CHAPTER 8

SUMMARY, FINDINGS AND CONCLUSION

8.1 PROLOGUE

Electronic services have recently received considerable attention as these are located at the intersection of two major developments in the business world: the services growth and ICT (Information and Communication Technology) penetration. In India, its adoption is gaining momentum backed by booming service sector (68.3% of GDP in 2013) and expanding telecom sector (the second largest telecom market by subscriber base, 2013). Banking sector is the area where IT (Information Technology) diffusion is rapid as well as critical owing to the unique characteristics of banking services. There is paradigm shift in the technological domain of the Indian Banking sector during the reformatory phase. The electronic banking system has shown a steady growth in both value and volume terms.

IT in banks is promising as well as lucrative in terms of operational and strategic benefits it offers. IT provides benefits to the banking institutions in terms of reduced operational cost, better customer service and development of sophisticated product offerings as it facilitates better asset – liability management and advanced market research. In the Indian banking context, almost all banks have incorporated IT in their strategies and operations but at different levels depending upon the driving forces and obstacles for its successful implementation.

e-Banking offers more value to the customers in terms of information, servicability, convenience, wider assortment of offerings, and much more. Regarding service innovations in banking sector in some form of e-banking, attitude of bank customers is of significant importance for their adoption and proliferation. Moreover, success of service innovations depends to a great extent on the perceptions and consumption patterns of the intended users of such services. Customers would readily adopt innovative services if these are perceived to be of high quality. Moreover, high service quality leads to
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customer satisfaction and continual use of the services. Service quality is a notion that can be taken as a reference point for service evaluation.

8.2 LITERATURE REVIEWED

The retrospective review of the past studies becomes quite necessary while exploring new horizons in upholding the stake of new research ventures. The extant literature has been divided into different sections representing different research issues. The major issues reviewed under this study are:

- **IT adoption in banking sector**
  Numerous studies have been conducted both at national and international level on the adoption of Information and Communication Technologies. Majorly they studied the factor affecting a firm’s decision to adopt new technologies. Studied relevant to banking institutions (Mandel 1977; Hannan and McDowell, 1984; Pennings and Hariant, 1992; Daniel, 1999; Bradley and Stewart, 2002; Furst *et al.*, 2002; Nickerson and Sullivan, 2003; Kumra and Mittal, 2004; Sullivan and Wang, 2005; Vaithilingam *et al.*, 2006; Malhotra and Singh, 2007; Toufaily and Daghfous, 2009; Abukhzmam and Lee, 2010; and Alam *et al.*, 2010) reported organizational, technological, environmental (competitive, regulatory, market oriented) as major influencing factors for IT adoption. Attitude of customers affecting e-banking adoption also assumes a significant place in the adoption literature (Buzzacchi *et al.*, 1995; Daniel, 2000; Aladwani, 2001; Byers and Lederer, 2001; and Corrocher, 2006). However, factor like customers’ inertia, technical complexities, lack of security, lack of senior management support, internal attitude, size of existing demand, branch intensity are found to be major regarding forces for e-banking adoption at bank level (Bradley and Stewart, 2002; Jayawardhana and Foley, 2002; Corrocher, 2006; Khalfan *et al.*, 2006; and Abukhzam and Lee, 2010). Most of the studies have taken adoption as binary variable (adopted or not adopted).

- **Customers’ assessment of IT based banking services**
  Various theories have been proposed towards understanding actual user behaviour. Notably, Theory of Reasoned Action (Fishbein and Ajzen's (1975), Social cognitive
theory (Bandura, 1982), Diffusion of innovations theory (Rogers, 2003), Technology Acceptance Model (Davis, 1989), Theory of Planned Behaviour (Ajzen, 1991), Task-Technology Fit theory (Goodhue and Thompson, 1995), the Unified theory of acceptance and use of technology (Venkatesh et al., 2003), put forth various factors determining the perceptions, beliefs, and attitudes of actual users contributing an insight into understanding the level of adoption of electronic banking. Various attempts have been made to extend these theories incorporating new factors or applying in different organizational setups.

Apart from applying and extending popular theories of technology acceptance, the focus of much of the research is laid on instrumentality of technology acceptance considering other variables like demographics (Venkatesh and Morris, 2000; Mattila et al., 2003; Kolodinsky et al., 2004; Porter and Donthu, 2006; Poon, 2008; Mirza et al., 2009; and Mansor and Mat, 2009), trust (Dimitriadis and Kyrezis, 2008; Prompattanapakdee, 2009; and Margaret and Ngoma, 2013), past experience (Taylor and Todd, 1995; Agarwal and Prasad, 1999; and Prompattanapakdee, 2009), information content (Pikkarainen et al., 2004), self interest (Teo et al., 1999), social influence (Yang et al., 2012) and other consumer traits (Dabholkar and Bagozzi, 2002). In the Indian context, there are only few studies focused on IT adoption (Agarwal and Prasad, 1999; and Agarwal and Karahanna, 2000) and specially in banking sector (Gupta, 2008; Joshua and Koshi, 2009; Sharma, 2011; and Kesharwani and Bisht, 2012).

Further, it has also been shown that customers use electronic based channels in combination with the conventional channels emphasising personal relations with bankers (Rotchanakitsumnuai and Speece, 2003; Abor, 2004; and Kamakodi and Khan, 2008).

- **IT and Service Quality**

Many researchers contended strong and direct link between perceived service quality and customer satisfaction (Naik et al., 2010) and it has been shown that service quality affects satisfaction and that satisfaction in turn affects behavioural intentions (Fornell, 1992; Halstead and Page, 1992; Ruyter et al., 1997; Wang and Sheikh, 2006). There seems to be a great deal of similarity between these two concepts, yet some researchers careful
stated that these are two different constructs (Bolton and Drew, 1991; Parasuraman et al., 1988; Oliva et al., 1992; and Spreng and Mackoy, 1996). Satisfaction is transaction specific while quality can be perceived without actual consumption experience (Oliver, 1989).

Regarding the role of technology or IT in particular, strong association has been found between IT deployment and service quality improvements (Walker and Cheung, 1998; Joseph et al., 1999; Wang and Wang, 2007; and Wong et al., 2008). Based on pioneer framework of service quality evaluations, notably SERVQUAL (Parasuraman, 1988), and SERPERF (Cronin and Taylor, 1992), various models for website service quality have been proposed (Yoo and Donthu, 2001; Wolfinbarger and Gilly, 2001; Barnes and Vidgen, 2002; Loiacono et al., 2002; Parasuraman et al., 2005; and Bauer et al., 2006). In the banking sector, some notable contributions towards evaluating service quality and finding its determinants are made by Avkiran (1994, 1999), Johnston (1995, 1997), Lassar et al. (2000), Jun and Cai (2001), Ruyter et al. (2001), Bauer et al. (2005), Karatepe et al. (2005), Petridou et al. (2007), Sohail and Shaikh (2008), Rod et al. (2009), Farokhian and Sadeghi, (2011), and Ariff et al. (2012). In the Indian banking context, literature has limited works regarding service quality evaluations (Sureshchandar et al., 2002; Sudhahar et al., 2006; Purohit and Patardikar, 2007; and Arora et al., 2011) and e-banking service quality evaluation in particular (Khan et al., 2009).

8.3 **NEED AND OBJECTIVES OF THE STUDY**

The review of existing literature reveals that very little work has been done in relation to adoption of Information Technology (IT) in the Indian banking sector. There is paucity of studies on the nature and extent of IT adoption in the Indian banking system. The intention behind this research, therefore, is to fill this gap by exploring thoroughly and comprehensively this field of research. Indian customer base is very huge and dynamic. Understanding how Indian customers perceive technology driven services, their acceptance, motives and their behavioural intentions are some areas needed to be further explored. Moreover, there is very little work existing on the relationship between IT and banking services quality as far as India is concerned. Cultural differences and the level of
development across countries cause different dimensions to have different impacts on
behavioural intention across countries (Al-Hajri and Tatnall, 2008; and Bandyopadhyay and
Bandyopadhyay, 2010). Given the lack of literature and knowledge on this subject, it is
the modest attempt to examine how information technology and services quality
interrelate in the banking context as perceived by the bank customers and the likely
impact of such quality perceptions on the usage or adoption of new technologies. The
study also highlighted which determinants of service quality are directly influenced by IT
and explored what are the enabling and retarding factors for effective implementation and
upsurge of IT system in banks.

In the behest of technological advancements in banking sector and the presence of
literature gaps, the following objectives were proposed to be fulfilled through this
research:

1. To examine the nature and degree of IT adoption in the selected banks.
2. To determine the drivers and barriers for successful IT implementation and
   propagation in banking institutions.
3. To gauge the level of acceptance of IT based banking services by the customers.
4. To assess the major technologically influenced determinants of service quality in
   banking sector.
5. To determine various factors influencing actual customers’ adoption of e-banking
   services.

8.4 **RESEARCH METHODOLOGY**

Taking two sample groups, the study was carried out among the customers and the
managers of banks in Punjab. For the aforesaid purpose a sample of 10 private and 10
public scheduled commercial banks were taken from each selected city of Punjab i.e.
Amritsar, Jalandhar, and Ludhiana. As all banks in India are providing e-banking to some
extent, the banks were selected on the basis of maximum profitability in India (source:
RBI, 2010). One manager from the largest branch of each bank in each city was
approached making sample size of managers to be 60. A sample size of 600 customers
was selected taking 10 customers from each bank.
### Table 8.1: Research Framework Scheme

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Objective I</th>
<th>Objective II</th>
<th>Objective III</th>
<th>Objective IV</th>
<th>Objective V</th>
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<tbody>
<tr>
<td><strong>Research Question</strong></td>
<td>Nature and degree of IT adoption in the banks</td>
<td>The drivers and barriers for successful IT implementation and propagation in banking institutions.</td>
<td>Level of acceptance of IT based banking services by the customers</td>
<td>Major technology influenced determinants of service quality in banking sector.</td>
<td>Various factors influencing actual customers’ adoption of e-banking services.</td>
</tr>
<tr>
<td><strong>Literature used</strong></td>
<td>Managerial, Technological</td>
<td>Micro and Macro environmental</td>
<td>Technology acceptance, Social Psychology, Behavioural.</td>
<td>Service Quality</td>
<td>Technology acceptance, Social Psychology, Behavioural.</td>
</tr>
<tr>
<td><strong>Sample and Data source</strong></td>
<td>-Private and Public Scheduled commercial banks (Bank Managers). -Primary and secondary data</td>
<td>-Bank Managers -Primary/secondary data</td>
<td>-Bank customers -Primary Data</td>
<td>-do-</td>
<td>-do-</td>
</tr>
<tr>
<td><strong>Statistical Tools used</strong></td>
<td>T-test, Mann Whitney test, Weighted Average, Descriptive.</td>
<td>Correlation Analysis, Weighted Average</td>
<td>Factor analysis, Paired Sample t-test, Independent sample t-test, Chi square, Weighted Average.</td>
<td>Factor analysis, Multiple Regression Analysis</td>
<td>Multiple Regression analysis, ANOVA, T-test</td>
</tr>
<tr>
<td><strong>Variables used</strong></td>
<td>Informational, Transactional, Customer Relationship services.</td>
<td>Organizational, Technological, Employee related, Industrial, Customer related, Relative advantage</td>
<td>Various e-services, usage, reasons for preference</td>
<td>Service quality determinants, Overall service quality</td>
<td>Demographic, Perceptual, Usage score</td>
</tr>
<tr>
<td><strong>Empirical Analysis</strong></td>
<td>Chapter 4</td>
<td>Chapter 4</td>
<td>Chapter 5</td>
<td>Chapter 6</td>
<td>Chapter 7</td>
</tr>
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</table>
For collecting data regarding customer perceptions about e-banking services, two branches (where existing) of each selected bank in each city were considered, one being largest and another smallest branch in the city based on business. 5 customers from each considered branch were contacted for collecting data. In case the bank had single branch in the selected city, 10 customers from the single branch were contacted based on Judgment sampling method. Criteria for selection of customers were i) availing at least one form of technological innovation, ii) normally banked through that particular bank.

The study is based on primary data that were collected from the selected respondents directly by administering two sets of comprehensive questionnaires both for customers and bank managers. Questionnaires were pre-tested to check its construct and content validity.

The data so collected were analyzed with the help of various statistical tools appropriate in the context of collected data in order to arrive at the result and authenticate hypotheses that were set during the course of the study. The techniques/measures used are: descriptive statistics, Factor Analysis, Analysis of Variance (ANOVA) and Tukey’s post hoc test, Multiple Regression Analysis, Chi square, Correlation, t- test, and Mann Whitney test.

8.5 STRUCTURE OF THE STUDY

The whole study has been structured into eight chapters, each covering a different aspect of the study. The first chapter is introductory, wherein the concept of technological innovations, IT sector overview, IT diffusion, consequences of IT in banking, service quality concepts have been discussed in detail. Along with conceptualisation, need and objectives of the study are also given in this chapter.

The review of existing literature directly or indirectly related to the study has been presented in the second chapter. The literature is grouped into three sections on the basis of broad issues they cover.

The third chapter details out the research methodology applied to realise the set objectives or to examine the hypotheses set thereon.
The fourth chapter deals with the analysis of bank adoption pattern of e-banking in terms of extent and content of e-services provided by banks. Various factors acting as drivers and barriers have also been explored in this chapter.

The fifth chapter deals with the analysis of bank customers’ assessment of e-banking services in terms of their preference, motives, perceptions, and nature and extent of usage.

Customers’ responses towards factors relevant to service quality as determinants have been explored and examined in chapter six.

The impact of various demographic and perceptual factors on customers’ e-banking usage has been examined in chapter seven.

Summary, major findings, managerial implications along with recommendations and scope for further research are given in chapter eight.

### 8.6 FINDINGS OF THE STUDY

Data tabulation, analysis and interpretations of our survey research have been shown in complete details in Chapter IV- VII. Here, brief preview of the information that is inferred from our survey research has been presented.

#### Section I Electronic banking adoption by banks

Electronic banking adoption by banks has been studied in two parts. In the first part, extent and content of e-banking as adopted by banks have been studied. In the second part, an assessment has been made regarding various drivers and inhibitors for IT propagation in banks as perceived by bankers. This section is framed to realise two objectives:

- To examine the nature and degree of IT adoption in the selected banks.
- To determine the drivers and barriers for successful IT implementation in banking institutions.

The major findings of this section are presented below:
1. Every studied bank has adopted electronic banking to some extent. Electronic banking products have adequate spread among the bank branches with majority of the products being offered over all branches irrespective of size and location under the purview of core banking solution. There are only few e-products which are not offered by some banks at all viz: credit cards, smart cards, phone banking, and electronic wallets.

2. Key Findings related to content of e-services offered:
   a. It has been observed that the overall informational services are offered by all the studied banks at slightly higher than the moderate level (score 2.04).
   b. The transactional services over the electronic channels are offered at the highest level (average score 2.11) among the three categories by all the studied banks.
   c. Regarding maintaining customer relationships through the electronic channels, the banks provide electronic services at moderate level (average score 1.36).
   d. Private banks and public banks don’t differ significantly for the content of e-banking services offered.

3. Key Findings related to extent of e-services offered
   a. Overall weighted average score of the e-banking services offered by all respondent banks is 1.96 which can be labelled as ‘moderate level’.
   b. The basic as well as intermediate services are offered at higher level with the average scores of 2.31 and 2.05 respectively.
   c. However, advanced services which are altogether IT driven are offered by banks at lower level with average score of 0.81.
   d. Private banks and public banks don’t differ significantly for the extent of e-banking services offered under different levels of interactivity.

4. Key findings related to interplay of bank’s e-services customer base (defined in terms of proportion of customers availing e-banking services out of the total customer base) and bank e-adoption.
   a. The most frequent used e-banking service by customers is debit card for ATM services or POS (Point Of Sales) debits. This concurs with the findings of Abor (2004).
b. Results further revealed that private and public banks e-services customer base differ significantly for debit cards, credit cards, ECS (electronic clearing system), internet banking, mobile banking, and phone banking.

c. Correlation analysis was performed to check any association between proportion of customers using e-services and adoption of e-services at different level and different forms. Three items which were found to have significant positive correlation (p<0.05) with bank customers’ usage were: Intermediate services, Advanced services and Overall average adoption.

5. Key findings related to drivers and inhibitors of IT upsurge in banking
   a. The strength of drivers has outdone the strength of inhibitors as perceived by bankers.
   b. The most important factor acting as driver for electronic banking upsurge is customer stimuli in terms of acceptability, usage, need of customer service and maintaining customer relationships.
   c. Regarding driving strength of various factors, no major differences were found between two groups of banks (private and public) except for one factor ‘Bank industry’. Private banks are more innovative and aggressively assume risk to incorporate new technologies as compared to public banks who respond to industry demands.

Section II: Customers’ assessment of IT based banking services

This section deals with the customers’ perspective of e-banking services adoption. In the first section, profiling of respondents is presented along with their banking behaviour. In the second section, factors influencing their e-banking preference and use behaviour have been explored employing factor analysis technique.

1. The substantial proportion of respondents has e-banking experience of more than 4 years, however, majority of them (45%) are regarded as intermediate users of e-banking services having experience of 1-4 years. This indicates that e-banking in India has not saturated yet as the customers are still transcending from lower level to higher level.
2. The most important source of persuasion for bank customers among others was found to be bank employees. Interaction between banker and customers is very important for e-service adoption and use.

3. Results shows that the bank customers are not using e-banking to full extent with average mean usage of 4 products and the mode of 2 indicates that the majority of bank customers avail 2 products.

4. Majority of the respondents are on low usage level of banking services through either medium of branch banking or electronic banking. There is a positive relationship between the two types of transactions (electronic and manual), (correlation co.eff = 0.168) however weak.

5. Customers use electronic channels more often but in combination with other channels. This implies that customers use electronic medium as complementary to the traditional network not as substitute. This concurs with the findings of previous research works (Dannenberg and Kellner, 1998; Mols, 1998; and Vaithilingam et al., 2006) that the electronic distribution channel is complementary to the existing branch banking.

6. Based on frequency and number of e-services availed by the customers, overall bank customers can be regarded as ‘moderate users’. Public bank customers are regarded as low users whereas private bank customers as moderate users of e-banking services. T statistic shows that there are significant differences between group means and the usage scores of technology-enabled banking by bank consumers vary significantly with the type of bank group (private or public) they bank with.

7. Majority of the sample customers (87%) prefer electronic medium of banking. The reasons for their preference were summarized through factor analysis with following factors:

   a. **Functionality**: Functional aspects being the most important reason for e-banking adoption, includes six variables ‘Easy to do banking activities’, ‘Convenient time’, ‘Easy to access’, ‘No queue’, ‘Quick transactions’, and ‘Greater control’. 

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b. **Credibility:** This is the second most important factor for e-banking adoption as perceived by the customers. It includes 3 variables ‘Trust on bank security system’, ‘Confidentiality is preserved’, and ‘Trust on bank’.

c. **Service content:** The third important factor came out be service content. It includes 2 variables ‘variety of services’, and ‘satisfying all banking and financial needs’.

d. **Effort expectancy:** The fourth reason for preferring e-banking is ‘effort expectancy’ including 5 variables ‘Understandable’, ‘Learning to use is easy’, ‘Fits into my lifestyle’, ‘Self charge’, and ‘Experience of related technologies’.

e. **Informativity:** The informativity factor assumed fifth place in the order of importance consisting of 3 variables ‘Prompt information about new services’, ‘Prompt information about new or revised rules/charges’, and ‘Information regarding existing services’.

f. **Performance:** The sixth factor is performance, consisting of 4 variables ‘Quick resolution of complaints’, ‘Reduced cost of transactions’, ‘Flexible to interact with’, and ‘User friendly interface’.

g. **Social influence:** The seventh reason for e-banking preference is ‘social influence’. It includes 3 variables ‘others are using’, ‘status symbol’, and ‘extensive advertisement’.

h. **Self Interest:** The last and least important factor among the 8 extracted factors is ‘self interest’ consisting of two variables ‘enjoyment’, and ‘entertainment’.

**Section III:** Technologically influenced determinants of service quality in banking sector

This section deals with the technologically influenced factors relevant to services quality which may be regarded as antecedents to service quality of e-banking services as perceived by the sample bank customers.
1. 19 variables were considered as relevant to electronic service quality based on extant literature and pilot survey and these were summarised into 6 factors using factor analysis technique as follows:

a. **Reliability:** The highest variability in the customers’ responses towards effects of technology was found attributable to reliability factor. This factor includes 5 variables ‘effective grievance handling’, ‘seamless transactions’, ‘quick response’, ‘service right the first time’, and ‘transaction within committed time’.

b. **Employee efficiency:** It signifies employee productivity with the adequate diffusion of time and knowledge resources. This factor consists of 3 variables ‘willingness of employees’, ‘employees find time’, and ‘knowledgeable employees’.

c. **Operational Efficiency:** Signifying optimized work processes to enhance productivity and convenience to the customers, this factor includes ‘increased comfort’, ‘accessibility’, and ‘fast transactions’.

d. **Assurance:** It signifies a pledge of support inspiring trust and confidence in customers. It includes ‘security’, ‘ensured safety/confidentiality’, ‘instill confidence’, and ‘individual attention’.

e. **Tangible Evidence:** Signifying appearance and external impression, this factor includes two variables ‘visually appealing material’, and ‘attractive screen layout’.

f. **Value to customers:** This factor accounts for least variability in the data set among other factors but it is a highly technologically influenced factor. It consists of 2 variables ‘reduced cost’, and ‘easy availability’.

2. The relative impact of technology on the extracted factors was determined calculating weighted average of item scores constituting the factor. The most technologically influenced factor is found to be ‘operational efficiency’ followed by ‘value to customers’, ‘reliability’, ‘tangible evidence’, ‘assurance’, and ‘employee efficiency’.

3. Regression analysis results revealed that all the six factors significantly determine the variations in overall service quality with no statistical significant differences between the two bank groups (Private and Public). ‘Employee efficiency’ is a factor
that explains maximum variations in overall service quality followed by ‘assurance’, ‘tangible evidence’, ‘reliability’, ‘operational efficiency’, and ‘value to customers’.

4. On comparing the strength of technological impact on the 19 studied variables bank group wise. No major significant differences were found except for 2 variables ‘reduced cost’, and ‘attractive screen layout’.

5. On comparing the strength of technologically influenced determinant factors of e-service quality between the two bank groups. No major significant differences were found except for one factor ‘value to customers’. This indicates that private bank customers expect more valuable services with the infusion of technologies in banking.

**Section IV: Factors affecting adoption levels of e-banking services**

This section is designated to present influence of various demographic (age, gender, income, occupation, etc.) and perceptual factors (including psychographics and product perceptions) on customers e-banking adoption level. Key findings are:

1. The adoption level of the technology-enabled banking services by bank customers vary significantly with the variation in the gender. The average usage score for female was found higher than that of male customers; however, the number of male customer respondents was substantially large.

2. The adoption level of the technology-enabled banking services by bank customers vary significantly with the variation in the age. Results revealed that younger customers are likely to adopt e-banking services more than old age customers.

3. The adoption level of the technology-enabled banking services by bank customers vary significantly with the variation in the income. The usage score was found highest for 3-6 lac income group and lowest for customers having income less than 3 lac.

4. The adoption level of the technology-enabled banking services by bank customers vary significantly with the variation in the education level. Results indicated that the usage score increases as the level of education increases.

5. The adoption level of the technology-enabled banking services by bank customers vary significantly with the variation in the occupation type. The usage score was
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found highest for service class and professional customers in contrast to business category and others.

6. Adoption level was further probed with its relation with some perceptual factors. In the present study, 11 perceptual factors were considered. Among these, 8 factors were customers reasons for preferring e-banking (extracted from factor analysis refer section II) viz. ‘Functionality’, ‘Informativity’, ‘Effort expectancy’, ‘Credibility’, ‘Performance’, ‘Self interest’, ‘Social influence’, and ‘Service content’. Other factors included were ‘Overall service quality’, ‘Satisfaction level’, and ‘Experience’.

7. Regression analysis was made in order of determine influence of various demographic and perceptual factors together on adoption of e-banking services by customers. They collectively explained 34% variance in the usage or adoption of e-banking services. Among 11 perceptual variables studied, only six variables viz. ‘Informativity’, ‘Performance’, ‘Self interest’, ‘Service quality’, ‘Satisfaction’, and ‘Experience’ are found to be significantly and positively associated with e-banking adoption. Four demographic variables were found to have significant association with adoption of e-banking services.

8.7 MANAGERIAL IMPLICATIONS AND RECOMMENDATIONS

• Banks are aggressively providing informational and transactional services, but they lack somewhere in maintaining relationship with the customers through electronic media.

Managing customer interaction, role of technology needs to be aligned towards maintaining and strengthening customer relationship through offering more personalized services in terms of customization, greetings, personal financial recommendations, etc.

• Banks have successfully replicated and improved traditional banking services over electronic media but they have yet to exploit full potential of IT in terms of new or advanced services which would be highly technology intensive.
To make transition from basic to advanced level (technological upsurge), customer behaviour may be a significant facilitator along with other resources. With the RBI stance for financial inclusion and presence of supportive systems, provisioning of advanced services like real time two way communication and individual financial recommendations (guiding personal financial planning) using data mining tools will lure the customers and be valuable for the banks.

- Regarding relationship between customer usage behavior and bank adoption behavior of electronic services, it has been observed that there is significant positive relationship between the two.

  It has strong insight that unless customers are not convinced and use these e-services, banks will not be motivated to adopt and provide innovative services. In order to justify IT expenditure, banks need to first create awareness and induce more usage of e-banking services.

- With technological propagation, system complexities increase. So in order to sustain customers’ relationship at this level, they need to spend on effective security system and maintenance as well as up-gradation of the system. There is also need to develop customers trust regarding security system of the banks.

- Interactions between bankers and customers are very important for e-service adoption and use as branch banking and e-banking are found to be complementary to each other. Bank should make efforts to improve in employees’ domain by improving their technical and personal skills.

- Banks e-adopt (content as well as extent) don’t vary significantly between the two bank groups (private and public), but their customers’ usage showed significant differences. This signifies that there are differences in service delivery or customers’ perceptions about service quality as provided by banks.
Public banks are lagging behind, so these banks with (or without) government support should improve the service delivery attributes (including infrastructure, aesthetics, and staff) and create trust among their customers.

- While developing new services or enriching the existing ones, the bankers can prioritise some influencing attributes as ‘functional’, ‘credibility’, ‘service content’, ‘effort expectancy’, ‘informativity’, ‘performance’, ‘social influence’, and ‘self interest’ in the order of importance. The last two attributes are more applicable in designing bank marketing strategies.

- One interesting finding having serious implication for bankers is, although customers perceive less effect of technology on the factor ‘employee efficiency’ but it is found to be highest contributor towards explaining variability in overall service quality. Considering three attributes, technology, antecedents (factors) and service quality, the order of expected positive impact of technology on individual factor is almost reverse for importance of the factor towards explaining variability in service quality. This finding reveals a gap between technology adoption as perceived by bank customers and improvement in service quality.

  If at all, bankers increase the technologically influenced efficiency of employees, there will be substantial increase in the perceived service quality and ultimately high usage of e-banking services by the customers leading further to technology upsurge.

- E-banking usage is found to be high for female, more educated, younger, higher income, and salaried customers.

  So banks should formulate their marketing strategies in the way to reap the benefits of current usage (providing customer service to delight customers with high usage) and to lure other classes of customers towards e-banking by developing new services fitting into their requirements.
• It has been found that there are differences between the factors indicating customers’ preference for e-banking and the factors indicating their actual usage of the same. The most important explanatory factors for e-banking preference were identified as ‘functional’, ‘credibility’, ‘service content’, ‘effort expectancy’, ‘informativity’, ‘performance’, ‘social influence’, and ‘self interest’ in the order of importance. While for e-banking usage, factors having significant contribution were identified as ‘performance’, ‘informativity’, and ‘self interest’ in the order of predicting strength.

The bankers must focus on the previous set of factors for luring or retaining the e-banking customers but for higher returns on their e-investments they should increase the e-banking usage focusing on the order of the second set of factors.

8.8 RECOMMENDATIONS TO CUSTOMERS

• As a direct and significant relationship was found between bank’s e-services customer base and bank’s adoption of IT, customers should use e-banking services more so as to get better and more advanced e-services from banks.

• More the customers’ adoption of e-services, lesser the cost associated with it. Using electronic media for banking transactions, cost can be substantially reduced because of presence of network effect.

• As majority of the respondent customers prefer and are satisfied with e-banking services, they should recommend the use of same to others. Friends/relatives constitute an influential source of persuasion for bank customers.

• Customers should themselves make some efforts to get knowledge and updates about e-banking services and make themselves technically competent.

• To protect themselves fall victims of electronic frauds, bank customers should follow the instructions and pay due attention to the security tips and alerts provided by banks and RBI in various forms (e-mail, SMS, newspaper inserts, radio, television, etc.)
8.9  CONCLUSION

Although service and ICT sector are being considered as power engines for the Indian economy, the Indian banking sector has embraced IT only at moderate level. There is still scope for further technological developments in the Indian banking sector in terms of customer relationship building services and more advance services which would be fully IT driven. However, for IT upsurge at the present, the drivers have outdone the impediments once faced by the adopters. The strongest driver is bank customer whose acceptance and usage of such services define the bank business and justification for huge investments made for IT infusion in the bank’s system. The dark side is customers’ prefer e-banking services but their usage is moderate (significantly low for public sector banks). Various factors have been identified as reasons for their preference and explanatory factors for their usage of e-banking services.

Electronic media and traditional media (branch banking) are found to be complementary to each other. So, Bank staff still has vital role to play in influencing customers and successful as well as profitable implementation of technological service innovations in banks.

Technology infusion has also affected service quality of banking offerings positively. Six technologically influenced determinants of service quality have been identified, significantly defining overall service quality of e-banking services. Service quality itself is found to be a significant explanatory factor for customers’ e-banking usage that further drives IT propagation in banks.

8.10  FUTURE RESEARCH AVENUES

One area of future research would be conducting similar studies regarding the adoption of e-banking services in rural areas as only three major urban cities of Punjab were considered under the study.

Financial inclusion being a national priority of the Indian Government, the current contribution of e-banking may be examined towards achieving the same objective covering under-banked or unbanked population.
As customer experience with the e-banking services must be increasing, their perceptions and subsequently satisfaction may be further explored. Moreover, inter-state comparisons can be made for the same.

One objective of the study was to determine factors as determinants of service quality. The model developed gave sufficiently acceptable results on empirical testing. But still there was unaccounted variance left in the service quality. This indicates scope for future research considering some other factors that can maximise the total variance explained of the e-banking service quality.