

## **A study of influencing factors of customer satisfaction in continuing use of Internet Banking- case study: Mellat Bank**

Zahra Seyed-al-Hosseini Rahaghi<sup>1\*</sup>, Seyfollah Ghaderi Rahaghi<sup>2</sup>, Seyed Kamal Chaharsooghi<sup>3</sup>

[rahaghi.1385@gmail.com](mailto:rahaghi.1385@gmail.com), [seyfollahghaderi@yahoo.com](mailto:seyfollahghaderi@yahoo.com), [skch@modares.ac.ir](mailto:skch@modares.ac.ir)

### **Abstract**

With the rapid development of the Internet and Electronic Commerce, banks have intended to promote the use of e-banking among their customers. This research examines the continuing use of Internet Banking among Mellat Bank Customers. Effort has been made to deal with the subject from two aspects; firstly, recognition of affecting factors, and secondly the relationship between each factor and the customer satisfaction in continuing use of Internet Banking.

For this purpose, after studying previously conducted surveys, the influencing factors were drawn, and using the expert opinions, 11 factors were picked out. Then the customer's data were collected using questionnaires, and were analyzed by Binomial Test and Pearson Correlation Coefficient. It revealed that 4 factors of Security, Ease of Use and Perceived Usefulness and Quality of Website were of the most influence respectively.

Finally, basis on the acquired influencing and Technology Acceptance Model (TAM) a model for examination of the factors affecting the customer satisfaction in continuing use of Internet Banking was compiled which can be employed for future researches.

### **Keywords:**

Electronic Banking, Internet Banking, Customer Satisfaction, Technology Acceptance Model (TAM)

## **1. Introduction**

Acceptance of new products is very important for different industries. In currently decade, information technology has introduced variety of applicable innovations like internet services which meaningfully has impressed electronic banking industry. Banks and financial institutions improved their tasks by acceptance and use of different innovations. From customer sight, e-banking innovations let customer can achieve financial services easier and with better management of financial resources, saves more in time and cost. Because of existence benefits for suppliers and customers in financial market, e-banking services have grew in countries familiar with this technology quickly. In the last decade, these innovations have been presented in cast of different services such as telephone services, mobile services and services with fax by banks, but newest innovation in electronic banking is internet services in electronic banking. (Vafaie, 2009)

<sup>1</sup> MA Degree in Information Technology Engineering in Tarbiat Modares University, Tehran, Iran

<sup>2</sup> MA Degree in Industrial Management, Teacher of Shahid Shamsipour Collage, Tehran, Iran.

<sup>3</sup> Professor of Tarbiat Modares University, Tehran, Iran.

Nowadays, many of banks in the world present their services by electronic and our country will be effected with this, then, in long time does not exist no alternative except bank being electronic. Increasing in competition, changing in business plans, doing in worldwide and develop in communication and information technologies are from important changes which have made to change financial and banking services industry. In another side, growing part of customers appear that they have technologic understanding and prefer distribution service systems basis on information technology on receiving this services with bank tellers. With past of customer from traditional banking level to electronic banking, new strategies are necessary for attract and keeping customer (Karjaoluoto et al, 2003). It's not easy to responding to customer need in internal banks with traditional field and field creation and use of suitable technology is necessary. Lagging and ignoring this market will create suitable space for firms and institutes that they can achieve large share of financial activities by presenting their services (Jeouzef and stone, 2003)

## 2. Question research

Main question: Is there any meaningful relationship between influencing factors on customer satisfaction and use of Internet Banking?

Subsidiary questions:

- 1- Is there any meaningful relationship between Prior Experience of Computer and customer satisfaction?
- 2- Is there any meaningful relationship between Prior Experience of Technology and customer satisfaction?
- 3- Is there any meaningful relationship between usefulness and customer satisfaction?
- 4- Is there any meaningful relationship between ease of use and customer satisfaction?
- 5- Is there any meaningful relationship between trust and customer satisfaction?
- 6- Is there any meaningful relationship between security and customer satisfaction?
- 7- Is there any meaningful relationship between speed and customer satisfaction?
- 8- Is there any meaningful relationship between cost and time and customer satisfaction?
- 9- Is there any meaningful relationship between quality of website and customer satisfaction?
- 10- Is there any meaningful relationship between technical support and customer satisfaction?
- 11- Is there any meaningful relationship between deference in services and customer satisfaction?

## 3. Litratue review

Customers are in investigation about suppliers ever that they present them goods or services better than the others. Also, instances and records shows that in now competitive world, discover of customer needs and requests and answer to them before competitions is a success fundamental condition for firms. However, organizations and commercial firms effort via finding to unique advantages, achieve super situation rather than other competitor.

Customer satisfaction evaluation is one of the most usual methods for determination of amount of needs and requests satisfaction with presented goods and services. Customer satisfaction evaluation is an effective tool for controlling general organization performance and it has enabled organization to recognition weaknesses and trying removes them. Also, it

provides possibility of initiate of economical advantage in special time for organization. (Maleki and Darabi, 2008)

### 3.1. Customer Satisfaction

Customer satisfaction is one of the internal activities in organizations that their purpose is reply to customer requests and it shows increasing goods and services quality orientation.

Kotler (2001) identifies customer satisfaction as degree of real performance in a firm that achieve customer expects. In his opinion if performance firm achieve customer expects, customer has satisfaction feel and otherwise has dissatisfaction feel.

For evaluation customer satisfaction, many models and indexes have searched in world which you can observe comparison them with each other in follows.

Author	Model	Features
Noriaki Kano	Kano	Comparison between performance quality and consumer satisfaction-quality identification of three aspects: fundamental, applicable, motivational- it is applicable in most of customer satisfaction pattern.
Fornell	Fornell	Investigation in customer satisfaction- comparison between quality parameters and customer manner- emphasize on equivalent of customer prospective indexes and creation intuitional and emotional judgeship – best significant model for showing standard index in national surface.
Sborne	Scamper	Creation invention and innovation in service presentation to customer basis on question, idea and motivation.
Parasuraman	Servqual	Questionnaire design and evaluation of customer satisfaction in massive just basis on presented service quality not presented product.

Puzzle 1- Comparison between different models in customer satisfaction

National customer index	Relation with customer	View of offering organization	Comprehensive value	Customer deduction of service quality	Customer deduction of product quality	Complains	Loyalty	Expects
ACSI			✓	✓	✓	✓	✓	✓
ECSI		✓	✓	✓	✓		✓	✓
SWICS	✓			✓	✓		✓	
MCSI			✓	✓	✓		✓	✓

Puzzle 2- Comparison of customer satisfaction index in different countries

### 3.2. Electronic Banking

Electronic banking title often signs to online banking and internet banking. However, electronic banking is main concept and it includes telephone banking, WAP banking, TV banking. In this period, internet is as the most distribution channel. Many of researches have expressed which internet has changed into most usual electronic distribution base for online banking.

Electronic banking completion period divided to four periods that is as:

- 1) Customer writes his offer on a paper and gives it to teller and teller operates according it. In end of a day, all of paper documents are sent to a central and end of the night imports to system.
- 2) Customer can observe on teller work and teller import information in front of customer.

- 3) In this period, customers are connected to their accounts through electronic systems and can do their affairs like a teller but some of clerks must be present as coordinator. Customer should be present in branch for doing some affairs link loan and etc.
- 4) All of activities are done electronic and labor force that is supervisor on systems will be free. Even it is not necessary that customer being present for getting loan and etc.

Internet appearance has deep and important effect on electronic banking spread. By internet, banks were not limited to place and time. Customers access all over the world easily and 24 hours to their accounts. Therefore, internet banking provides benefits and advantages for banks and customers too. (Karjaluoto et al, 2002)

Researches in electronic banking field in the world have come in following puzzle:

	Author	Year	Indexes
1	Laforet and Li	2005	Security, perceived risk, skill in using computer, conscious
2	Sathye	1999	Security, conscious
3	Aladwani	2001	Security, existence of law, keep privacy, famous, certain services, Arabic edition in website, skill in using computer, cheap services, trust, speed
4	Liao and Cheung	2002	Attention, security, speed, friendly, user partnership, ease of use
5	Karjaluoto et al	2002	Prior Experience of Computer , Personal Banking Experience
6	Gerrard and Cunningham	2003	Social desiring, compatibility, ease of use, complication, trust, access, economic profits, skill in using computer
7	Kim et al	2001	Customers attitude and capability, saving in cost and time
8	Sohail and Shanmugham	2003	Access to internet, conscious, attitude to change, cost of access to computer and internet, trust, security, ease of use, usefulness
9	Mattila et al	2003	Income, graduation, ease of use, presentable services
10	Polatoglu and Ekin	2001	Comparative advantage, observational, testable, complication, compatibility, perceived risk, kind of group, kind of decision, marketing activity
11	Akinci et al	2004	Website security, trust, keeping privacy, speed, account store, friendly, loyalty, services variety, loading speed.

Puzzle 3- investigated indexes in previous research

### 3.3. Technology Acceptance Model (TAM)

In 1989, Fred Davis presented technology acceptance model for survey manner using computer. This model has quoted from Ajzen and Fishbin Theory of Reasoned action and includes some indexes like perceived usefulness and ease of use. In past 18 years, information systems society has paid attention to TAM as strong theory in information systems field.

According to TAM, use behavior in one information technology is determined through tent to use of that special system and also tent to use is determined through amount of usefulness and ease of use in technology.

As we said, according to Davis Model, 2 indexes are which they include ease of use and usefulness that they have effects on tent to use. You can see his model as follows:

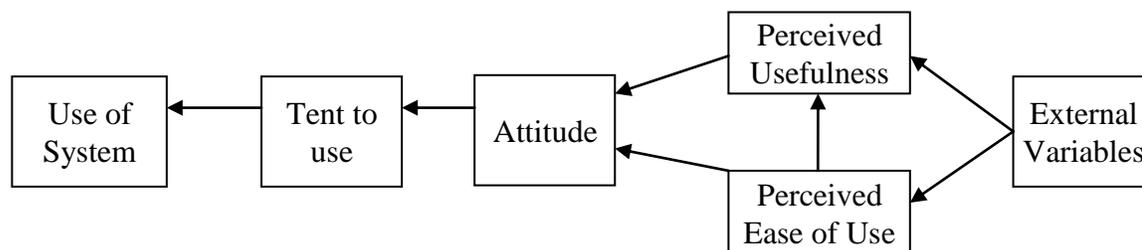


Fig. 1-Technology Acceptance Model (Davis, 1989)

#### 4. Research Method

Research kind in consideration of purpose is applicable and research method is correlation. In this research, Mellat bank customers in Tehran which have access to internet banking services have considered as statistic society and whereas society is unlimited for calculation of necessary case volume has used from following formula that is 196:

$$n = \frac{Z_{\alpha/2}^2 \cdot P(P-1)}{d^2} \quad (1)$$

In first phase random sampling method, it was selected 3 of branches managements of 7 branches managements which are 1, 3 and 6. Then in second phase with zonal sampling method final branches were selected from between them. Finally, numbers of cases are determined through related formula that is necessary which they divided between branches. With this method, we calculated 42 branches for test.

$$n = \frac{N \times Z_{\alpha}^2 \times pq}{\varepsilon^2(N-1) + Z_{\alpha}^2 \times pq} \quad (2)$$

For selection effective indexes, we used of professors and experts idea. In this phase from investigated indexes in previous studies, 11 indexes selected which includes, prior experience computer, prior experience technology, speed, cost and time, ease of use, usefulness, trust, security, website quality, technical support and services variety.

Also, for gathering data used questionnaire that its validity approved by professors and experts with Delphi method and its reliability proofed with Alpha Coefficient (0/944)

For data analysis we used descriptive and deductive methods and also we used SPSS18 for investigation about relation between dependent and independent variables.

#### 5. Analysis of data

##### 5.1. Results of analysis data about sociology answerer

Sociology Indexes	Activity				Job				Education				Age			Sex		
	other	*Service	Product	Commercial	other	*Clerk	Expert	Manager	MA and Upper	*B.A	Upper Diploma	Diploma	Upper 60	Between 40 and 60	*Between 20 and 40	Under 20	*Male	Female
<b>Abundance</b>	83	102	4	21	30	76	88	16	36	92	26	56	4	27	179	--	127	83
<b>Abundance Percent</b>	39/5	48/6	1/9	10	14/3	36/2	41/9	7/6	17/1	43/8	12/4	26/7	1/9	12/9	85/2	--	60/5	39/5

Puzzle 4- descriptive statistic about sociology indexes

##### 5.3. Analysis of correlation ratio between effective indexes and customer satisfaction

Whereas it was said before, after doing Binomial Test about effect or non-effect of above indexes on customer satisfaction and effect of all selected indexes determination, we surveyed Pearson Correlation Test for determinate of relation between indexes and customer satisfaction that achieved results is in puzzle no.6:

In continuance, we did Correlation Test for survey relation ratio between customer satisfaction and tent to use and relation ratio between tent to use and real use which we achieved results is brought in Puzzles no.7 and 8:

## 5.2. Results of Binomial Test about investigation indexes

Result	Meaningful Number	Ratio	Grouping	Indexes
Effective	0/000	0/32	Minor or equal medium	Prior Experience Computer
		0/68	Major of medium	
Effective	0/023	0/42	Minor or equal medium	Prior Experience Technology
		0/58	Major of medium	
Effective	0/000	0/37	Minor or equal medium	Usefulness
		0/63	Major of medium	
Effective	0/000	0/24	Minor or equal medium	Ease of Use
		0/76	Major of medium	
Effective	0/000	0/28	Minor or equal medium	Trust
		0/72	Major of medium	
Effective	0/000	0/23	Minor or equal medium	Security
		0/77	Major of medium	
Effective	0/000	0/26	Minor or equal medium	Speed
		0/74	Major of medium	
Effective	0/001	0/38	Minor or equal medium	Cost and Time
		0/62	Major of medium	
Effective	0/000	0/38	Minor or equal medium	Website Quality
		0/62	Major of medium	
Effective	0/000	0/35	Minor or equal medium	Technical Support
		0/65	Major of medium	
Effective	0/012	0/37	Minor or equal medium	Services Variety
		0/63	Major of medium	

Puzzle 5- Results of Binomial Test about investigation indexes

Result about Relationship	Meaningful Number	Correlation Ratio	Investigational Indexes
Straight and Meaningful	0/000	0/582	Security and Customer Satisfaction
Straight and Meaningful	0/000	0/493	Ease of Use and Customer Satisfaction
Straight and Meaningful	0/000	0/470	Usefulness and Customer Satisfaction
Straight and Meaningful	0/000	0/449	Website quality and Customer Satisfaction
Straight and Meaningful	0/000	0/436	Cost and Time and Customer Satisfaction
Straight and Meaningful	0/000	0/425	Speed and Customer Satisfaction
Straight and Meaningful	0/000	0/414	Trust and Customer Satisfaction
Straight and Meaningful	0/001	0/324	Services Variety and Customer Satisfaction
Straight and Meaningful	0/000	0/307	Technical Support and Customer Satisfaction

Straight and Meaningful	0/000	0/243	Prior Experience Technology and Customer Satisfaction
Straight and Meaningful	0/003	0/201	Prior Experience Computer and Customer Satisfaction

#### Puzzle 6- Results of Pearson Correlation Test

Result of Relationship	Meaningful Number	Correlation Ratio	Investigational Index
Straight and Meaningful Relation	0/000	0/732	Customer Satisfaction and tent to use

Puzzle 7- Results from correlation test about relation ratio between customer satisfaction and Tent to use

Result of Relationship	Meaningful Number	Correlation Ratio	Investigational Index
Straight and Meaningful Relation	0/000	0/791	Tent to Use and Real Use

Puzzle 8- Results from correlation test about relation ratio between Tent to use and real use

## 6. Consequences

Concerning to achieved results in above puzzles, for answering to those questions we had asked at the beginning of article, we can say:

**Question 1:** Every much prior experience computer be upper, satisfaction amount will be more and upper and overhand.

**Question 2:** Every much prior experience technology be upper, satisfaction amount will be more and upper and overhand.

**Question 3:** Every much customer understands internet banking is useful more, satisfaction amount will be more and upper and overhand.

**Question 4:** Every much customer understands internet banking is easy more, satisfaction amount will be more and upper and overhand.

**Question 5:** Every much customer understands internet banking is trustable more, satisfaction amount will be more and upper and overhand.

**Question 6:** Every much customer understands internet banking is more secure, satisfaction amount will be more and upper and overhand.

**Question 7:** Every much customer understands internet banking is Speeder, satisfaction amount will be more and upper and overhand.

**Question 8:** Every much customer understands internet banking is more economic about cost and time, satisfaction amount will be more and upper and overhand.

**Question 9:** Every much customer understands website quality is more, satisfaction amount will be more and upper and overhand.

**Question 10:** Every much customer understands technical support in internet banking is more, satisfaction amount will be more and upper and overhand.

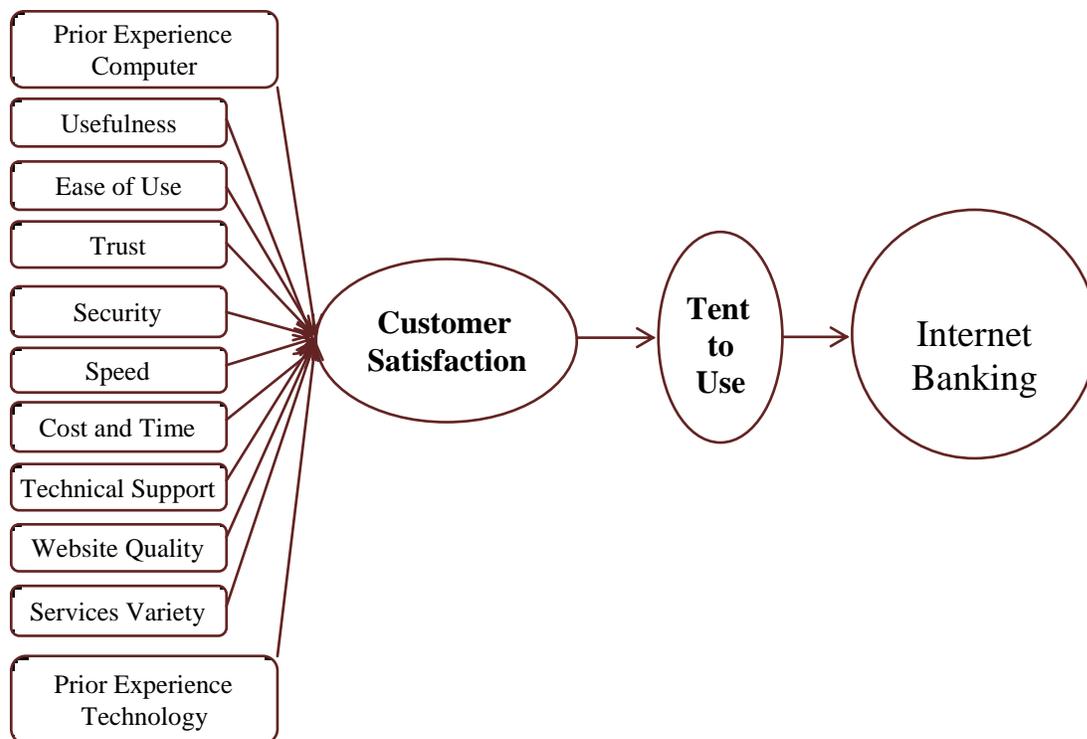
**Question 11:** Every much customer understands services variety in internet banking is more, satisfaction amount will be more and upper and overhand.

In addition, we survey correlation test between two another indexes and we achieved following results:

- ✓ In consideration the result about customer satisfaction (0/732 and meaningful), every much customer satisfaction be upper, tent to use amount will be more and upper and overhand.

- ✓ In consideration the result about tent to use (0/791 and meaningful), every much tent to use be upper, real use amount will be more and upper and overhand.

With consideration the above and Technology Acceptance Model (TAM), we design a model for present research which we can use in future researches.



## 7. References

- 1- Adelazar, Momeni, M., 2001, *"Statistics and its application in management"*, 1st copy, Samt Publisher.
- 2- Afkhani, 2008, *"Effect of website quality on customer satisfaction in e-commerce"*, M.A. thesis, Allame Tabatabaee University.
- 3- Bagheri, M.A., 2008, *"Determination of main factors for success in internet banking acceptance between Iranian young people"*, M.A. thesis, Tarbiat Modares University.
- 4- Pourmirza, A., 2006, *"Electronic banking acceptance by Iranian customers"*, M.A. Thesis, Tarbiat Modares University.
- 5- Khosroshahi, S., 2009, *"Effective factors on Trust in internet banking-Mellat bank"*, M.A. Thesis, Banking Education University.
- 6- Shakeri, A., 2007, *"A survey on critical factors success in perform electronic banking in Iran"*, M.A. Thesis, Tarbiat Modares University.
- 7- Taleb, Sh., 2009, *"A survey on effect of electronic banking on customer satisfaction in Eghtesad Novin bank"*, M.A. Thesis, Tehran University.
- 8- Ghasemi, R., 2006, *"Relationship between perceive strategic values and electronic banking acceptance"*, M.A. Thesis, Tarbiat Modares University.
- 9- Ghezal Iyagh, M., 2006, *"A survey on customer attitude in use of internet banking services-case study three iranian government banks"*, M.A. Thesis, Tarbiat Modares University.

- 10- Maleki, A., Darabi, M., 2008, "*Different methods for evaluating customer satisfaction*", Car engineering and dependent industries journal, No.3.
- 11- Vafaie, S., 2009, "*Effective factors on internet banking acceptance through customer of Export Development bank (developing in technology model and relative marketing)*", M.A. Thesis, Banking education university.
- 12- Yazdani, Sh., 2005, "*A survey on effective factors on customer using attitude of electronic banking services in Iran*", M.A. Thesis, Tehran University.
- 13- Akinci, S., Aksoy, S., and Atilgan, E., 2004, "*Adoption of Internet Banking among sophisticated consumer segments in advanced developing country*", International Journal of Bank Marketing, vol 22.
- 14- Aladwani, A.M., 2001, "*online banking: a field study of drivers, development challenges, and expectations*", International journal of information management, vol 21.
- 15- Davis, F.D., Warshaw P.R., 1989, "*user acceptance of computer technology: a comparison of two theoretical models*", Management science, vol 35, No 8.
- 16- Gerrard, P. and Cunningham, J.B., 2003, "*The diffusion of E-banking among Singapore consumer*", International Journal of Bank Marketing, vol 21.
- 17- Joseph, M., Stone, G., 2003, "*an empirical evaluation of US bank customer perceptions: the impact of new technology on service delivery in the banking sector*", international journal of Retail and Distribution Management, vol 31, No.4.
- 18- Karjaluoto, H., Mattila, M. and Pentto, T. 2002, "*Factors underlying attitude formation toward online banking in Finland*", International Journal of Bank Marketing, vol 20, No 6.
- 19- Karjaluoto, H., Koivumaki, T., Salo, J., 2003, "*individual differences in private banking: empirical evidence from Finland*", Proceedings of 36<sup>th</sup> Hawaii International Conference System Sciences.
- 20- Kim, B.M., Widdows, R. and yilmazer, T., 2001, "*The Determinants of Consumers' Adoption of Electronic Banking*",
- 21- [www.bos.frb.org/news/conf/payments](http://www.bos.frb.org/news/conf/payments) 2005/yilmazer.pdf
- 22- Kotler, Ph., and et al, 2001, "*Principles of marketing*", Third edition, Prentice Hall, UK.
- 23- Laforet, S. and Li, X., 2005, "*Consumers' attitudes towards online and mobile banking in China*", international journal of Bank Marketing, vol 23.
- 24- Liao, Z., Cheung, M., 2002, "*International based e-banking and customer attitudes*": an empirical study, information & Management, Vol 39.
- 25- Mattila, M., Karjaluoto, H. and Pentto, T., 2003, "*Internet Banking Adoption among mature customer: early majority or laggards?*", Journal of Service Marketing, vol 17.
- 26- Polatoglu, V.N. & Ekin, S., 2001, "*An empirical investigation of the Turkish consumers' acceptance of Internet banking services*", International Journal of Bank Marketing, vol 19, No 4.
- 27- Sathye, M. 1999, "*Adoption of internet banking by Australian consumers: an empirical investigation*", international journal of Bank Marketing, vol 17, No 7.
- 28- Sohail, M.S., and Shanmugham, B, 2003, "*E-banking and customer prefereneces in Malaysia: An empirical investigation*", Information Sciences, vol 150.