CHAPTER - I
INTRODUCTION AND DESIGN OF THE STUDY

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1.1 INTRODUCTION

Banking environment has become highly competitive today. To survive and grow in the changing market environment, banks are going for the latest technologies, which has more flexible structure that can respond quickly to the dynamics of a fast changing market scenario. It is also viewed as an instrument of cost reduction and effective mode of communication with people and institutions associated with the banking business. Information Technology enables development of sophisticated products, better marketing infrastructure and implementation of reliable techniques for control of risks and helps the financial intermediaries reach geographically distant and diversified markets. Internet has significantly influenced the delivery channels of the banks. Internet has emerged as an important medium for delivery of banking products and services.

The customers can view their accounts; get account statements, transfer funds and purchase drafts by just pressing a few keys. The smart cards i.e., cards with microprocessor chips have added new dimensions to the scenario. With the introduction of ‘Cyber Cash’, the exchange of cash takes place entirely through ‘Cyber-books’. Collection of Electricity bills and telephone bills has become easy. No doubt, banking services have undergone drastic changes and so the expectation of customers from the banks has also increased to a great extent.

1.2. THE ORIGIN OF BANKING SECTOR

The origin of banking can be traced to ancient times, starting with simple money lending and exchange practices for agricultural and other commodities. But it
gained great momentum only after the Industrial Revolution which commenced in Europe in the 17th century, when Europeans started establishing colonies around the world and the need for credit for trade was felt like never before. Ever since banks started operating, their essential mode of operation remained much the same until late 20th century. But the arrival of Internet in the 1990s changed everything. A plethora of possibilities emerged for worldwide commerce, which naturally impacted the functioning of banks as well. Even now, evolution of technology shapes the nature and extent of global economic activity and continues to fundamentally alter the global banking landscape.¹

The year 1995 marked the beginning of the Internet banking era, when Wells Fargo began offering account statements on the Web and Security First Network Bank became the first Internet-only bank.² In its early years, adoption of Internet technology by banks was slow, customer’s use of Internet banking was marginal, and many bankers questioned whether it could ever live up to its promise. Analysts view the year 2000 as a breakout year for Internet banking.³

Estimates put the number of households using online banking at a surprising 12.5 million in 2000, up from 7.5 million in 1999. For many banks, use of the Internet to solicit customers and deliver bank services has proceeded from a curiosity to a necessity. After six years of experience, there is little systematic information available to address important questions concerning the challenges, opportunities, and performance of the Internet operations of banks.⁴

The Software Packages for Banking Applications in India had their beginnings in the middle of 80s, when the Banks started computerizing the branches in a limited manner. The early 90s saw the reduction in hardware prices and advent of cheap and inexpensive but high powered PC's and Services. Banks slowly moved towards Total
Branch Automation (TBA) packages. The middle and late 90s witnessed the tornado of financial reforms, deregulation, globalization, etc. coupled with rapid revolution in communication technologies and evolution of novel concept of convergence of communication technologies, like Internet, mobile/cell phones, etc. Technology has continuously played an important role in the operations of banking institutions and the services provided by them.

1.2.1 THE IMPACT OF IT REVOLUTION

Automation in banking enhanced the customer services, reduced manpower cost and increased profitability. Apart from normal banking products, Indian banks started selling third party products such as Mutual Funds and Insurance policies to their clients as well. This single window sale saved the customers time and enabled the bank to enrich the relationship. The Reserve Bank of India, India’s Central Bank, not to be left behind, played its part in this transformational journey, by issuing regulations and recommendations on banking mechanization and computerization. Establishment of computerized inter-connectivity across bank branches, introduction of MICR based cheque clearance, modernization of payment services and settlements through Electronic Clearing Services (ECS), Real Time Gross Settlement System (RTGS), National Electronic Fund Transfer (NEFT), were all significant landmarks in the banking technology revolution.

1.2.2 TECHNOLOGY ADOPTION

Adoption of a new technology is often expensive (Hall and Khan, 2003)\(^5\). The observable determinants of new technology adoption are the benefits gained by the user and the costs of adoption. These benefits are simply the difference in profits
when an organization migrates from an older technology to a new one. In the case of customers, the benefits vary from decreased costs and increased productivity to better processes. However, these benefits may also include such “non-economic” factors as the satisfaction of being the first on the block to be converted from the older technology to the new one.

The adoption of new technology has made the banks to re-engineer processes, network branches and introduce alternate delivery channels such as internet banking, phone banking and mobile banking, data warehousing and data mining, customer relationship management, integrated treasury management, human resource management and the implementation of core banking solutions. The basic technology adoption is almost complete and banks are now looking at improving the efficiency and effectiveness of the IT Infrastructure created. Newer areas of technology initiatives are enterprise risk management, business intelligence, improving internal effectiveness and managing IT risks.

1.2.3 CURRENT TREND

Virtual banking or direct banking is now gaining ground. This model, where in banks offer products, services and financial transactions only through electronic delivery channels, generally without any physical branch, has already been tested out in advanced countries such as United States and Europe. More and more customers are already moving to non-branch banking and the direct banking trend will surely catch up India as technology-savvy banks adopt this model. Though it may appear to save the bank a lot of overheads, in reality, the customer never needs to visit a bank branch, either for completing the account opening process or the subsequent financial activities actually throws up new challenges.
The power of technology makes it happen seamlessly and virtually, but customer satisfaction is something which calls for a human touch, for all their technological sophistication, virtual banking should be hassle-free and most offer pleasurable experience for the use. Banks adopt new technologies, two things stand out—using less paper and doing transactions wirelessly. In the last few years many banks in India have implemented content management solutions and succeeded in conducting paperless transactions using the imaging and workflow capabilities of such software. Automated handling of service requests with proper documentation and tracking facilities has significantly reduced turnaround time also.

1.3 STATEMENT OF THE PROBLEM

Information Technology is one of the most important facilitators for the transformation of the Indian banking industry in terms of its transactional process as well as for various other internal systems and processes. The various technological platforms used by banks for their day-to-day operations, their manner of reporting and the way in which inter-bank transactions and clearance are affected has evolved substantially over the years. The technological evolution of the Indian banking industry has been largely directed by the various committees set up by the RBI and the Government of India to review the implementation of technological change. No major breakthrough in technological implementation was achieved by the industry till the early 80s, though some working groups and committees made stray references to the need for mechanization of some banking processes. This was largely due to the stiff resistance by the strong bank employees unions.

The early 1980s were instrumental in the introduction of mechanisation and computerisation in Indian banks. This was the period when banks as well as the RBI
went very slow on mechanisation, carefully avoiding the use of ‘computers’ to avoid resistance from employee unions. However, this was the critical period acting as the icebreaker, which led to the ‘slow and steady’ move towards large scale technology adoption. Technology based services provided various benefits to the bankers as well as customers. Now-a-days it is easier for the customers to do most of their transactions without visiting to the bank itself or approaching the employees of the bank. This is possible with the advent of Electronic Banking. Customers of today are computer – savvy, more demanding and time - conscious.

Introduction with the advancement of information technology and to derive the inherent advantages of its implementation, there was a long felt need to give recognition to the electronic media as an alternative to paper - based banking practice in India. The evolution of banking technology has been mainly driven by changes in distribution channels as Automated Teller-Machine (ATM), phone-banking, tele-banking, pc-banking and most recently internet banking, etc. In the traditional banking system, a person had to go to a bank branch to deposit or withdraw money and get a bank statement book manually updated by a teller over the counter. With the introduction of computer networks, a networked printing machine started replacing the manual update of statements. Then ATMs were introduced to facilitate withdrawals, deposits and even transfers accommodating mobility in much wider geographical areas. Phone banking was a revolutionary concept in banking since it made banking accessible from anywhere as long as phones and internet are available. With the successful diffusion of mobile phones, phone banking is moving into the next phase of development. However, one of the most substantial changes in banking technology is the recent introduction of internet banking.
They demand global standard of services and make comparisons and they expect to be empowered through self service channels. So the banks are compelled to computerize their branches. This necessitates a systematic investigation into the issues related to computerization of banking industry in Thoothukudi district. Technology based service of the Banking industry poses many challenges in the selection of suitable computer system, using the apt application and packages training of the personnel for the operation of computer. The banks in Thoothukudi district are also working hard with a maze of problems related to manual work. So the researcher opted to study the extent of impact of technology based services in commercial Banks in Thoothukudi district. Thoothukudi is one of the first ranking industrial districts in Tamilnadu. More than five hundred units of different industries are situated in and around the district.

1.4 OBJECTIVES OF THE STUDY

The following are the main objectives of the present study:

1) To examine the growth and development of information technology based services of Indian banks.

2) To analyse the socio - economic profile of the respondents and their opinion about e-banking services and satisfaction towards technology based services of commercial banks.

3) To analyse the opinion of the managers of the commercial banks about the adoption of technology based services and e-CRM in their banks.

4) To offer suitable suggestions for the adoption of technology based services than the existing level based on the findings of the study.
1.5 SCOPE OF THE STUDY

The banking system is slowly shifting from the traditional banking towards relationship banking. Traditionally the relationship between the bank and its customers has been on a one-to-one level via the branch network. This was put into operation with clearance and decision-making responsibilities concentrated at the individual branch level. The head office had responsibility for the overall clearance network, the size of the branch network and the training of staff in the branch network. The bank monitored the organization's performance and set the decision-making parameters, but the information available to both branch staff and their customers was limited to one geographical location. Moreover the study area is crowded with more number of manufacturing units which export their products all over the world. To improve the flow of cash form bank to customers and vice versa through development activities, the technology-based banking services are more important for the customers of this district. The researcher has found scope in these aspects and made a detailed study.

1.6 HYPOTHESES

The following hypotheses are framed for the study to fulfill the above objectives.

- There is no significant association between the socio-economic profile of the respondents and their satisfaction towards technology based services.
- There is no significant association between the socio-economic profile of the respondents and their opinion about various dimensions of technology-based services of commercial banks.
- There is no significant association between the experience of the managers, bank details and their opinion about adoption of technology-based services.
There is no significant association between the experience of the managers, bank details and their opinion about adoption of e-CRM.

There is no correlation between the various dimensions of technology-based services.

There is no correlation between the various dimensions of adoption technology-based services and e-CRM.

1.7 METHODOLOGY

The present study is both descriptive and analytical in nature. The following part describes the methodology designed for the present study which covers the sources of data, research instrument, pilot study, reliability test, area of the study and sampling technique.

1.7.1 SOURCES OF DATA

The present study is based on both primary and secondary data. Primary data were collected from the selected customers and managers of the selected commercial banks of Thoothukudi District using well-structured interview schedule and questionnaire. Secondary data were collected from Books, Journals, Reports and Websites.

1.7.2 RESEARCH INSTRUMENT

The researcher has designed interview schedule and questionnaire which are used for achieving the objectives of the study to collect primary data from the customers and managers.

The interview schedule used for the customers consists of two parts. The first part of the interview schedule which is constructed for customers, gathers the required socio-economic variables of the selected customers like gender, age, educational
qualification, occupation, monthly income, type of bank, experience, type of account, usage of cards, reasons for the usage of plastic cards and the like. The second part captures the details regarding opinion of the customers about their satisfaction towards technology - based services, and opinion about various dimensions of technology - based services like accessibility, reliability, efficiency, awareness, innovation, trust and loyalty and security and privacy.

The questionnaire used for the managers of the selected commercial banks also has two parts. The first part of the covers experience, type of technology - based services offered, promotional measures, methods of evaluation of customers, and type of technology used for retention and interaction of customers. The second part captures the details regarding opinion of the managers about adoption of technology based services like bank mechanisation, electronic - based payment system, security measures, growth and development, benefits, and earnings. Another part gathers the dimensions of opinion of the managers about the e-CRM like use of technology, corporate strategy and organisation culture and service quality. The face and content validity of the questionnaire is finalised after making consultation with the managers of the banks and experts of the related area. Based on their feedback and opinion, changes are made in the questionnaire and then questionnaire is finalised for collection of data.

1.7.3 PILOT STUDY

After finalising the interview schedule and questionnaire, pilot study was conducted. After finalizing the number of items in the research instrument pilot study was undertaken to assess the reliability of the variables constructed under various dimensions of opinion about technology - based services, adoption of technology and e-CRM. Reliability test is made to measure the validity of the data collected during the pilot study.
1.7.4 RELIABILITY TEST

The variables constructed under various dimensions in the interview schedule and questionnaire is subject to reliability test. The researcher has applied Cronbach Alpha reliability test to measure the internal consistency of the instrument and the result of the reliability test is presented in the following table.

**TABLE 1.1**

RESULT OF RELIABILITY TEST - CRONBACH ALPHA

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Dimensions</th>
<th>Reliability coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Satisfaction towards technology based services</td>
<td>0.690</td>
</tr>
<tr>
<td>2.</td>
<td>Accessibility</td>
<td>0.832</td>
</tr>
<tr>
<td>3.</td>
<td>Reliability</td>
<td>0.761</td>
</tr>
<tr>
<td>4.</td>
<td>Efficiency</td>
<td>0.846</td>
</tr>
<tr>
<td>5.</td>
<td>Awareness</td>
<td>0.831</td>
</tr>
<tr>
<td>6.</td>
<td>Innovation</td>
<td>0.725</td>
</tr>
<tr>
<td>7.</td>
<td>Trust and Loyalty</td>
<td>0.654</td>
</tr>
<tr>
<td>8.</td>
<td>Security and privacy</td>
<td>0.703</td>
</tr>
<tr>
<td>9.</td>
<td>Bank mechanisation</td>
<td>0.684</td>
</tr>
<tr>
<td>10.</td>
<td>Electronic based payment system</td>
<td>0.751</td>
</tr>
<tr>
<td>11.</td>
<td>Security measures</td>
<td>0.790</td>
</tr>
<tr>
<td>12.</td>
<td>Growth and development</td>
<td>0.715</td>
</tr>
<tr>
<td>13.</td>
<td>Opinion about benefits</td>
<td>0.735</td>
</tr>
<tr>
<td>14.</td>
<td>Earning through cards</td>
<td>0.684</td>
</tr>
<tr>
<td>15.</td>
<td>Use of technology</td>
<td>0.694</td>
</tr>
<tr>
<td>16.</td>
<td>Corporate strategy</td>
<td>0.870</td>
</tr>
<tr>
<td>17.</td>
<td>Organisational culture</td>
<td>0.745</td>
</tr>
<tr>
<td>18.</td>
<td>Service quality</td>
<td>0.772</td>
</tr>
</tbody>
</table>

*Source: Computed Data*

From the above result of Cronbach Alpha reliability test, it is found that the reliability coefficients for the variables designed for the study are more than 0.60, which
is an acceptable level. So, the item constructed under each variable has reasonable internal consistency and it is found that the collected data are normally distributed.

### 1.7.5 AREA OF STUDY

The respondents of the present study are customers and managers of the selected commercial banks in Thoothukudi District. The main reason for choosing this district for the study is that there is vast scope for conducting research on the present topic. The industrial based district has motivated the researcher to undertake this study.

### 1.7.6 SAMPLING TECHNIQUE

The researcher has selected both public and private sector banks for the present study. Commercial banks which are functioning with fully computerised branches are classified. Based on the classification, five public sector banks namely State Bank of India, Canara bank, Indian Overseas Bank, Indian Bank and Central Bank of India and four private sector banks namely ICICI bank, Tamilnad Merchantile Bank Ltd, Karur Vysya Bank and Axis Bank are selected for the study. These nine commercial banks are functioning in the study District with total number of 135 branches. 675 customers i.e., five customers from each bank were selected by using snowball sampling technique and managers of all 135 banks were selected for the study. The details of the sampling are presented in the following table 1.2.
TABLE 1.2
DETAILS OF SAMPLE SIZE

<table>
<thead>
<tr>
<th>S.No</th>
<th>Category of banks</th>
<th>No.of Branches</th>
<th>No. of Customers</th>
<th>No.of Managers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>State Bank of India</td>
<td>19</td>
<td>95</td>
<td>19</td>
</tr>
<tr>
<td>2.</td>
<td>Canara Bank</td>
<td>25</td>
<td>125</td>
<td>25</td>
</tr>
<tr>
<td>3.</td>
<td>Indian Overseas Bank</td>
<td>32</td>
<td>160</td>
<td>32</td>
</tr>
<tr>
<td>4.</td>
<td>Indian Bank</td>
<td>10</td>
<td>50</td>
<td>10</td>
</tr>
<tr>
<td>5.</td>
<td>Central Bank of India</td>
<td>12</td>
<td>60</td>
<td>12</td>
</tr>
<tr>
<td>6.</td>
<td>ICICI Bank</td>
<td>4</td>
<td>20</td>
<td>4</td>
</tr>
<tr>
<td>7.</td>
<td>Tamilnad Merchantile Bank Ltd.,</td>
<td>29</td>
<td>145</td>
<td>29</td>
</tr>
<tr>
<td>8.</td>
<td>Karur Vysya Bank</td>
<td>3</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>9.</td>
<td>Axis Bank</td>
<td>1</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>135</strong></td>
<td><strong>675</strong></td>
<td><strong>135</strong></td>
</tr>
</tbody>
</table>

Source: Bank records

1.7.7 FIELDWORK AND COLLECTION OF DATA

The researcher carried out the fieldwork for collection of primary data. The data collection period covers six months from October 2013 to March 2014. The researcher has used interview schedule and questionnaire method (Annexure – I and Annexure – II) for collection of primary data from the selected 675 customers and 135 managers.

1.7.8 DATA PROCESSING

After the completion of data collection, filled - up interview schedule and questionnaire were edited and master table is prepared to incorporate all the information gathered from the 675 customers and 135 managers. The gathered data are analysed through SPSS.
1.8 TOOLS OF ANALYSIS

Since the data collected for the present study are normally distributed, the researcher has decided to use the following tools for analysis.

1. Independent Sample ‘t’ test
2. ANOVA - One way and Scheffe test
3. MANOVA
4. Chi square test
5. Correlation
6. Discriminant analysis

1.8.1 INDEPENDENT SAMPLE ‘t’ TEST

Independent Sample ‘t’ test is used to determine, if the means of the two sample distribution differ significantly from each other. It compares the means of two different samples. In the present study, to compare the variables like gender, marital status with opinion and problems faced, ‘t test’ is used.

1.8.2 ANOVA

The ANOVA test is used to determine the impact of independent variables on the dependent variables. The one-way Analysis of Variance (ANOVA) is used to determine whether there are any significant differences between the means of three or more independent (unrelated) groups. The three-way ANOVA is grounded in the idea that there are three variables, referred to as factors, affecting the outcome of the dependent variable. A three-way ANOVA test analyzes the effect of the independent variables on the expected outcome along with their relationship to the outcome itself.
1.8.3 MANOVA

MANOVA variations are used in somewhat different applications, they all have one feature in common and they form linear combinations of the dependent variables which best discriminate among the groups in the particular experimental design. In other words, MANOVA is a test of the significance of group differences in some m-dimensional space where each dimension is defined by linear combinations of the original set of dependent variables.

1.8.4 CHI SQUARE TEST

A chi-squared test, also referred to as chi-square test or $\chi^2$ test, is an statistical hypothesis test in which the sampling distribution of the test statistic is a chi-squared distribution when the null hypothesis is true. Also considered a chi-squared test is a test in which this is asymptotically true, meaning that the sampling distribution (if the null hypothesis is true) can be made to approximate a chi-squared distribution as closely as desired by making the sample size large enough.

The value of the test-statistic is

$$\chi^2 = \sum_{i=1}^{n} \frac{(O_i - E_i)^2}{E_i}$$

where

$\chi^2 = $ Pearson's cumulative test statistic, which asymptotically approaches a $\chi^2$ distribution.

$O_i = $ an observed frequency;

$E_i = $ an expected (theoretical) frequency, asserted by the null hypothesis;

$n = $ the number of cells in the table.
Chi-squared distribution, showing $\chi^2$ on the x-axis and P-value on the y-axis.

The chi-squared statistics can then be used to calculate a p-value by comparing the value of the statistic to a chi-squared distribution. The number of degrees of freedom is equal to the number of cells, $n$, minus the reduction in degree of freedom, $P$.

1.8.5 CORRELATION

The word correlation refers to a relationship between two variables. The common usage of the word correlation refers to the relationship between two or more objects such as ideas, variables and the like. Correlation measures the strength of the relationship between two variables, x and y. A correlation greater than 0.8 is generally described as strong, whereas a correlation less than 0.5 is generally described as weak. These values can vary based upon the "type" of data being examined. A study utilizing scientific data may require a stronger correlation than a study using social science data.

1.8.6 DISCRIMINANT ANALYSIS

Discriminant function analysis is a statistical analysis to predict a categorical dependent variable (called a grouping variable) by one or more continuous or binary independent variables (called predictor variables). It is different from an ANOVA or MANOVA, which is used to predict one (ANOVA) or multiple (MANOVA) continuous dependent variables by one or more independent categorical variables. Discriminant function analysis is useful in determining whether a set of variables is effective in predicting category membership. Discriminant analysis is used when groups are known a priori (unlike in cluster analysis). Each case must have a score on one or more quantitative predictor measures, and a score on a group measure. In simple terms, discriminant function analysis is classification - the act of distributing
things into groups, classes or categories of the same type. In the present study, this function is used to measure the opinion about efficiency of the technology-based services of the commercial banks.

1.9 PERIOD OF THE STUDY

The present research work covers the period of 2013 - 2014 for primary data.

1.10 SCHEME OF CHAPTERISATION

The present study is presented in six chapters.

This first chapter covers the introduction and design of the study. The design includes introduction, statement of the problem, objectives of the study, hypotheses, sample design, methodology, tools used for analysis and scheme of chapterisation.

The second chapter presents the reviews analyzed and examined for the present study and research gap is identified.

The third chapter concentrates on the growth and development of technology-based services of commercial banks in India.

The fourth chapter analyses the customers’ attitude towards service quality of technology-based services. Association between socio-economic profile of the selected customers and their opinion about the technology-based services of commercial banks and satisfaction towards the services are analysed.

The fifth chapter analyses the selected commercial banks managers’ opinion about the reason for adopting technology based services in their commercial banks and opinion about adoption of e-CRM in detailed manner.

The sixth chapter highlights the important findings of the study with suitable suggestions for the effective functioning of commercial banks in Thoothukudi district.
END NOTES


Websites

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2. www.banknetindia.com

3. www.thehimalayantimes.com

4. www.wikipedia.com