

## Investigating the Effect of Electronic Banking Systems on Customer Satisfaction in Tehran

Mohammad Aghaei<sup>1</sup>, Rahman Biglar<sup>2</sup>, Mohammad Mehdi Jamshidian<sup>3</sup>, Amin Asadollahi<sup>4</sup>

<sup>1</sup>Assist Prof, Department of Business Management, Branch, Shahid Beheshti University (SBU), Tehran, Iran

<sup>2,3</sup>Department of Management and Accounting, Allameh Tabatabaai University, Tehran, Iran

<sup>4</sup>Department of Business Management, Science and Research Branch, Islamic Azad University, Tehran, Iran

---

### ABSTRACT

Electronic business, electronic commerce and electronic banking, which were established in the mid-1990s, have changed individuals' attitude toward organizations and have created a major change in different aspects of human life and organizational performance. Recently, Iranian banks, in an attempt to attract customers and increase their satisfaction to sustain their productivity and efficiency, have taken several steps in the field of electronic services. The purpose of this study is to explore the degree of customer satisfaction of e-banking services as well as the factors influencing their satisfaction. The population of the study consisted of all clients who referred to Tehran banks. 384 questionnaires were randomly distributed among customers of various branches of banks in the city. Based on the findings of this study, the highest degree of correlation was between the positive experience of electronic banking services and their satisfaction of electronic banking services with the correlation coefficient of 0.777 at the significance level of 0.01. In addition, there is a significant positive relationship between income level, service provided by personnel and education level with the dependent variable.

**KEYWORDS:** customer satisfaction, electronic banking, positive experience of services, service, customer-orientation.

---

### 1. INTRODUCTION

The increasing growth and development of technology has created a major change in different aspects of human life and organizational performance. Along with the evolution of computer and specialized technologies, provision of high quality and up to date services and products is an opportunity that no reliable organization can ignore, as such technologies have changed function and attitudes of individuals. Development of new phenomena such as electronic business, electronic commerce and electronic banking has changed individuals' attitude toward organizations.

All organizations are looking for ways to attract customers and increase their satisfaction in order to sustain their profitability and productivity. This issue is particularly important for the banks; on the one hand because of their permanent communication with customers and on the other hand due to the increasing competition among banks and financial institutions. Thus, creating competitive advantage seems necessary for the survival of the banks. New methods in providing banking services, which has a close relationship with information and communication technology, is one of the most important factors in creating competitive advantage for banks and attracting customers and satisfying them [1].

Service industries such as banks, which pay great attention to the effect of customer satisfaction on his/her commitment and retention, should employ new methods to attract more customers. Moreover, in any country, having an efficient banking system is the most important requirement for e-business development and entry into global markets. In addition, due to technological advances and the increasing need for individuals to use electronic banking services in order to save time and create security in trade, addressing advanced and efficient banking system and paying attention to electronic banking seem necessary [2]. The rapid development of the informatics industry has made major changes in the form of money and resource transfer systems in the field of banking and new concept of banking named electronic banking has emerged [3]. The term electronic banking refers to "the provision of information or services by a bank to its customers, via a computer or television" [4] and Pikkarainen, et al. (2004) defines internet banking as an "internet portal, through which customers can use different kinds of banking services ranging from bill payment to making investments".

Considering the importance of electronic banking and its possible relationship with customer satisfaction, the purpose of this study is threefold: investigating social factors affecting customer satisfaction with electronic banking, finding the degree of customer satisfaction with electronic banking and investigating economic factors influencing customer satisfaction with electronic banking in Tehran banks.

## 2. LITERATURE REVIEW

Kumbhar (2011) in an investigative study on factors affecting the customer satisfaction with e-banking in India evaluated major factors (i.e. service quality, brand perception and perceived value) affecting customers' satisfaction in e-banking service settings. His study also evaluated influence of service quality on brand perception, perceived value and satisfaction in e-banking. The results of his study pointed to the importance of perceived value, brand perception; cost effectiveness, easy to use, convenience, problem handling, security/assurance and responsiveness in customer's satisfaction with e-banking.

Tehrani Niknezhad (2007) in another investigative attempt assessed the influence of electronic banking on commitment, trust and attraction of clients in using the Internet Banking of EN (EghtesadeNovin) Banking Industries and found the degree that e-banking affects commitment, trust and attraction of using e-banking in banking industry. The data of her study were analyzed using structural equation modeling and LISREL software and the results showed that e-banking services have a meaningful relationship with commitment, trust and customer-orientation.

Evants *et al.* (2004) in their investigation of electronic banking compared Jordanian banking system and American banking system and specified major differences between Jordanian and American bank web application. Their study shows the gap between web usage in developing and developed countries. The findings illustrated that the difference between these two systems lies in the way services are provided in their websites. American banks use their web sites not only to provide classical operations but also financial calculators, investment advice, and bill payments, while Jordanian banks have exhibited weaknesses in this regard.

In the study conducted on e-banking and customer satisfaction in Bangladesh, Nupur (2010) found that five service quality dimensions namely reliability, responsiveness, assurance, empathy, and tangibles are the core service quality dimensions for customer satisfaction in e-banking and reliability, responsiveness and assurance have more contribution to satisfy the customers of e-banking in Bangladesh.

The influence of the banking industry employees' customer-orientation was investigated in [10]. He mentioned the performance of service organization staff as an influential factor in the service provided for customers of service organizations. He further assessed the effect of the banking industry employee customer-orientation on banking customer satisfaction and their commitment to rebuy.

Fathian *et al.* (2009) in another study investigated the realization of electronic banking in improving Banks' customer satisfaction in Iran Melli Bank. Their findings show that Melli bank's electronic services which are provided via various ways such as ATM, sale terminals, telephone banking, Internet and mobile, are among the customer needs and this means that the relationship between their development and customer satisfaction degree is a direct-linear relationship.

Bamdad and Rafiei Mehrabadi studied customer satisfaction with the quality of banks' ATM services. They found that the customer satisfaction is on an average level. Despite the lack of high customer satisfaction, they would prefer to use the ATM rather than referring to bank staff. Finally, the multiple regression analysis showed that safety of the devices and providence of enough money has the largest share in predicting customer satisfaction.

Park (2009) in another attempt compared customer satisfaction in the community college and department of employment security operated WIN Job centers in Mississippi. Results showed that those customers who were using the WIN Centers for the first time were more satisfied with the overall services of community college centers; however, customers who were using the job center for 2-5 times were more satisfied with overall services from the Mississippi Department of Employment Security job centers. Finally, the data also displayed that the customers who had a higher level of education (i.e. 2 or more years of college) were more satisfied with the WIN Job Centers overall than those with a high school diploma or less.

Washburn (2009) in a survey studies customer satisfaction perceptions of dislocated workers served by WIN Job centers in the Mississippi. Four WIN job centers participated in the study. Each of the four WIN job centers rated in the excellent to good rating in satisfaction for staff, facilities, services, self-service facilities and overall satisfaction. Of the five null hypotheses, three were rejected due to there being a statistically significant difference in at least one of the centers with regards to facilities, staff and services.

Balachandher, *et al.* (2000) in a study on electronic banking as assessed by a number of Malaysia Multi-Media university lecturers introduced developments in information technology and telecommunications as the major factor which have made an electronic revolution in the Malaysian banking sector. This change in turn has resulted in new delivery channels for banking products and services such as the automated teller machines (ATM's), telebanking and PC-banking. These changes were all made for customer satisfaction. Among the services introduced, ATM has been the most used and telebanking has the lowest application rate. Based on this study, electronic banking has not yet been settled in Malaysia but it seems that the government is looking for conditions for its settlement.

## 3. THEORETICAL FRAMEWORK

The development and availability of the Internet have changed with the supply of banking services. Electronic funds transfer system is launched through tools such as cards and codes which provides easy access to personal accounts [16]. Banking services have gone through four periods: the use of coins, paper-based payment systems such as check, electronic payment systems such as cards and Internet databases. Nowadays, most countries are in the third and fourth stages or in other words most banking activities are performed through electronic systems and the Internet. Since monetary transactions and financial affairs are an integral part of trade, along with the expansion of global electronic trade, monetary and financial affairs

agencies widely use the information communications technology to support and facilitate electronic commerce. Hence, in recent decades the electronic payment systems are gradually replacing the traditional payment systems. Meanwhile, the banks' moving toward electronic banking and financial services has played an important role in the increase of e-commerce [17].

Customers either use the product or results of operations or need them or take advantage of their benefit, since each operation has an aim in an organization and has its own customers [18]. Today, manufacturing or service organizations consider customer satisfaction as an important criterion for assessing the quality of their work and this procedure has an upward trend. Customer care and satisfaction is something that is competed globally. As in Malcolm Baldrige National Quality Award, almost 30 percent of all the scores are determined by the level of customer satisfaction. The Total Quality Management (TQM) is also not unaware of this important issue and concerns with satisfying customer needs and expectations [19].

People generally understand customer satisfaction from their own perspectives. To guide the market toward profitability and efficiency in customer retention, industrialists, managers and researchers, are forced to redefine their concept of customer satisfaction. Therefore, it is necessary to define and scrutinize the meaning and application to understand more precisely this concept in a university research. Customer satisfaction has been defined as the degree of access to needs, goals or desired end which is the result of a particular transaction and exchange between the customer and the firm [20].

With regard to customer satisfaction various definitions have been provided by marketing theorists. Zeithaml et al. (2006) defined it as the customer's evaluation of a product or service in terms of whether that product or service has met the customer's needs and expectations and Kotler defines it as the company's actual performance to meet customer expectations. In Kotler's view, if the company can meet customer expectations, customer is satisfied and otherwise he is dissatisfied.

The importance of customer satisfaction or evaluation and control in marketing management banking has been the focus of a number of studies. In the same regard, the role of service quality in financial services has also been featured. Though in the relevant research, sometimes there is a shift in the structure of customer satisfaction and service quality, many separated the two concepts and draw a relationship between them so that they regard the service quality as a pre-requisite for customer satisfaction. Although they have defined satisfaction as the difference between customer expectations and organizational performance, there are some differences between quality and satisfaction. Among such differences one can point to: 1- satisfaction is a generalized sense after experiencing while the quality is not so, 2- expectations in the literature is related to satisfaction and quality is defined differently. As noted, the concept of service quality is not the same as satisfaction and quality. While these concepts have some commonalities with each other they are basically different. As can be inferred from the definition, satisfaction is an attitude to organizational performance that an individual attains based on his experience with an organization and his positive or negative evaluation which indicates his satisfaction with the organization's performance.

### **3.1 Models for the formation of customer satisfaction**

Different processes of formation of customer satisfaction can be classified in different models which draw the relationship between the customer satisfaction and its drivers.

#### **3.1.1 Swedish Model of Customer Satisfaction**

In 1989, Fornell and his colleagues build the first nation-level measurement system of customer satisfaction-- Swedish Customer Satisfaction Barometer (SCSB) [22]. The primary model in Sweden includes two primary drivers of satisfaction: perceived value and customer expectations. More specifically, perceived value refers to received level of quality compared to the price paid. Quality compared to the price paid is one the indices that the customers use to compare various products and services [23]. So, we can predict that if the received value rises, satisfaction will also increase. Another driver of satisfaction is customer expectations of desired product or service. The last link in this model is the relationship between the behavior of complaining customer and his/her loyalty to the company. Positive or negative effects of this agent in a company depend on how the complaints are addressed. Mechanisms of addressing complaints in a company can increase loyalty with appropriate performance and decrease it with weak performance.

#### **3.1.2 The American Customer Satisfaction Index (ACSI)**

The American customer satisfaction index was presented in 1994 through the cooperation of American Quality Association with the University of Michigan Business School. It is an economic indicator that measures the satisfaction of consumers about the goods and services they have consumed across the U.S. economy. This model is based on the Swedish model. ACSI is a structured model and includes a number of variables and causal relationships between them. Customer satisfaction index is located in the middle of this chain. Expectations, perceived value and perceived quality are introduced as factors affecting customer satisfaction. On the other hand, the customer loyalty and customer complaints have been introduced as the model outputs. The main difference between this model and the Swedish model is the addition of perceived quality as a separate factor [24].

#### **3.1.3 The European Customer Satisfaction Index (ECSI)**

The ECSI is an analytical tool, designed to provide a sound basis for selecting the right marketing strategy. In fact, the development of ECSI was heavily inspired by the tool designed by US and European organizations such as European Quality Institute and European Quality Management created a customer satisfaction index under the European Union support. This

model examines customer satisfaction as well as loyalty. The drivers of customer satisfaction in this model include: the customer expectations, perceived quality, perceived value, and customer loyalty constructs [23].

Perceived quality can be examined in two parts: perceived quality of the hardware, which means that part of the quality which is related to the product or service and the other, is the perceived quality of the software which represents part of the quality of the service which represents interactive elements in the service provided such as staff or environmental characteristics [24].

### 3.1.4 Kano model

The Kano model is one of the most studied models of customer satisfaction. Noriaki Kano, one of the known quality theorists, believes that there is a close relationship between quality and customer satisfaction. In Kano's view quality is an inseparable part in all kinds of trade and one of the key factors in global competition. In addition due to increase in the extent of global competition satisfying customer needs only through the current products is not possible but his expectations should be satisfied with new and innovative products and this demands understanding his exact requirements and needs. Due to this situation, Kano regards quality equal to satisfying the customer requirements, demands and expectations and even considers it beyond his satisfaction. Thus, customer satisfaction is provided, we will have continuity of production and thus long-term benefits are warranted.

## 4. HYPOTHESES

Hypothesis 1: customers' satisfaction with services of electronic banking is positively related to services provided by employees.

Hypothesis 2: customers' satisfaction with services of electronic banking is positively related to their income.

Hypothesis 3: customers' satisfaction with services of electronic banking is positively related to positive experience of services of electronic banking.

Hypothesis 4: customers' satisfaction with services of electronic banking is positively related to their education level.

Hypothesis 5: customers' satisfaction with services of electronic banking is positively related to their familiarity with the services provided by banks.

## 5. MATERIALS AND METHODS

This study is both quantitative (based on the way data were collected and analyzed) and field study (in terms of dealing with the type of problem). A number of questionnaires were distributed in various branches of banks in Tehran among customers. The questionnaire used in this study has been prepared by the researcher after studying previous research and it is in two sections: The first section includes personal and demographic questions and respondents were asked to answer questions about their age, place of birth, education level, income, housing type and ethnicity. The variables in the second part of the questionnaire were assessed in a likert scale. The population of the study consisted of all clients who referred to Tehran banks and quota sampling was used and data were collected from different parts of the city. The questionnaires were randomly distributed among 384 customers of various branches of banks in the city. The obtained data were analyzed using SPSS 18. Independent sample t-test and ANOVA were applied for inferential statistics and for analyzing the relationship between interval variables, regression was used.

## 6. RESULTS

**Hypothesis 1:** customers' satisfaction with services of electronic banking is positively related to services provided by employees.

**Table 1:** the correlation between services provided by employees and customers' satisfaction of electronic banking services

Variable	r	Sig
services provided by employees	0.532	0.001

As can be seen in the above table, there is a positive relationship ( $R = 0.532$ ) between services provided by employees and customers' satisfaction of services of electronic banking. The findings point to the effect of the independent variable in explaining the variation observed in the sample population responses in terms of satisfaction of electronic banking services. Based on the significance level of 0.001, it can be said that the hypothesis is confirmed. In other words, customers' satisfaction with services of electronic banking is positively related to services provided by employees.

**Hypothesis 2:** customers' satisfaction with services of electronic banking is positively related to their income.

**Table 2:** the correlation between income and satisfaction of electronic banking services

Variable	r	Sig
Income	0.701	0.02

According to results, there is a significant meaningful correlation ( $r = 0.701$ ) between customers' income and their satisfaction with services of electronic banking. The results indicate the effect of the independent variable in explaining the variation observed in the sample population in terms of satisfaction of electronic banking services. Based on the significance level of 0.02, it can be said that the above hypothesis is confirmed. In other words, customers' satisfaction with services of electronic banking is positively related to their income.

**Hypothesis 3:** customers' satisfaction with services of electronic banking is positively related to positive experience of services of electronic banking.

**Table 3:** the correlation between positive experience of services of electronic banking and satisfaction of electronic banking services

Variable	r	Sig
positive experience of services of electronic banking	0.652	0.01

Based on the obtained results, there is a significant meaningful correlation ( $r = 0.652$ ) between positive experience of services of electronic banking and customer satisfaction of services of electronic banking. The results indicate the effect of the independent variable in explaining the variation observed in the sample population in terms of satisfaction of electronic banking services. Based on the significance level of 0.01, it can be said that the above hypothesis is confirmed. In other words, customers' satisfaction with services of electronic banking is positively related to positive experience of services of electronic banking.

**Hypothesis 4:** customers' satisfaction with services of electronic banking is positively related to their education level.

**Table 4:** The test of difference in customer satisfaction of electronic banking services in terms of education level

Variable	Frequency	Mean	SD	F	Sig
Diploma or lower	135	35.15	5.14	4.6	0.20
Associate degree	56	14.58	6.11		
BA/BS	115	29.94	4.18		
MA/PhD	78	20.31	6.16		

The difference in customer satisfaction of electronic banking services in terms of education level is shown in Table 4. The mean shows that the degree of satisfaction of electronic banking services of customers with diploma degree or lower has the highest mean (35.15) and people with associate degree than that have lowest degree of satisfaction. And based on the significance level of 0.20, the hypothesis is rejected. In other words, customers' satisfaction with services of electronic banking is not positively related to their education level.

**Hypothesis 5:** customers' satisfaction with services of electronic banking is positively related to their familiarity with the services provided by banks.

**Table 5:** The test of difference in customer satisfaction of electronic banking services in terms their familiarity with the services provided

Variable	Frequency	Mean	SD	F	Sig
Low	50	33	5.16	0.8	0.230
Average	215	30.7	8.87		
High	119	35.1	3.75		

Table 5 shows the difference in customer satisfaction of electronic banking services in terms of their familiarity with the services provided. The mean shows that the degree of satisfaction of electronic banking services of customers with average degree of familiarity with bank services is the lowest one (30.7). According to the significance level of 0.230, the hypothesis is rejected. In other words, customers' satisfaction with services of electronic banking is not positively related to their familiarity with the services provided by banks.

## 7. CONCLUSION AND SUGGESTIONS

The main objective of this study was to determine the degree of customer satisfaction of e-banking services as well as the factors influencing their satisfaction. The findings pointed to the positive relationship between services provided by employees, customers' income, positive experience of services of electronic banking. But no significant correlation was found between customers' satisfaction and their education level as well as their familiarity with the services provided by banks. Thus, with regard to the relationship between independent variables and the degree of satisfaction of the electronic banking services, this study indicated that among 5 hypotheses, 3 were confirmed and two were rejected.

The results of this study are in line with a number of studies such as [11] study on the realization of electronic banking in improving Banks' customer satisfaction in Iran Melli Bank, in that the relationship between their development and customer satisfaction degree is a direct-linear relationship.

According to the findings obtained, the following suggestions are proposed for future research for relevant organizations. Given that scientific work should be complementary to each other, most recommendations discussed in this section, are based on the researcher's experience and the limitations observed in the research process.

- 1-Contrastive analysis of customer satisfaction with services of various banks which are member of accelerated network and ranking banks in terms of customer satisfaction.
- 2-Replication of this study at different places and in various times in public and private banks.
- 3-Instructing staff to improve their skills in giving service to customer and customer orientation.

## REFERENCES

1. Alimohammadi, M., 2002. Customer relationship management. *Tadbir educational and scientific journal*, 129.
2. Mirabi, V. R., H. Vazifehdoost and Z. Kehtarpour Farimani, 2008. Investigating the degree of customer satisfaction of electronic banking services using the revised Cose model. *Journal of commerce surveys*, 31.
3. Hassanzadeh, A. and F. Pourfard, 2003. Electronic banking. *News of economics journal*, No. 100.
4. Allen, F., J. McAndrews, and P. Strahan, 2001. E-finance: An Introduction, Working Paper No. 01-36. Financial Institutions Center, Wharton University, Philadelphia, PA, 7 October.
5. Pikkarainen, T., K. Pikkarainen, H. Karjaluo and S. Pahnla, 2004. Consumer acceptance of online banking: An extension of the technology acceptance model. *Internet research*, 14 (3): 224-235.
6. Kumbhar, V. M. 2011. Factors affecting the customer satisfaction in e-banking: some evidences from Indian banks. *Management research and practice*, 3(4), 1-14.
7. TehraniNiknezhad, R., 2007. Assessing the influence of electronic banking on commitment, trust and attraction of clients in using the Internet Banking of EN (EghtesadeNovin) Bank Industries. MA thesis, Department of Management, Islamic Azad University, Nishapur Branch
8. Evants, J., R. Awamleh, and A., Mahate, 2004. Internet Banking in Emergency Market (the case of jordon-ANote; [www.arravdev.com/commerce/jibc/0306-03](http://www.arravdev.com/commerce/jibc/0306-03))
9. Nupur, J. M., 2010. E-Banking and Customers' Satisfaction in Bangladesh: An Analysis. *International Review of Business Research Papers*, 6(4), 145 – 156.
10. Mirveysi, M., 2003. Assessing the impact of the banking industry employee's customer-orientation (based on the Cose model) on banking customer satisfaction and commitment to rebuy. MA thesis, Department of Management, Islamic Azad University, Nishapur Branch
11. Fathian, M., M. A., Shafi'a, and M. Shahrestani, 2009. Realization of electronic banking in improving Banks' customer satisfaction: A Case Study of Iran Melli Bank. The first Executive Management Conference.
12. Bamdad, N., RafieiMehrabadi, 2008. Customer satisfaction with the quality of banks' ATM services. *Humanities and Social Sciences Management*, Year VIII, No. 4.
13. Park, M., 2009. Customer satisfaction: a comparison of community college and department of employment security operated WIN Job centers in Mississippi. Ph.D. Dissertation. Mississippi: Mississippi State University.
14. Washburn, D. M., 2009. Customer satisfaction perceptions of dislocated workers served by WIN Job centers in the Mississippi. Mississippi: Mississippi State University.
15. Balachandher, K.G., V. Santha, I. Norhazlin and R. Prasad, 2000. Electronic Banking in Malaysia: A Note on Evolution of services and consumer Reactions. *Journal of International Banking and Commerce*, 5(1), 34-45.
16. Venos, D. and M. Mokhtaran, 2002. Electronic banking and the necessity for its development in Iran. *Management*, 67 and 68.
17. Kahzadi, N. 2003. Electronic banking: Prerequisites, restrictions and implementation procedures in Iran (Part II); development messenger, No. 28.
18. Brinkerhoff, R. O. and D. E. Dressler, 1998. *Productivity Measurement: A Guide for Managers and Evaluators*. Translated by Mahmood Abdollahzade. Tehran: cultural studies center.
19. Ja'fari, M. and A. H. Fahimi, 1996. *Strategic and cultural tools of Total Quality Management*. Tehran: Rasa cultural institute.
20. Krishna Sunder, V., 2009. Determinants of customer satisfaction in perceived outsourced help-desk services in the personal computing industry. Ph.D. Dissertation. Phoenix: University of Phoenix.
21. Zeithaml, V. A., M.J. Bitner, and D.D. Gremler, 2006. *Services Marketing: Integrating Customer Focus across the Firm*. Singapore: McGraw-Hill Companies.
22. Fornell, C. 1992. A national satisfaction barometer: the Swedish experience. *Journal of Marketing*, Vol. 56, 6-21.
23. Aydin, S. and G. Özer, 2005. The analysis of antecedents of customer loyalty in the Turkish mobile telecommunication market. *European Journal of Marketing*, 39, 7(8), 910 – 925
24. Bamdad Soufi, J. and M. Ravand, 2008. Measuring Customer Satisfaction of Electricity Quality (Case Study). *Modiriati va Tose'e quarterly*.