E-Banking Adoption: A Study Of Electronic Service Quality In Electronic Environment

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Abstract

Banking is one service that is information intensive and an ideal centre for successful development of e-commerce because it provides the opportunity to use the internet and ecommerce to facilitate quick business transactions that results in customer satisfaction. Electronic banking is the newest delivery channel in many developed countries and there is a wide agreement that the new channel will have a significant impact on the bank market. Internet banking offers the traditional players in the financial services sector the opportunity to add a low cost distribution channel to their numerous different services. In India, slowly but steadily, the Indian customer is moving towards Internet banking. But they have concerns about security of E-banking.

Keywords: ICT, Privacy, Security, Risk, Trust

1. Introduction

Information and communications technologies (ICTs) have changed the way of conducting business transactions and meeting the growing demands of customers for most organizations. One of the significant forces and dynamic change that is occurring in the universal business environment today is technology, and this brings in new products, service market opportunities and developing more information system that is business oriented and supports management processes such as planning, controlling and co-ordination.

Banking is one service that is information intensive and an ideal centre for successful development of e-commerce because it provides the opportunity to use the internet and ecommerce to facilitate quick business transactions that results in customer satisfaction. For the banks, technology has emerged as a strategic resource for attaining efficiency, control operations, productivity and profitability. But on the part of customers, the underlying factors are anytime, anywhere and anyway banking transactions, and these have caused the banks to welcome technology so as to meet the increasing customer expectations.

A new era of banking, termed "e-banking" or "Internet banking" has emerged, where customers can perform their financial transactions electronically over the internet through their personal computer or laptop at a time convenient to them, without having to be restricted to regular branch operating hours. Furthermore, customer is expected to perform at least one of the following transactions online, namely viewing account balance and transaction histories, paying bills, transferring funds between accounts, ordering cheques, managing investments and stock trading.f Electronic banking is a high-order construct, which consists of several distribution channels. It should be noted that electronic banking is a bigger platform than just banking via the Internet. However, the most general type of electronic banking in our times is banking via the Internet, in other words Internet banking.

1.1 Internet Banking Benefits

E-banking reaps benefits for both banks and its customers. From the bankers' perspective, e-banking has enabled banks to lower operational costs through the reduction of physical facilities and staffing resources required, reduced waiting times in branches resulting in potential increase in sales performance and a larger global reach. From the customers' perspective, e-banking allows customers to perform a wide range of banking transactions electronically via the bank's website anytime and anywhere.

Advantages of online banking:

- It's very easy to set up an account. With most plans, you can do this totally online, avoiding all paperwork.
- You can access your account information anytime; day or night, and you can do it from anywhere. A few online banks update information in real-time, while others do it daily.
- Once information has been entered, it doesn't need to be re-entered for similar subsequent checks, and you can even schedule future payments to occur automatically.
- The fees tend to be about the same as with a typical checking account, but it works out to be cheaper since you don't have to pay for the stamps. As online banking continues to gain in popularity, the fees should diminish, since the banks will be able to pass to their customers the money they'd otherwise be spending on real estate and tellers.

1.2 E-Service Quality

In Business-to-Consumer (B2C) electronic commerce companies and customers engage in commerce via Internet-based technologies; this has generated a need to understand why internet users do or do not participate in ecommerce. Online companies' knowledge about user expectations can lead to a competitive strategy to seek profitable approaches to differentiation. Thus, in the current online competitive environment, exploring a new way to increase customer loyalty is closely connected to the issue of electronic service quality.

2. Literature Review

Information technology has emerged as a strategic resource for achieving higher efficiency, control of operations, productivity and profitability in banking operations. Therefore, banks in India are increasingly embracing information technology to meet the increasing customer expectations and face the galloping competition. The incredible growth of Internet is changing the way corporations conduct business with consumers **(Siu and Mou, 2005)**. It has not only created opportunities for businesses to reach out to consumers directly but also allows consumers an immediate access to the electronic markets.

The impact of Internet on the economic growth and business performance has been the subject of many studies in the past (**Venkatraman, 2000**). However, most of the online service providers find it difficult to manage service quality in electronic markets because of lack of exposure to this new medium of business operations and their limited knowledge of online consumer behaviour (Mols, 2000). The banking industry is no exception. Today, all the private, public sector and foreign banks in India are offering their services over Internet. Internet banking is both convenient and time saving in comparison to traditional retail banking experience.

Technology has played an extraordinary role on the growth of service delivery options and a deep effect on service marketing (Bitner et al., 2000). Banks are increasing their technology based service options so as to develop sustainable competitive advantage and this increase in technology adoption has resulted in: reduced costs, the creation of value added services for customer, the facilitation of their employees' jobs and ultimately, the provision of self-service options for customers.

According to the Santos, J. (2003), in response to competitive pressure in the banking industry, banks continued to make significant investments in upgrading information technology platforms by automating and centralizing various back office activities to enhance the quality of service delivery to their customers. In 2008, Standard Chartered Bank upgraded their banking application software. In response to the increasing role of ICT in banks' service delivery, BOG published guidelines on branchless banking to allow collaboration between banks, telecommunication companies and merchants to provide greater access to banking and financial services to the wider public. Banks' deposits and borrowings were used to fund the growth in assets. Total assets of the banking industry grew on an annual basis by 46.2 per cent to 7,807.0 million, compared with 38.1 per cent growth for same period in 2007. Net loans and advances had reached 868.7 million, recording an annual growth of 59.2 per cent compared with growth of 37.6 per cent a year earlier.

Traditionally, service quality (SERVQUAL) is conceptualized in service literature as the consumer's judgment about an entity's excellence or superiority. It is a type of attitude and involves tangibility, reliability, responsiveness, communication, credibility, security,

competence, courtesy, understanding/knowing the customer, and access. Based on these traditional service quality elements, e-SERVQUAL includes additional service functions derived from the online market: presale (the online retailer's efforts to provide product-related information to reduce customer's search cost), online sales (customer's purchasing activities), and after sales (delivery and problem solution). For instance, it was proposes e-commerce SERVQUAL as system quality of website design and interactivity, information quality of informativeness and security, and service quality of responsiveness, trust, and empathy.

E-Banking is also called Internet banking, on-line banking or PC banking (Mobarek, 2007). Internet banking as a new alternative channel to distribute financial services has become important to remain competitive in the market. Pikkarainen et al., 2004 (as cited in Nupur, 2010) define internet banking as an "Internet portal, through which customers can use different kinds of banking services ranging from bill payment to making investments". Stone, 2003 (as cited in Mobarek, 2007), have said that the internet deals with a large number of varied financial transactions like customer payments, securities transactions applications for loans or insurance acquisitions.

With the advent of the internet, the growth of internet-based services has changed the way firms and consumers interact. E-service has been an interesting and important area to scholars and practitioners alike. E-service has been defined as a web-based service or an interactive service that is delivered on the internet (Zeithaml et al., 2000). Rowley (2006) conceptualises e-service as deeds, efforts, or performances whose delivery is mediated by information technology. Service quality (SQ) has received a great deal of attention in the literature from both scholars and practitioners in business. Many studies have established that SQ is a crucial driver of satisfaction (Lovelock &Wirtz, 2007), profitability (Heskett, Sasser& Schlesinger, 1997), and a key competitive advantage for modern business firms (Kotler& Keller, 2006; Kotler (2000). Indeed SQ is not just a corporate offering, but a competitive weapon which is necessary for corporate profitability and survival.

Service quality and customer satisfaction are inarguably the two core concepts that are at the crux of the marketing theory and practice. Satisfaction can be defined as "Customer satisfaction is a collective outcome of perception, evaluation and psychological reactions to the consumption experience with a product/service" (Yi, 1999, as cited in Saha and Zoha, 2005). Yang (2001) argues that customers reach satisfaction decisions by comparing the performance a product or service with their prior expectations. If performance exceeds the expectation positive disconfirmation occurs and increases in satisfaction can be expected to take place, (Yang and Fang, 2004 and Brar 2016). On the other hand, if performance shortfalls the expectation negative disconfirmation occurs and consequently satisfaction would be decreased.

3. Research Methodology

3.1 Scope of the Study

In terms of scope of the study, research can be a categorized as statistical study or case study. A statistical study is one that focuses on the breadth of an issue by testing hypothesis quantitatively upon which generalizations are made about the entire population. Case study on the other hand involves a study that focuses on an in-depth contextual analysis of few events. In case study the researcher decides which population or its sections or aspects to study. This study is a statistical study because it is focused specifically on customers' perceptions of E-Banking service quality.

3.2 Population and Sampling

The target population consists of 77 E-banking customers. In selecting the 77 respondents, a purposive sampling method was used to consciously select customers who meet the criteria of having used E-banking services for the past one year. We limited our sampling frame so data collection was conducted in selected areas of Punjab, from the June 2017 to the March 2018.

4. Analysis and Results

Firstly demographic details of respondents have been analyzed to find the rate of each characteristic. This was done to find out the impact of demographic on other related research factors on E-service quality of electronic banking provided by banks. This analysis will help us to understand the different viewpoints of respondents on electronic service quality electronic banking with different demographic characteristics. In the next step, effect of each variable on others has been analyzed. At the end, the factor analysis has been applied to examine how different factors may affect the perception of customers on electronic service quality.

Table 1: Demographic details of respondents

Group	Sub-group	Number
Gender	Male	45
	Female	32
Age	Less than 25 years	9
	25-35 yrs	44
	36-45 yrs	15
	46-55 yrs	5
	55 and above	4

Above table shows the demographic details of respondents. In the above table gender, age and education are collaborated in a single table.

4.1 Cluster analysis

This section is developed for the formation of different clusters, which have been developed out of the given sample of the respondents by analyzing their responses towards providing better electronic service quality of internet based banking services. The cluster analysis technique has been employed to differentiate the respondents into various groups on the basis of their psychographic tendencies, perceptions and various concerned issues in electronic service quality.

4.1.1 Application of K-Mean Cluster Analysis

The general objective of cluster analysis is to participate, or sub-divide, a set of objects into homogeneous sub-groups, or into a hierarchical arrangement of homogenous sub-groups, so as to determine the characteristics specific for each cluster. In the present study to segment our respondents K-Mean cluster analysis has been used. This procedure attempts to define homogeneous groups of cases based on selected characteristics, using an algorithm that can handle large number of cases. The object of k-means analysis is to arrive at a cluster solution for which each case is closer to the mean of the cluster to which it belongs than to the mean of any other cluster. K-Mean cluster analysis needs to assign cases to a fixed number of grouped whose features are not yet known but are based on a set of specified variables.

Table 2 shows the final cluster centers forming two clusters on the basis of the psychographics of the respondents for the given 6 statements. To check the variations among two clusters for the means of the variables in each of the clusters, ANOVA statistic has been employed to test the null hypothesis.

Hypothesis: There is no significance variation between the responses of the respondents belonging to different groups regarding the various aspects of electronic service quality.

Table 2: Final Cluster Centers

Sr. No.	Statements	Clusters	
		1	2
1	Difference between electronic service quality of different banks	5	5
2	Service quality of traditional banking system is better	6	4

3	Internet banking provides accurate service quality	8	6
4	Internet banking is easy to use	8	7
5	There are security issues in E-banking services	6	7
6	Issues in privacy and reliability of online transactions	7	8
	Number of Cases in each Cluster	40	37

Table 2 shows the two groups developed out of the responses of the selected respondents. Based on the response, the characteristics of the respondents assumed to be homogeneous within each group or cluster, i.e. cluster one is separate from the second cluster. The clusters were explained on the basis of the responses, within each cluster for the given variables. In order to define clusters, corresponding means for two different clusters centres were considered. The inclination of mean values of the Likert scale ranging from 1 to 5 was used to define the strength of agreement/disagreement against each variable and it formed the basis of explaining the clusters.

Cluster1: Cluster one consists of 40 respondents who are either agreed with the given statements or not sure about few statements. Respondents found in this cluster were moderate in their attitude towards electronic service quality in E-banks. In this cluster respondents had shown positive attitudes but at the same time they were not sure as well as agreed with the negative aspects of E-service quality. Respondents in this cluster showing slightly favorable and positive response for E-service quality of banks. There are some positive aspects like E-banking provides accurate service quality, E-banking is easy to use. Towards the adverse effects of E-service quality of banks, the responses received were generally near to neutrality (not sure) or at some times with slightly level of agreement towards the negative effects. So it can be found that respondents were indifferent to the negative aspects of E- service quality. This was derived after observing the mean values corresponding to the variables of difference between electronic service quality of different banks, service quality of traditional banking system is better, security issues in E-banking services, issues in privacy and reliability of online transactions.

Cluster 2: 37 respondents found in this cluster were negative in their attitude towards E- service quality of banks. This was observed from the mean values corresponding to different variables given in above table. With regard to the favorable aspects of E- service quality, the respondents had given indifferent feeling; this was inferred from the mean values corresponding to each of the variables. It can be said that respondents in this cluster having indifferent/non-confirming attitude towards the favorable aspects of E- service quality and hence can be said more inclined towards the negative viewpoint of the practices of E- service quality.

Table 3 indicates ANOVA statistics calculated in respect of each variable for the motive of measuring the variation among the two identified clusters. This was done in order to test the hypothesis. ANOVA statistics indicate there is a significant variation among the two clusters. Since all the F-values were greater than three (Table value), **hence the hypothesis is rejected for all the variables, this means there is a variation between two clusters as far as selected 6 statements are concerned.**

Table 3: ANOVA Statistic (one way)

Statements	Cluster		Error		F	Sig.
	Mean Square	Df	Mean Square	df		
Difference between electronic service quality of different banks	178.932	1	1.859	336	143.320	.000
Service quality of traditional banking system is better	365.789	1	1.441	336	221.657	.000
Internet banking provides accurate service quality	143.876	1	1.678	336	87.139	.000
Internet banking is easy to use	172.435	1	1.872	336	132.127	.000
There are security issues in E-banking services	167.877	1	1.693	336	91.229	.000
Issues in privacy and reliability of online transactions	395.564	1	1.767	336	147.760	.000
The F tests should be used only for descriptive purposes because the clusters have been chosen to maximize the differences among cases in different clusters. The observed significance levels are not corrected for this and thus cannot be interpreted as tests of the hypothesis that the cluster means are equal.						

The ongoing analysis indicates that the selected respondents were from different groups as far as their psychographic tendencies towards the acceptability of E-service quality of banks phenomenon are concerned. K-means cluster analysis technique applied observe two distinct clusters which had been identified on the basis of final cluster centres (mean values for the variables). These two clusters revealed two sets of the respondents who were different from one another as far as their acceptability dependent upon their attitudes. The cluster one represented a group of respondents who were classified as moderate as they showed moderate behaviour of acceptance towards the positive aspects of E-service quality. As far as some related issues are

concerned, these respondents were not much against such practices. The second cluster had respondents who were having negative/indifferent feelings for E-service quality of banks.

In a nutshell, it can be said that the two clusters formed revealed two groups with varying levels of acceptance towards E-service quality of banks. These are: cluster one representing the respondents who are indifferent (not much affected) towards E-service quality of banks and cluster two representing the respondents who are negative (adversely affected) towards E-service quality of banks. ANOVA statistics reveal that the two clusters vary significantly amongst each other with respect to the different variables pertaining to E-service quality.

5. Conclusions, Findings and Future Work

The main purpose of this study is to evaluate customer satisfaction with internet banking service quality in selected areas of Punjab, India. Specifically, this study evaluate the customer satisfaction/dissatisfaction regarding dimensions of internet banking service quality and identify and prioritize the dimensions of the service quality with internet service quality and to determine whether overall satisfaction with internet banking service quality differs.

5.1 Major findings

Cluster centers were formed for two clusters on the basis of the psychographics of the respondents for the given statements. To check the variations among two clusters ANOVA statistic has been employed to test the null hypothesis i.e. there is no significance variation between the responses of the respondents belonging to different groups regarding the various aspects of electronic service quality. But null hypothesis was rejected. In a nutshell, it can be said that the two clusters formed revealed two groups with varying levels of acceptance towards E-service quality of banks. These are: cluster one representing the respondents who are indifferent (not much affected) towards E-service quality of banks and cluster two representing the respondents who are negative (adversely affected) towards E-service quality of banks. ANOVA statistics reveal that the two clusters vary significantly amongst each other with respect to the different variables pertaining to E-service quality.

5.2 Conclusions

- The management of the bank could influence customer overall satisfaction by focusing attention on these four items, which are:
  a. Easy completion of online transactions,
  b. Easy understanding which button to be clicked for the next step,
  c. Ability of this internet portal in helping customer to complete a transaction quickly,

d. Sufficient and real time financial information provided by the internet banking portal site.

Bank management should focus and give priority to these items in providing internet banking services to its customers:

a. Relief of customer to transact on the portal,

b. Accuracy of the online transaction process,

c. Complete and sufficiency of the information provided,

d. Protection of customer transaction data,

e. Reliability and credibility of transactions,

f. Ease of completion of online transactions,

g. Ease of understanding which button to be clicked for the next step, and

h. Sufficient and real time financial information provided.

5.3 Recommendations for future research

It is recommended that future research could use different methodology such as different regions that may involve different sections of society for instance business customers and focus on extending the study across different categories of banks in different countries and in different service contexts. In this regard the following areas could be studied:

A. The impact of internet banking service quality on satisfaction and behavior intentions.

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