The economic development of any country depends on several sectors of economy including efficient & effective modern banking system. The banking transactions play an integral role in facilitating economic activities across the globe. The banking sector in India has changed significantly in last ten years. The way of conducting banking transactions has shifted from traditional banking services to Technology-Based Banking Services. The Technology-Based Banking Services are the usage of Automatic Teller Machines (ATMs), Internet Banking, Mobile Banking, Telephone Banking; SMS Banking, Missed Call Banking and making payment online or offline using Debit/Credit Card at point of sale. To facilitate these services, the service quality should be in tune with customer’s expectations and must be financially viable to bank leaders.

The researches have showed that favorable ‘customer service quality perception’ leads to ‘customer satisfaction’ among customers towards the services offered by banks and customer satisfaction positively correlate with profitability of banks. The customer satisfaction generates positive behavioral intentions among customers that indicate whether the customer will continue with current bank’s services or not. Eventually, the loyalty among the customers can be predicted by measuring the behavioral intentions of the customers. The technology based-banking services are adapted to facilitate the customers in conducting banking transactions in fast and effective way. That is why, the service quality pertaining to TBBS prevailing in India should be evaluated in terms of customer’s perception towards these services. Therefore, present study titled, “Customer service quality perception of Technology Based Banking Services” is an empirical study aims to study service quality perception, customer satisfaction and behavioral intentions of Indian banking customers regarding services like ATMs, Internet or net banking, mobile banking and making payment online or offline using Debit/Credit Cards at point of sales (collectively called as technology based banking services).
3.1 Research Objectives

1. To analyze and compare the customers service quality perceptions of Technology-based banking services provided by selected banks in India.

2. To know which commercial bank has highest level of customer satisfaction for technology based-banking services.

3. To determine if a set of technology-based banking service quality (TBBSQUAL) dimensions have relation with customer satisfaction (CSAT).

4. To determine if a set of technology-based banking service quality (TBBSQUAL) dimensions have relation with customer behavioral intentions (CBI).

5. To determine if a set of technology-based banking service quality (TBBSQUAL) dimensions & customer satisfaction (CSAT) together have relation with customer behavioral intentions (CBI).

3.2 Research Hypotheses

H₀₁: There is no significant difference among customers service quality perceptions of technology based banking services provided by selected banks in India.

H₀₂: There is no significant difference among level of customer satisfaction of technology based banking services provided by selected banks in India.

H₀₃: There is no significant relation between technology-based banking service quality dimensions and customer satisfaction.

H₀₄: There is no significant relation between technology-based banking service quality dimensions and customer behavioral intentions.
**H₀**: There is no significant relation between customer behavioral intentions and technology-based banking service quality dimensions together with customer satisfaction.

### 3.3 Research Design

“A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure” (Claire selltiz et al. 1962). Research design is the framework or blueprint for conducting the marketing research project. It specifies the details of the procedures necessary for obtaining the information needed to structure and/or solve marketing research problems. The purpose of the present study is to assess the level of customer satisfaction and behavioral intentions with their association with technology based banking service quality dimensions. This is a descriptive empirical study. The data collection instrument is a structured questionnaire as proposed by Lin and Hsieh (2006). Lin and Hsieh (2006) provided SSTQUAL scale and a survey instrument to examine service quality within technology based services (TBS). It indicated that functionality, enjoyment, security, assurance, design, convenience, and customization constitute service quality dimensions within self-service technologies (SSTQUAL) associated with CSAT and CBI.

**Industry Selected for Study**

The industry selected for the study is Indian banking industry which comprises public, private, foreign banks and other financial institutions.

**Banks Selected for Study**

The current study has included fifteen banks from public, private and foreign banks operating in India for the purpose of the study. Top five banks on the basis of ‘highest total of branches & ATMs’ from each sector i.e. public sector, private sector and foreign banks were selected for the study (Annexure-Y). The selected banks are listed below.
1. State Bank of India
3. Union Bank of India
5. Bank of Baroda
6. HDFC Bank
7. ICICI Bank
8. Axis Bank
9. Federal Bank
10. Karur Vysya Bank
11. Citi Bank
12. Standard Chartered Bank
13. HSBC
14. Royal Bank of Scotland
15. Deutshe Bank Asia

Population and Scope of the Study

The present study has surveyed the customers of Indian banking industry. The population for the study constitutes all the TBBS users from selected commercial banks residing in national capital region (NCR) Delhi. The customer perception and satisfaction has been measured with respect to the service quality of TBBS provided by the selected banks.

Sample Size and Survey Instrument

A sample of 750 banking customers; 50 customers from each bank were selected for the purpose of the study. The Convenience Sampling method was used to recruit customers as respondents in the survey. The data was obtained from those customers who met the following two basic conditions:

(i) The customer should have a Debit/Credit Card
(ii) The customer should have used any of TBBS within past 30 days.

Secondary data has been sourced from various publications, journals, reports, online resources and books. The primary data for the study has been accessed by surveying customers of selected banks with the help of structured questionnaire (Annexure-Z) on seven points Likert Scale (from 1=Strongly Disagree to
7=Strongly Agree) containing 26 items based on SSTQUAL scale (known as TBBSQUAL in context of banking) as suggested by Lin and Hseih (2006). Lin and Hsieh (2006) proposed perceived service quality of self-service technologies and suggested seven dimensions to form SSTQUAL scale. The suggested dimensions are:

- Functionality
- Enjoyment
- Security
- Assurance
- Design
- Convenience
- Customization.

These seven dimensions proposed by Lin and Hsieh (2006) were having literature support and proved significantly related with customer satisfaction and behavioral intentions with in technology based services. The main purpose of the current study is to know whether a set of TBBSQUAL dimensions have any relationship with customer satisfaction and/or customer behavioral intentions in the context of India. The various items of the said construct are elaborated below:

(All items were assessed on seven points Likert Scale, from 1=Strongly Disagree to 7=Strongly Agree)

**Dimension 1 Functionality**

1. Service is done with the bank’s TBBS in a short time.
2. The service process of the bank’s TBBS is clear.
3. Using the bank’s TBBS requires little effort.
4. Service is done smoothly with the bank’s TBBS.
5. Each service item/function of the TBBS is error-free.

**Dimension 2 Enjoyment**

1. The operation of the bank’s TBBS is interesting.
2. I feel good being able to use the TBBS.
3. The bank’s TBBS have interesting additional functions.
4. The bank’s TBBS provide me with all relevant information.

**Dimension 3. Security**
1. I feel Safe in my transactions with the bank’s TBBS.
2. A clear privacy policy is stated when customers use the bank’s TBBS.

**Dimension 4 Assurance**
1. The bank providing the TBBS is well-known.
2. The bank providing the TBBS has a good reputation.

**Dimension 5 Design**
1. The layout of the bank’s TBBS is aesthetically appealing.
2. The bank’s TBBS appears to use up-to-date technology.

**Dimension 6 Convenience**
1. The TBBS has operating hours convenient to customers.
2. It is easy and convenient to reach the bank’s TBBS.

**Dimension 7. Customisation**
1. The bank’s TBBS understand my specific needs.
2. The bank’s TBBS have my best interests at heart.
3. The bank’s TBBS have features that are personalized for me.

**Assessment of the Customer satisfaction (CSAT) of TBBS**
While measuring the overall customer satisfaction, the current study uses three Items taken from American Customer Satisfaction Index. These items were also used by Lin and Hsieh (2006) and Alkibsi and Lind (2011). The items are given below here:

1. Overall, I am satisfied with the TBBS offered by the bank.
2. The TBBS offered by the bank exceed my expectations.
3. The TBBS offered by the bank are close to my ideal TBBS.
(All items were assessed on seven points Likert Scale, from 1=Strongly Disagree to 7=Strongly Agree)
Assessment of the Customer Behavioral Intentions (CBI) of TBBS

While measuring the customer’s future behavioral intentions, the current study uses the three items given by Cronin, Brady and Hult (2000) and similar to five dimensions given by Zeithaml, Berry and Parasuraman (1996). These items were also used by Lin and Hsieh (2006) and Alkibi and Lind (2011). The three items are given below.

1. The probability that I will use the TBBS offered by the bank is.
2. The likelihood that I would recommend the TBBS offered by the bank to a friend.
3. If I had to do it over again, I would still use the TBBS offered by the banks.
   (All items were assessed on seven points Likert Scale, from 1=Strongly Disagree to 7=Strongly Agree)

3.4 Analytical Techniques

The present study used the adapted version of SSTQUAL for measuring the customer perception of the technology based banking services and to achieve other objectives of the study. The scale contains total 32 questions to know the demographics of the samples and measuring customer satisfaction, behavioral intentions and customer service quality perception towards TBBS in India. The data so collected in the questionnaires was recorded in MS office 2007 excel sheet formats according to banks. The collected data was tabulated, classified and organized using relevant statistical methods and techniques. The descriptive and inferential statistical tools were used to analyze the collected data. The major research techniques used in the study are Arithmetic Mean, Standard Deviation, Correlation Analysis, Multiple Regression Analysis, Scale Reliability Test (Cronbach Alpha), F-Test (ANOVA).

3.5 Significance of the Study

The current research study provided an original contribution to measure perceived service quality of TBBS provided by Indian banking Industry. The current study included an assessment model that might help bankers and researchers to investigate customer perception and satisfaction of TBBS in Indian context. The current study confirmed a TBBSQUAL model to help bankers in India to monitor and assess TBBS. The research findings from the study made it feasible for
commercial banks operating in India to be able to identify shortfalls in service quality and to allocate resources to prevent & improve customer perceptions toward TBBS.

3.6 Organisation of the Study: Chapter Plan

The present study contains following five chapters

Chapter 1 is the introductory chapter to the study. The chapter includes brief view of Indian banking industry, Reserve Bank of India, products of banking industry and service quality. This chapter also includes banking penetration in India and a brief introduction of the selected banks included in the study.

Chapter 2 contains review of literature related to the different aspects of the study like service quality, customer satisfaction and behavioral intentions. The chapter includes major findings of the different studies conducted on service quality, customer satisfaction and behavioral intentions.

Chapter 3 has presented the research problem and how the survey conducted. After throwing light on the problem, objectives and hypotheses of the research, the chapter has commented on methodology adopted, scope and organisation of the study. Towards the end, significance and limitations of the study have been discussed in the chapter.

Chapter 4 comprises of analysis and interpretation of the data collected through the primary sources in the customer survey using various statistical tools and techniques.

Chapter 5 consists of summary of major findings and outcomes of the present study. The findings comprise of major dimensions of TBBS that are highly important in the context of service quality perception. Further, the study gives some suggestions, where there is a scope of improvement in the services like TBBS.