to the pricing of its products, variety of products offered to customers and the branch network. As a result the market power of the banks is shifting to its customers. In this competitive scenario the service quality has emerged as a differentiating key factor for the banks that are trying to increase their profits and improve their market. Studies have proved that there is a positive service quality and profitability relationship. Although, there is no direct link between service quality and profits so it is important to understand this intricate relationship between service quality and profits. It is necessary to understand the intermediate link between the two. This important intermediate link between profits and service quality is the association among the behavioral intentions of the customers and service quality. A study of behavioral intentions of customers, by the managers can be helpful for managers in assessing the financial consequences of making investments in service quality. Therefore, it is important for everyone to first scrutinize and understand that how the service quality influences the behavioral responses. The hazing of identity between insurance
companies, banks and other competitors that are expected to enter the market will speed up and as a result there will be pressure on profitability of the banks. In this fast changing environment service quality is gripping the attention of banks and the retail banks are determined for increasing CS by improving the quality of service. It is so because of the well-known fact that high service quality pushes the word of mouth communication by the current customers, increases the morale of workers, increases the perception value of customers and brings credibility to sales and advertising.

Considering the practical value of research on the link between quality of service and purchasing intentions of the customers, the purpose of this study is to understand the dimensionality of customer-perceived quality of service and examine the influence of service quality on customers’ purchase intentions in the Indian retail banking context.

4.6 Data Analysis

The data collected is in person with the help of a questionnaire (as a schedule) and the same online in real time, so as to comply with the nature of a cross-sectional study. As respondents submitted their completed questionnaires, the data was automatically exported into a predefined and encrypted database. Each of the questions was coded in the interface (Web form) and matched with the field names in the database. This, in turn, made analysis to be possible much quicker and precise. Statistical Package for Social Sciences (SPSS) version 16 is used to process the data and yield analytical results.

Important statistics provided by SPSS are Regression, Correlation, Analysis of Variance (ANOVA), Descriptive statistics, Coefficients that are useful to examine the relationships among various dependent and independent variables.

In the case where the value of R square (coefficient of determination) would tend to be closer to one that would mean that the OISQ dimensions are accountable for a considerable variance in OIBSQ. Moreover, the variance in OIBSQ is owing to
the reasons not relating to the OISQ measures considered in the chosen regression model. The statistical results show that all the online information system dimensions were significant predictors of OIBSQ CS. There is a strong bonding between OISQ and OIBSQ, when the value of Beta lies anywhere above 0.5.

The proposition is that all the three variables collectively impact CS, but individually one of them significantly impact CS. A more detailed data analysis is presented in the forthcoming chapter.

4.7 Statistical tools

SPSS comprises of an integrated series of computer software which enables the user to interpret data from questionnaire surveys and other sources such as administrative records to maneuver them in various techniques and to generate wide-ranging statistical analyses and their outcomes, together with meaningful documentation.

Important statistics provided by SPSS are Regression, Correlation, Analysis of Variance (ANNOVA), Descriptive statistics, Coefficients that are useful to examine the relationships among various dependent and independent variables.

The original version of Statistical Package for the Social Sciences, more popularly known as SPSS, was written in the late 1960’s by two post-graduates of political sciences who despaired of having to use the programming language Fortran for processing, manipulating and subsequently analyzing data collected vide questionnaire surveys. They sought a programmer to help them produce something to help users mark commands that appeared more or less plausible social science language in English, and for the first time gave social scientists the power over their own cited research. Needless to say, SPSS spread like wild-fire: political scientists and sociologists loved it; statisticians and computer programmers hated it.
SPSS was first introduced in the USA in the year 1968 and, on the recommendations of Tony Coxon. It was later installed in the United Kingdom in 1970 at Edinburgh University (the only one with an IBM computer) by David Muxworthy and Marjorie Barritt. It was an integrated set of software programs for the management and statistical analysis of data pertaining to social science, developed mainly for the processing and analyzing data from questionnaire surveys.

It spread quickly throughout the social (survey) research community because of its straightforward English-like command language and impressive user manual. It was so successful that, to protect the charitable status of the University of Chicago, SPSS, Inc. was set up as an individual entity. It swiftly became the world standard for social science computing and turned into business rather than applications of social research and developed a graphic user interface (GUI) based on drop-down menus rather than syntax.