CHAPTER II
REVIEW OF LITERATURE

In the past decade, the Indian banking industry has been driven by intricate changes as technology advancement and liberalization compelled banks to concentrate on the innovative distribution channels. The banks have adapted technology in conducting banking transactions to serve customers in a better way. The banks have employed technology in service delivery process to enhance service quality. The technology has not only increased the service quality of banking transactions but also reduced cost significantly. Due to technology advancement, the banks have standardized their core service offerings. The customer’s participation in service delivery process has transformed the core offerings of the banks as far as service delivery is concerned.

After intensively reviewing the literature, it is found that there exist several studies in quest of service quality and its dimensions in traditional service delivery process, where customer and employee interaction is the most important communication channel. However, there exist limited studies that have worked on finding and assessing the attributes of perceived service quality of technology based banking services with in self service technologies offered by banks operating in India.

This review of literature consists of four basic concepts. These concepts are Service, Perceived Service Quality, Customer Satisfaction (CSAT) and Customer’s Behavioral Intentions (CBI). The ‘service’ concept covers the emergence and evolution of services and recent developments in service marketing. The service quality is discussed in view of customer’s perception of services i.e. perceived service quality, its conceptual framework and latest developments to suit the nature of technology based services with in self service technologies. Customer satisfaction includes customer’s personal and social needs to interact during service process and its recent developments in the context of enhanced service process via customization and 24x7 service alternatives. The customer behavioral intentions are discussed to understand how a customer
behaves in service delivery process and what compels him to come for repeat purchase i.e. understanding customer patronage behavior.

2.1 Service Concept and Overview of Service Marketing

In 1970’s the service concept emerged as a new concept that was different from the product concept. Many researchers gave their valuable contribution in elaborating the service concept and tried to figure out its core attributes that differentiate services from those of products. This section covers the service marketing overview with the help of researches conducted over the time.

Gronroos (1978) explained the attributes of the service like intangibility, inseparability, variability and perishability. He emphasized that service must be produced and consumed simultaneously and it cannot be separated. The service cannot be stored or collected and cannot be tasted, seen, heard and smelled. These service traits completely differentiate it from the characteristics of the product. Consequently, their marketing needed to be different from that of marketing of products as well as the 4P’s of the product marketing.

Booms and Bitner (1981) explained the concept of service and its marketing by criticizing the 4P’s of product marketing. They gave three extra P’s in addition to earlier four P’s of marketing in the context of marketing of services. The additional 3P’s were physical evidence of the customer, his participation and the process of services. These 3P’s were proved to be remarkable concepts in the field of service marketing. The Booms and Bitner emphasized these additional 3Ps’ to service organizations in achieving great performance. While adding a new milestone in the area of marketing, Berry (1981) gave the concept of internal marketing and focused on employee’s integrated role in the process of service delivery.

Gronroos (1984) differentiated the services and products on the basis of consumption. He considered service as ‘process consumption’ and product as ‘outcome consumption’ occurred during customer-marketer interaction or production & consumption interaction. Kotler (1994) explained the interactive
marketing concept. He discussed the interaction among customer, employee & company leader and gave the Triangle Model to market services. Kotler considered three different types of relationship among these three entities i.e. customer, employee and company. The relationship between company and customer was termed as external marketing and this relationship can be taken care by earlier marketing mix i.e. 4P’s of marketing. Company must devise its external marketing activities like branding, pricing, promotions and distribution so that the customer feel delight.

The relationship between company and employee was known as internal marketing as given by Berry (1981). The company must take care of its employees and align their motivation in serving its customers as per the external marketing commitments. The third relationship was between the customer and employees and was known as interactive marketing. If customer is considered as the king in service delivery process than the second most important person is the employee of service organization, who is serving the king.
The service delivery process was completely transformed by the use of technology adaptation by companies and technologies were also changed alongside with change in innovation in technologies (Meuter et al., 2000). While studying technology in service delivery process, Parasuraman in 2000 gave Pyramid Model of service marketing as an extension of triangle model by Kotler in 1994.

Parasuraman (2000) explained the three key benefits of adoption of technology to business leaders. The benefits are listed below:

1. The business leaders can use technology in developing new products, communicating more efficiently and analyzing the customer’s behaviors.
2. The business leaders now can use technology to interact with their employees with the help of internet, irrespective of their physical locations or time and keep records of customers in databases.
3. The technology facilitates employees and customer’s interactions with the help of technology based interfaces like electronic services.
Service Quality

With the evolution in the service and its marketing concept, it became inevitable to know about service quality. The service quality has vast and comprehensively researched literature by eminent research scholars and academicians.

The service quality took germination from the Vroom’s Expectancy Theory proposed in 1964. The theory discussed about how human feels motivated to accomplish any task. This accomplishment involves three factors. One is the perception of ability to perform the task, the second is perception of the task meets its results and the last one is the perception of whether the results are acceptable or desirable. This theory was popularly known as expectancy theory. As per theory a customer feel motivated to use technology based banking services only when he perceives them performing well as per expectations. Further, customer does not feel motivated to use technology based services when the services do not perceived work properly.

Giving a new horizon to service quality literature, Oliver (1980) gave Expectation-Disconfirmation Theory. The theory established the basis for service quality. According to it, customer perceives service quality as high when service meets his expectations and vice-versa. Further, when service performance equates or exceeds the customer’s expectations then customer perceives service quality as high. This can be translating into that any service perception can be shaped by performance of the service in relation to expectations of the customers. So, if customer has very high expectations, it simply means that the service performance needs to be equal high in order to provide better service quality. In another term, customer’s expectations can be controlled by external marketing activities of the companies to bridge the gap between expectations and perceptions.

Gronroos (1984) discussed another service quality model for appropriate Production-Consumption Interaction in service delivery process. This model described the total service quality as a function of technical and functional quality. This is shaped by company’s corporate image. As per the Gronroos,
customer judges the corporate image of company while evaluating the whole service. The corporate image in service was termed as its tangible component. The image gives clues to customer regarding the performance of a service whether to fail or succeed. Gronroos highlighted that the technicality of a service should be acceptable and expected to perform its primary purpose. For instance, if customer is using electronic fund transfer service, then in this case, the money should be credited to beneficiary account properly. This means that the service functionality should be correct.

In 1984, Gronroos asserted that the business leaders required focusing on service quality in order to be sustained in competition. He emphasized on managing promises committed to customers to match the perception and expectations of the customers and to understand the technical and functional quality of the service. The models given so far tried to conceptualize the service quality and its perceptions. In defining the service quality Parasuraman et al. (1988) described that service quality is a construct and has three features in the context of service. They were heterogeneity, intangibility and inseparability. They further explained service quality as judgment or attitude of customer.

On the basis of expectations and perceptions of the services the gap model was developed by Parasuraman et al (1985). They listed mainly five gaps while delivering the service to the customers, four from company’s side and one from customer’s side. The five gaps consisted of the followings:

1. Consumer expectations & management perception gap. This represents the lack of information about customer’s expectations.
2. Management perception & service quality specification gap. This gap means shortcomings in service quality standards as per the customers’ expectations.
4. Service delivery–external communication gap and represent company’s not fulfillment of promises committed to customers.
5. Expected service & perceived service gap and represents gap between consumer’s expectations and perceptions of service delivery process.

Parasuraman et al. (1985)

The gap model conceptualized the service quality and laid down the foundation for future researches in the context of service quality. To operationalise the gap model and measuring service quality SERVQUAL scale was developed Parasuraman et al. (1988). The scale was multidimensional scale used in conceptualising and operationalising the service quality based on gap model as well as on expectation & disconfirmation theory. The Parasuraman et al. put forth their efforts to develop the scale in quantifying the customer’s perception of the whole service quality. It was used worldwide to evaluate service quality. The
SERVQUAL scale consists of twenty two items contained in a survey instrument and includes five primary dimensions. The dimensions are tangibility, reliability, responsiveness, assurance, empathy. The Parasuraman et al. used 7-point Likert Scale in order to measure customer perceptions and customer expectations. The gap score was counted based on the difference between customer expectations and perceptions score.

Parasuraman et al. (1988) recommended that business leader should focus on minimizing the gap between expectations and perceptions in order to maintain service quality and customer satisfaction. Further, if the gap between expectations and perception is low consequently the service quality would be high and vice versa. Some researchers used the SERVQUAL scale to operationalize the service quality while some criticized its nature to measure expectations and perceptions with two gap scores counted.

Cronin and Taylor (1992) developed service performance scale SERVPERF and tried to outperform the SERQUAL scale. The SERPERF scale asked questions pertaining to service quality dimensions only once as compared to SERVQUAL which questioned twice from the respondents. They developed the weighted score in measuring the importance of dimensions in SERVPERF scale to become compatible in different industries. This is due to customer weights different dimensions differently. Customer might weight tangibility high in apparels industry but weight less in online shopping where tangibility might not be seen. This shifted researches in direction of exploring the different dimensions of service quality. The customization dimension suggested by Fornell, Johnson, Anderson, Jaesung and Bryant (1996) and security dimension was Carman (1990). The other dimensions like convenience, security and design was discussed by Szymanski and Hise (2000) and emphasized these dimensions as primary factors of service quality in attaining customer satisfaction of services like technology based services.
2.2 Technology Based Services (TBS) in Banking

The service quality became a crucial concept and its dimensions were researched for different type of service organizations. Some dimensions were shared in some industries and there evolved new dimensions to suit the nature of the service or for different service settings. Dabholkar (1996) posited that customer may perceive the usage of technology as medium of service quality. Arend (1992) found the usage of technology in achieving operational efficiency with enhanced ‘convenience’ and ‘functionality’. Further, he supported that technology plays crucial role in ‘responsiveness’ and ‘reliability’ of service.

Zeithaml and Gilly (1987) opined other factors for service quality within technology based banking services as ‘safety’, ‘accessibility’ and ‘convenience’ in predicting customer’s acceptance to use services. The dimensions like responsiveness, assurance and reliability were clubbed to measure service quality in technology based banking services (TBBS) while using SERVQUAL scale (Zhu et al., 2002; Gefen, 2002). Many researchers have supported the importance for better understanding of technology in service quality (Dabholkar et al., 1994; Brown, Fisk & Bitner, 1994 and Meuter et al., 2000).

While measuring the service quality with in technology based services three topics are having their crucial roles. Firstly, customer perception depends on customer’s attitude and unique traits towards technology. Parasuraman (2000) classified customers in two categories, one is technology oriented and other is technology challenged. As the customer has different types, their perception would also be different and the measurement of their perception of service quality should be different. The technology oriented customers are more open to access the technology based services and their perception will be positive towards service quality of these services. While on other side, the technology challenged people are reluctant to use technology and will not be having positive perceptions towards service quality. So it needs to check whether the customers are ready to adopt use of technology based service or not prior to measuring their perceptions.
of service quality (Parasuraman 2000). He postulated ‘Technology Readiness Construct’ for the said purpose.

Second, the interaction between customer and technology effects customer’s perception. The service quality of technology based services depend on the complexity of the interaction between customer and TBS. Customer desires to adopt technology based services of any service provider on the basis of perceived superiority, mastery over the TBS and Competence (Lee & Allaway, 2002) of the service provider. On the basis of experimental research Lee & Allaway (2002) discussed that customer would perceive lower risk and increased value when he has more personal control while using technology based services. The sense of lower risk and greater control induce more intent to adopt technology. While if customer perceive technology based services as complicated, outreach of his control and unpredictable than customer would perceive service quality as low. So perception of complexity or easiness plays greater role in shaping customer perception towards service quality in TBS.

Thirdly, customer expects particular service quality dimensions for technology based services. As per the level of customer-technology interaction the technology based service has its different dimensions. If the level of interaction between customer and technology is changing, the customer’s perception of service delivery will change accordingly. Customer perception of high level interaction should not be compared with low level interactions. A per Theotokis, Vlachos and Pramatari (2008) customer perception of service delivery depends on the customer-technology contact.

So it can be concluded that there should be different service quality dimensions for different technology based services (TBS).

**Service Quality Dimensions within TBS**

Many researchers conducted various studies to investigate the different service quality dimensions to predict and measure service quality with in TBS. Dabholkar (1996) posited the dimensions of service quality as speed of delivery, ease of use,
control, reliability and enjoyment with in TBS. Madu and Madu (2002) posited 15 dimensions of e-quality for virtual operations as performance, aesthetics, reliability, features, structure, assurance, empathy, storage capability, serviceability, security & systems integrity, trust, responsiveness, product/service differentiation, customer and web store policies and reputation. Zhu et al. (2002) described service quality model for IT-based services. These dimensions were in a link to SERVQUAL scale.

Santos (2003) gave two dimensions of service quality for e-commerce as incubative and active. Every dimension consists of other sub-dimensions to explain the construct of service quality. Al-Hawari, Hartley and Ward (2005) proposed five main dimensions for service quality of automated service. These services included: telephone banking service, ATM service, internet banking service, and core service and price perceptions. The emergence of technology as an alternative delivery channel created need of new ways to define the service quality of TBS keeping in view the characteristics of electronic service channel. Rod, Ashill, Shao and Carruthers (2009) studied the overall internet banking service quality using three dimensions of online customer service quality, banking service product quality and online information system quality and their relationship with the customer satisfaction in the context of New Zealand banking industry.

Sangeetha (2012) conceptualized the technology interface service quality model. The model is popularly known as TISQ model. In this model researcher suggested seven factors as ATM service, Telephone banking service, Internet banking service, Call center service, queue systems, customer’s perception of price and Core service to form the construct of customer’s perceived technology interface service quality for banking services. The first five factors are the main factors while rests of two factors are additional determinants to form the said construct. Based on seven factors 29 items were formulated to measure the service quality. Though the model seemed to perform well but its usage couldn’t get expansion. Baksi (2013) gave the summarized reviews of technology based service quality dimensions (Table-2.1)
<table>
<thead>
<tr>
<th>SR No.</th>
<th>Contributor</th>
<th>Year</th>
<th>Service quality dimensions</th>
<th>Context</th>
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<tbody>
<tr>
<td>1</td>
<td>Dabholkar</td>
<td>1996</td>
<td>website design, reliability, delivery, ease-of-use, enjoyment and control</td>
<td>e-services</td>
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<td>2</td>
<td>Zeithaml et al.</td>
<td>2001</td>
<td>ease of use, aesthetic design, processing speed and interactive responsiveness</td>
<td>Online retail services</td>
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<td>3</td>
<td>Yoo &amp; Donthu</td>
<td>2001</td>
<td>ease of use, aesthetic design, processing speed and interactive responsiveness</td>
<td>Online retail services</td>
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<td>4</td>
<td>Cox &amp; Dale</td>
<td>2001</td>
<td>website appearance, communication, accessibility, credibility, understanding and</td>
<td>Online retail services</td>
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<tr>
<td>5</td>
<td>Jun &amp; Cai</td>
<td>2001</td>
<td>website design, information, ease of use, access, courtesy, responsiveness and reliability</td>
<td>Online banking services</td>
</tr>
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<td>6</td>
<td>Yang</td>
<td>2001</td>
<td>website design, security and information</td>
<td>Online retail services</td>
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<td>7</td>
<td>Wolfinbarger &amp; Gilly</td>
<td>2002</td>
<td>website design, reliability, security and customer service</td>
<td>Online shopping sites</td>
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<td>8</td>
<td>Zeithaml et al.</td>
<td>2002</td>
<td>Security, communication, reliability, responsiveness and delivery</td>
<td>e-services</td>
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<td>9</td>
<td>Madu &amp; Madu</td>
<td>2002</td>
<td>Performance, features, structure, aesthetics, reliability, serviceability, security and system integrity, trust, responsiveness, service differentiation and customization, web-store police, reputation, assurance and empathy</td>
<td>e-services</td>
</tr>
<tr>
<td>10</td>
<td>Loiacono et al.</td>
<td>2002</td>
<td>informational-fit-to-task, interaction, trust, response-time, design, intuitiveness, visual</td>
<td>Online retail services</td>
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<tr>
<td>11</td>
<td>Yang &amp; Jun</td>
<td>2002</td>
<td>Website design, security, reliability, responsiveness, accessibility and customization</td>
<td>Online retail services</td>
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<tr>
<td>12</td>
<td>Yang et al.</td>
<td>2003</td>
<td>responsiveness, reliability, credibility, ease-of-use, convenience, communication, access, competence, courtesy, personalization, collaboration, security and aesthetics</td>
<td>Online retail services</td>
</tr>
<tr>
<td>13</td>
<td>Yang et al.</td>
<td>2004</td>
<td>responsiveness, reliability, ease-of-use, competence, security and product portfolio</td>
<td>Online shopping sites</td>
</tr>
<tr>
<td>14</td>
<td>Field et al.</td>
<td>2004</td>
<td>Website design, reliability, security and customer service</td>
<td>e-services</td>
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<tr>
<td>15</td>
<td>Kim &amp; Stoel</td>
<td>2004</td>
<td>Web appearance, entertainment, information, transaction capability, responsiveness and trust</td>
<td>Online retail services</td>
</tr>
</tbody>
</table>
Presently, the use of technology cannot be separated from the banking transactions because the usage of technology has made the banks leaders to achieve effectiveness and efficiency while meeting the burgeoning demands of the customers. The technology has made the banking transactions entirely different as compared to traditional banking transactions. Now the technology has changed ‘customer-employee interaction’ to ‘customer-technology interaction’ in banking due to emergence of self-service technologies (SST). The SST includes online transactions using net banking or internet banking, mobile banking, phone

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<tr>
<td>16</td>
<td>Yang &amp; Fang</td>
<td>2004</td>
<td>Responsiveness, reliability, credibility, competence, access, courtesy, communication, information, responsiveness and website design</td>
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<td>17</td>
<td>Gounaris et al.</td>
<td>2005</td>
<td>Website design, information, trust, responsiveness and reputation</td>
<td>Online retail services</td>
</tr>
<tr>
<td>18</td>
<td>Parasuraman et al.</td>
<td>2005</td>
<td>Efficiency, availability, fulfillment, privacy, responsiveness, compensation and contact</td>
<td>e-services</td>
</tr>
<tr>
<td>19</td>
<td>Lee &amp; Lin</td>
<td>2005</td>
<td>Website design, reliability, responsiveness, trust and personalization</td>
<td>Online retail services</td>
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<tr>
<td>20</td>
<td>Kim et al.</td>
<td>2006</td>
<td>Efficiency, system availability, fulfillment, privacy, responsiveness, compensation, contact and graphic style</td>
<td>e-services</td>
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<td>21</td>
<td>Fassnacht &amp; Koese</td>
<td>2006</td>
<td>Graphic quality, layout, attractiveness of selection, information, ease of use, technical quality</td>
<td>e-services</td>
</tr>
<tr>
<td>22</td>
<td>Lin and Hsieh</td>
<td>2006</td>
<td>Functionality, enjoyment, security, assurance, design, convenience, customization.</td>
<td>Technology based services</td>
</tr>
<tr>
<td>23</td>
<td>Cristobal et al</td>
<td>2007</td>
<td>Website design, customer service, assurance and order management</td>
<td>e-services</td>
</tr>
<tr>
<td>24</td>
<td>Sohn &amp; Tadisina</td>
<td>2008</td>
<td>Trust, speed of delivery, reliability, ease-of-use, customized communication, website content and functionality</td>
<td>Online financial services</td>
</tr>
<tr>
<td>25</td>
<td>Li et al.</td>
<td>2009</td>
<td>Website design, reliability, responsiveness, security, fulfillment, personalization, information and empathy</td>
<td>e-services</td>
</tr>
<tr>
<td>26</td>
<td>Lin and Hsieh</td>
<td>2011</td>
<td>Functionality, enjoyment, security, assurance, design, convenience, customization.</td>
<td>Internet based services</td>
</tr>
<tr>
<td>27</td>
<td>Jaya Sangeetha</td>
<td>2012</td>
<td>ATM service, Telephone banking service, Internet banking service, Call center service, Queue systems, customer perception of price and Core service</td>
<td>Banking services</td>
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</table>

**Self-Service Technologies and SSTQUAL Scale**

Presently, the use of technology cannot be separated from the banking transactions because the usage of technology has made the banks leaders to achieve effectiveness and efficiency while meetings the burgeoning demands of the customers. The technology has made the banking transactions entirely different as compared to traditional banking transactions. Now the technology has changed ‘customer-employee interaction’ to ‘customer-technology interaction’ in banking due to emergence of self-service technologies (SST). The SST includes online transactions using net banking or internet banking, mobile banking, phone
banking, SMS banking, wide usage of ATMs and making payments with the help of Debit/Credit Card at point of sales online as well as offline.

The introduction of these services not only reduced the queue system in the banks but also significantly increased the income, profit and market shares of the banks. The usage of these services has been increased rapidly (Parasuraman, 2000). Devlin (1995) researched and found that the banking sector is adopting technology innovation in their services higher than other industries and the banks use technology to differentiate them from their competitors. Meuter et al. (2000) stated that customers are now fulfilling their banking needs without the help of bank’s personnel and using automated banking services.

In an attempt to measure customer perception of technology based services within self-service technologies, Lin and Hsieh (2006) proposed perceived service quality within self-service technologies and suggested seven dimensions to form Self Service Technology Quality (SSTQUAL) scale. The dimensions are:

1. Functionality
2. Enjoyment
3. Security
4. Assurance
5. Design
6. Convenience
7. Customization.

These seven dimensions proposed by Lin and Hsieh (2006) were having literature support and were proved significantly related with customer satisfaction and behavioral intentions within technology based services.

Each of seven dimensions is described with its literature support below:

**Functionality** dimension consist of effective, efficient and error less performance of a service in technology based services. The reliability aspect of traditional services contains in the functionality dimension (Parasuraman et al., 1988). Dabholkar (1996) also supported that in technology based self services
functionality contains reliability dimension. Functionality represents all the functions of the service process work properly and every function leads to achieve effective performance of service. In the context of internet services, functionality presents performance dimension (Yen, 2005) and in electronic services it presents the system availability (ESQUAL; Parasuraman et al., 2005).

**Enjoyment** dimension is the second dimension among the seven dimensions suggested by Lin and Hsieh. The researchers found enjoyment one of the critical dimensions and positively correlated with perceived service quality. Even the eminent researcher Dabholkar (1996) also stated that in making customers to feel good while using the technology based services, enjoyment means interesting, delightful or joyful features of a service. Further he asserted that the enjoyment comes from the virtue of interaction of customer with technology based services.

**Security** dimension is third dimension to constitute the perceived service quality of technology based services (TBS). It is also very relevant in this context and having a good literature support. Security means making customers’ interactions and transaction safe from any kind of threat or loss. Customer should feel secure while using the technology based services from a service provider. For this purpose the TBS should having a complete privacy policy and advanced cyber protection to protect transactions and customer’s valuable information’s from threats. Security was considered as the degree to which a service is secure and protected (Zeithaml et al., 2002, Parasuraman et al., 2005)

**Assurance** is another dimension of perceived service quality with in technology based services, which seems like the security dimension but is different from that apparently. The good image and the reputation of the firm represent the assurance in a service (Lin & Hsieh, 2006). As per Parasuraman et al. (2005), assurance is inspired by presentation of truthful information. When a service provider is having with the ability of inspiring trust and confidence the service is felt assuring (Parasuraman et al., 1988).
The perceived service quality enhanced with the **Design** of technology based services. The design dimension comprises of visually appealing layout of a service and the use of latest equipment to facilitate the service process (Lin & Hsieh, 2006). The design of a technology based service should be aesthetically good and create an interest to use the service. The design dimension in service resembles with tangibility dimension in product.

The sixth dimension as suggested by Lin and Hsieh is **Convenience** dimension. It refers to accessibility to the technology based services offered by the service provider like access to website, mobile banking applications; accessibility to ATMs and the operating hours to avail the services.

The seventh dimension of the technology based services is **Customization**. The customers are having different service expectations with the same services. They want to avail services at their own convenience and requirements. As a result of this, the researchers found customization dimension highly related with the service quality of a service provider. The bank’s technology based banking should take care of individual customer’s requirements and preference.

### 2.3 Customer Satisfaction and Behavioral Intentions

In today’s competitive and dynamic environment bank leaders are working hard to attain customer satisfaction. It is well understood that the satisfaction comes after fulfillment of some needs or basic requirements. As per Maslow (1954), the human satisfies his needs in defined arrays or steps one after one. Maslow posited five basic human requirements as physiological needs, safety needs, social needs, self esteem and self actualization needs. And the customer satisfaction may be achieved by making customer to fulfill his needs e.g. if customer perceives a service process unsecure then he may not use that service. While talking about social needs role in service delivery process, if customer wants to have employee involvement in service process then he will be satisfied when he gets face to face service facilitation by service provider. *The customer, who is at the level of self-actualization state, expects customized services from the service provider and at
the same time fulfillment of the lower level needs by the services will not make him satisfied.

As per the research conducted to conceptualize and operationalize the customer satisfaction, it was found that providing service performance at par with promised standards generate moderate satisfaction level, enhanced performance than promised standards gives delight to customer while performance less than promised lead to dissatisfaction to customers. Spreng and Mackoy in 1995 found that there was a debate on whether the service quality has association with customer satisfaction or these two concepts are similar.

Several studies carried out on measuring customer satisfaction and service quality perception in service organizations and the generalization gave its verdict that the two concepts are distinct (Bitner, 1990). Notwithstanding, Oliver (1980) and Parasuraman et al. (1988) found service quality as partial determinant of customer satisfaction. Even, Mackoy and Spreng (1995) addressed the relationship between perceived service quality and customer satisfaction and found the latter is the antecedent to former. Many researches were conducted on quantifying the relationship between perceived service quality and customer satisfaction in different service settings.

In an attempt to define customer satisfaction Kotler and Susanto (2000) described customer satisfaction as the level of customer’s feelings after comparing the performance with expectations. In case of performance equal to expectations, customer feels satisfaction and if performance is less than the expectations, customer will be dissatisfied.

According to Lin and Hsieh (2006), CSAT within TBS comes from the followings:

1. Ability of TBS to function correctly.
2. The extent to which service is perceived as enjoyable, secure, and convenient
3. The level of security and customization TBS provides customers.
Lin and Hsieh (2006) supported that the ability of TBS to inspire trust and confidence will increase customers’ satisfaction with the service. They also expected perceived service quality to correlate with customer satisfaction (CSAT).

Customer Behavioral intentions (CBI) are the motivational factors which affect his behavior. The behavioral intentions are the indications how determinedly the customer is willing to try the service or product or to purchase it or to go by a particular behavior (Ajzen, 1985). The factors which motivates to customers to behave consist of perceptions, attitude toward a particular task and situations which lead towards a certain actions. In the present study, customer behavioral intentions may be favorable or unfavorable towards service delivery process.

As per Zeithaml et al. (1996) CBI can be taken as the indications that indicate about the customer whether he will stay with services of service provider or not. It simply means that whether the customer will remain using the services of any organization or it will discontinue using the services. Ajzen (1991) emphasized that customer perceptions and his attitudes are having meaningful role in predicking the actual behavior of the customer. As per theory of planned behavior, behavioral intentions lead to predict human behaviors. Ajzen (1991) postulated that while determining behavioral intentions following three factors are crucial:

1. Attitude toward a behavior
2. Subjective norms
3. Perceived behavioral control.

Many researchers examined the customer behavioral intentions (CBI) and their determinants or antecedents (Parasuraman et al 1988; Cronin & Taylor, 1992; Dabholkar, 2000; Lin & Hsieh, 2006). The satisfaction and behavioral intentions were studied by the researchers and practitioners from service quality literature instead of psychological aspect. The service organization felt the need of retaining customers along with enhancing new customers. The behavioral intentions give
the indications whether the customer will come for repeat purchase, recommend
the service to a friend or he will leave the usage of services.

The model of CBI consequences of service quality was proposed by Zeithaml et
al. (1996). They stated that on the basis of service quality perception customers
find the service quality of any service as superior or inferior. In the case of
superior service quality perception, customer will have positive or favorable
behavior intentions. These positive CBI lead to retain the customers, steady sales,
increase in customers spending on services; align the customer’s willingness to
absorb price hikes etc. Even when customers spread the word of mouth regarding
the services the likelihood of attracting new customers is increased. While on
another side, when customer does not have favorable intentions he behaves
entirely opposite. In this case customer stop using services of service provider
reduce his spending and may deter other customers.

Carrillat, Jaramillo, and Mulki (2009) conducted a Meta analysis and found that
service quality plays an important role in building long-term relationships of
customers with service organizations. Even Lin and Hsieh (2006) discussed the
role of service quality in achieving customer satisfaction and eliciting positive
customer behavioral intentions. Lin and Hsieh (2006) called for further
investigation of service quality within TBS in the banking industry. A common
theme in these studies is the association among customer perception of service
quality and CSAT and CBI.

2.4 Researches on Perceived Service Quality towards TBBS, Customer
Satisfaction and Behavioral Intentions

Many researchers have studied different aspects of technology based banking
services (TBBS) in relation to customer satisfaction (CSAT) and customer
behavioral intentions (CBI) in different part of the world. Meuter et al., (2000)
examined the sources of satisfaction and dissatisfaction in technology based
service encounters within self service technologies (SST). The study consisted of
web surveys of one thousand customers who use any of SST and investigated the factors that lead to satisfaction or dissatisfaction while using SST.

They considered self-services were ATMs, automated hotel checkouts, telephone banking, internet based services etc. and the usage of these services requires only machines and do not require service providers physical help. The SSTs were further classified as Low Technology Self Service and High Technology Services. The data collected from 823 customers were analyzed for the study results. The findings showed that three major groups of factors leaded to a satisfactory evaluation of a self service technology experience and four major groups of factors to dissatisfactory evaluation after critical incident investigation. The factors leaded to satisfactory evaluation were (a) the ability of SST to trouble shoot the immediate problem or situation (b) the relative advantage that customers perceive they are getting from using an SST and (c) good functionality of the SST. The factors leaded to dissatisfactory evaluations were (a) the situations in which customers are prevented from using the service (b) the lack of regular maintenance for SST (c) poor design of SST (d) the last is customer-driven failures i.e. the inability of firms to anticipate and resolve the possible mistakes customers may commit. These factors helped the researchers to understand the factors leaded to satisfaction and dissatisfactions with the use of SST’s. The study
gave the scope of improvement for the service providers who are providing SST or planning to introduce their SST to customers. The study recommended that the service providers to improve their services due to which customers might be dissatisfied.

Sharma and Mehta (2004) conducted a study on five banks namely State Bank of India, corporation bank, Jammu and Kashmir bank, and UTI bank. The Jammu and Kashmir and UTI comes in the category of old private banks and State Bank of India and corporation bank are public sector banks. The study used SERVQUAL scale to measure perceived service quality of the banking services provided by the selected banks on the 5 point Likert Scale ranges from Agree=5 to Disagree=1. The assumption of the study was that the service quality is a multidimensional construct. The dimensions of the construct were tangibility, reliability, assurance, empathy and responsiveness. The findings of the study revealed that the public sector banks from the selected banks are doing better than their private counter parts in the terms of the service quality perception and responsiveness factor is the prime factor for service quality in public sector banks as per the study.

Bodla (2004) conducted an empirical study on four private sector and four public sector banks operating in Chandigarh, Haryana and Delhi region to examine and measure the service quality of these banks using SERVQUAL model. The study was an attempt to study the gaps between the customer’s expectations and perception towards quality service of the selected banks. The findings of the study suggested that there was a significant gap found between customer’s expectations and perceptions regarding the quality of service provided by the selected banks. The study also revealed that the private sector banks has lesser gap between customer’s expectations and perceptions as compared to customers of public sector banks on all dimensions except of assurance dimension.

Regasamy and Kumar (2005) in an attempt to know the customer service provided by the banks conducted a comparative study on three main banking segments in Indian context. The study conducted on public, private and foreign
banks operating in the country. The result stated that the foreign banks are on the top, as compared to public and private sector bank in providing quality services to customers. The other findings of the study also revealed that the private sector banks are also competing foreign banks successfully in terms of customer services. And private sector banks are also putting forth their best efforts to provide better services at par with global standards.

Kitten (2007) stated that most of consumers take their decisions on the basis of count of ATMs and level of accessibility of the ATMs provided by financial institutions. These technical capabilities greatly impact customer decision to choose a bank. In another term it was found that usage of technology based banking services increase the competitive position of the banks.

Padhy and Swar (2009) examined the service quality in Indian context and investigated the role of technology in service quality perception. The study used SERVQUAL scale to measure service quality perception. The three types of banks i.e. public, foreign and private banks were included in the study. Five banks namely State Bank of India, Punjab National bank from the public sector banks, ICICI and Axis bank from the private sector banks and one bank as CITI bank from the foreign banks were included in the study. The physical location for the study was limited to Orissa state only. The sample consisted of 440 banking customers from the above selected banks on judgmental basis with the use of seven point Likert Scales for measurement. The selected banks were compared on the basis of dimensions of perceived service quality. The study revealed that the foreign banks topped the list of banks followed by private and public sector banks on the basis of perceived service quality scores. The technology played a significant role to differentiate the services of banks among each other while the human element played its role less significantly in differentiation, as per the study. The study made suggestion that the banks leaders should focus on responsiveness factor to align their perception in desired direction.

Bedi (2010) examined the service quality perception, customer satisfaction and customer behavioral responses towards public and private sector banks in India.
The study was conducted using self administered survey instruments based on interviews with bank managers and bank customers. The researcher included 17 banks for attaining the research objectives; 10 banks from public sector banks and 7 banks from private sector banks. The study was conducted on 700 customers selected from the said banks. The results from the study revealed that the private sector banks customers perceive their service as higher quality services as compared to public sector banks service quality perceptions. While talking about customer satisfaction again the private sector banks customer are more satisfied than the public sector banks customers. As far as behavioral responses are concerned though the private banks customers showed to recommend services of their current banks still they may switch their current bank if they offered better services from anywhere else. The public sector banks customers have the least score to switch to other bank. The study concluded that the perceived service quality in an antecedent of customer satisfaction and high satisfied customers are more likely to recommend and use their services of their bank on the basis of public and private banks

**Kheng, Mahamad, Ramayah and Mosahab (2010)** studied the relation of service quality with customer loyalty in banking industry of Malaysia. The study conducted using self administered questionnaire based on SERVQUAL scale using 7 points Likert Scale. The sample size consisted of 238 banking customers selected from ten banks of Malaysia. The findings showed that there was a significant relation existed between service quality perception and customer loyalty. And any improvement in service quality results the positive change in customer loyalty. The customer satisfaction and service quality dimensions found to be the antecedents of the customer loyalty in the country.

**Malhotra and Singh (2010)** conducted an exploratory study in a pursuit to reveal the present status of internet banking services in Indian context. They also explored the factors that affect the internet banking services in India. The Study revealed that the public sector banks are far behind in comparison to private and foreign banks in terms of range and advancement of internet banking services.
The private and foreign banks have good range of advanced banking services to compete at global level. They also identified some factors like size of the bank, financing pattern of the banks and experience of the bank in providing internet based banking services that affect the extent of Internet banking services. 

**Ding, Hu and Sheng (2011)** explored the dimensions of electronic self quality of online services. For the said purpose the researchers reviewed the literature regarding the services quality in technology based services and in self service technologies. The study proposed a new model E-SELFQUAL to measure the service quality of the self service based online services. E-SELFQUAL consisted of four dimensions with further sub dimensions. The main four dimensions were perceived control, service convenience, customer service and service fulfillment and found related with customer satisfaction and customer loyalty. However the responsiveness dimensions did not positively correlate with customer loyalty.

**Ganguli and Roy (2011)** explored the dimensions of generic technology based banking service quality and examined the impact of these dimensions with customer satisfaction and loyalty. The study was conducted using online survey instrument developed by researchers based on various studies from the literature. The respondents were students of a University in the Massachusetts state of the USA and participated in survey by filling online questionnaires. All in all 325 usable questionnaires were included in analysis. The study results identified four generic service quality dimensions as customer service, technology security and information quality, technology usage easiness and reliability, technology convenience. The study also revealed that customer service and technology usage easiness & reliability positively and significantly impacted on customer satisfaction as well as on customer loyalty. Further, the technology convenience and customer satisfaction have meaningful and positive impact on customer future intentions i.e. customer loyalty.

**Alkibsi and Lind (2011)** examined the customer perception of TBBS with customer satisfaction and behavioral intentions in banking industry of Yemen. The researcher used the SSTQUAL scale developed by Lin and Hsieh (2006). The
purpose of the study was to determine whether a set of TBBS dimensions had association with customer satisfaction and behavioral intentions. The study included online and offline survey using SSTQUAL based survey instrument containing 20 items for service quality perception and 3 items each for satisfaction and behavioral intentions. The analysis was based on 465 usable questionnaires. The study emphasized that there was a significant association among dimensions of service quality perceptions and customer satisfaction and behavioral intentions in the context of Yemen banking industry. While predicting customer satisfaction the TBBS dimensions enjoyment, customization, design, convenience and functionality were positively associated with customer satisfaction. The assurance dimension was negatively associated with customer satisfaction. The satisfaction appeared to become the major determinant to predict customer behavioral intentions towards TBBS in the country.

Kumar, Rejikumar and Ravindran (2012) conducted a study on service quality perceptions and behavioral intentions regarding usage of mobile banking one the TBBS provided by banks operating in India. The study examined the factors impacting the continuance decisions of the adopters of mobile banking in the Kerala state located in India. The major dimensions used for the study were perceived usefulness, ease of use, service quality, credibility and risk towards mobile banking and satisfaction as well as continuance intentions. The data was collected from 184 customers with the help of structured questionnaire. The findings indicated that there was significant relation between the perceived service quality and satisfaction regarding the mobile banking. The study also revealed that the customer satisfaction is the major determinant to predict continuance intentions of the customers towards usage of mobile banking.

Mojoodi, Najafizadeh and Ghasemi (2013) conducted a study on dimensions of technology based banking service quality and their relation with customer satisfaction and loyalty. The study was conducted by developing a survey instrument based on literature of service quality, customer satisfaction and customer loyalty. The study considered all automated service as whole and treated
the technology in generic terms. The measurement instrument consisted of items related to service quality, customer satisfaction and customer loyalty with demographic characteristics of the respondents. The 560 usable filled questionnaires were obtained by researcher in the Iran. The exploratory factor analysis identified the eight dimensions pertaining to service quality as easiness, security, customization, assurance, convenience, comprehensiveness, employee knowledge and support services. The effect of these dimensions was measured on customer satisfaction and loyalty. It was found that the dimensions customization and comprehensiveness did not correlate with customer loyalty.

Sanson (2013) measured the customer satisfaction in banking sector in India. The study was confined to Jammu, India region. The researcher selected two banks for the purpose of the study. ICICI bank selected from the private sector and State Bank of India from the public sector. A survey instrument based on SERQUAL scale was on one hundred customers from each bank to know the service quality perception and customer satisfaction regarding the service provided by the said banks. The perceptual gap score of service of ICICI bank was significantly lower than the gap score of State Bank of India. It translated that the selected private bank has better perception of services among its customers than State Bank of India’s customers. The study recommended the leaders to pay greater attentions on the reasons of service failure and its timely recovery to make customer more satisfied.

Baksi (2013) explored the link between automated service quality and customer satisfaction and behavioral intentions in Indian context. The study was carried out on State Bank of India customers using CRM performance indexing approach. The study explored the possible association of perceived automated service quality with customer behavioral intentions in a CRM environment. The researcher used E-SERQUAL to collect the customer responses regarding perceived automated service quality on seven points Likert Scale as suggested by Alkibsi and Lind (2011). The total 1560 completely filled questionnaires were included in analysis. The findings based on the study revealed that the perceived
automated service quality is positively correlated with customer satisfaction of automated services in the context of State Bank of India. The findings showed that the perceived automated services quality dimensions are web based system, security, efficiency, contact, responsiveness and commitment. Another finding showed that the perceived automated service quality positively correlated with customer satisfaction. The positive behavioral intentions showed loyalty with the bank.

2.5 Gap Identified

The service quality, customer satisfaction and behavioral intentions consist of a very vast literature. Several studies have been conducted on measuring customer service quality perception of traditional and modern banking services in India. Many studies conducted using five dimensions of service quality proposed by Parasuraman et al. (1988) and scales suggested by other researchers. Due to increased usage of technology based banking services in India, there are huge requirements to address the assessment of customer’s service quality perception towards self service technologies in Indian banking industry. Moreover, the studies conducted so far are limited to specific areas and based on few banks which may not be the true representation of the Indian banking industry. Another, the data collected from these banks are not having an equal representation of foreign banks.

Lin and Hsieh (2006) developed the SSTQUAL scale to measure service quality perception towards technology based banking services within self-service technologies and called for future research in other contexts. Bridging these gaps, present study uses the SSTQUAL scale developed by Lin and Hsieh to measure the customer’s service quality perception of technology based banking services with in self service technologies provided by selected banks in India. The study also involves in measuring the level of customer satisfaction and future behavioral intentions among customers regarding the TBBS offered by the selected banks. The present study has included fifteen banks from all three types of commercial banks i.e. public, private and foreign banks from Indian banking industry and
conducted a survey on 750 customers selected from these banks. The selected banks provide a wide range of technology based banking services to their customers across the country.

The findings of the study may help the bank leaders to know the status of customer’s perceptions and satisfaction towards the services being provided by these banks and may help the banks to improve their services in order to make the customers satisfied and retained with the selected banks.