International Journal of Applied Operational Research
Vol. 5, No. 4, pp. 77-86, Autumn 2015

Journal homepage: ijorlu.liau.ac.ir

Assessment of the Factors Affecting the Acceptance of Online Banking by Consumers with an Emphasis on the Aspect of Risk (Case Study: Customers of Refah Bank in Qazvin Province of Iran)

J. Shafee, K. Shahroodi*

Received: 1 March 2015 ; **Accepted:** 18 July 2015

Abstract Nowadays, internet technology provides an opportunity for banks and financial institutions to take advantages in dynamic and competitive turbulent environment in their favor. In addition, considering the importance and status of internet banking and growing trend of it in the country in recent years, now banks and financial institutions have found that maintaining status and effective development without the benefit of scientific and practical strategies in information and communication management is not possible. However, the use of these services by bank customers would be met with resistance in some cases because of various reasons. In Refah Bank, despite practices and advances in the field of internet banking and conducting massive publicity, still many users of this service are not significant. Thus, the present study examined factors affecting the acceptance of online banking by consumer and tried to focus on the risk factor that appears to have a greater impact on the acceptance. This study, in term of objective is applied, and research method is descriptive from type of survey. Statistical population includes customers of Refah Bank in Qazvin Province of Iran that use the internet banking. Number of them to September 2013 is 15,041 people. Questionnaire was used to collect data and structural equation modeling and Lisrel software were used for data analysis. Results show that all the factors influencing the acceptance of online banking such as perceived usefulness, perceived ease of use, perceived enjoyment and quality of internet connection affect intention to use it. Also, regarding to the dimensions of perceptual risk, results indicate that social risks and security risks have a negative impact on the use of online banking services, but a negative impact of executive risk, time and financial is not proved.

Keywords: Online Banking, Perceived Risk, Acceptance of Internet Banking.

1 Introduction

Advances in technology have fundamentally transformed the world and have changed methods and the way of people behavior in business and personal affairs [1]. Specifically, the banking industry during past two decades has been invested considerable resources in the use of communication technologies. In response to privatization, the growth of global networks

* **Corresponding Author.** (✉)
E-mail: k_shahroodi@yahoo.com (K. Shahroodi)

J. Shafee
Department of Executive Master of Business Administration (EMBA), Rasht Branch, Islamic Azad University, Rasht, Iran

K. Shahroodi
Department of Business Management, Rasht Branch, Islamic Azad University, Rasht, Iran

[Downloaded from mail.ijaor.ir on 2026-11-28]

and increasing income levels, banking industry have used new technology based on service delivery that is called electronic banking and its goal is to achieve and maintain a strategic advantage [2]. E-banking technology refers to financial activity that is done using electronic technology. This range includes from automated teller machines (ATM) to other services such as direct savings, payments of electronic billing, electronic funds transfer, telephone banking and online banking.
Online banking is one of the new activities added to services, which needs computer and the Internet, but it is not popular as much as automated teller machines among the customers [3]. In opinion of customers, online banking can provide many benefits to people, such as quick access to their accounts and inventory, ability to transfer their savings remotely and investments and the completion of electronic applications. With online banking, time and place lose their concepts and these services are available at any time, regardless of where people are located.

2 Statement of Problem

Advanced developments in information technology and the internet, and how the performance of banks and implementation methods of bank activities has changed by consumers [4]. Nowadays, most of traditional banks have used Internet technology and offer Internet banking services to customers. As a result, consumers can have access to their accounts and perform all their banking works. There are many benefits in the use of internet banking for banks and their customers. The main benefits include cost savings for bank and convenience for customers to access banking in seven days a week and twenty-four hours a day [5].

However, despite the numerous advantages of online banking, still a large group of customers refuse from this service and this had led to problems for banks customers such as waste of time, trading slowdown and exchanges and … due to lack of knowledge in this field. Therefore, understanding these reasons is useful for bank managers when formulating strategies to increase the use of online banking [6].

Despite suitable contexts in Refah bank and recent progress in the field of virtual and internet banking, it has been not been successes in attracting and motivating customers to perform these services. Statistics indicate that efficiency has been minimal compared to the costs in this field. In addition, banks should have the ability of providing various modern banking services in order to be able to continue their activities and maintain their customers in this competitive banking environment. According to the previous researches and current condition in banks, question is that if there is any relationship between effective factors on accepting online banking (facility of using, perceived usefulness, perceived enjoyment, perceived quality of the internet connection and risk (executive, social, temporal, financial, security)) and the using by customers of Refah bank?

3 Definition of Research Variables

Perceived Usefulness

It is one of the most popular factors in use of internet banking [7]. Perceived usefulness among different variables has the strongest impact in the use of internet banking [8].

[Downloaded from mail.ijaor.ir on 2026-11-28]

Perceived Ease of Use
Individual perception about ease of use refers to the degree which person believes that learning how to use and working with a specific system requires little effort mentally [9].

Perceived Enjoyment
Perceived enjoyment is entertainment relations with aims to create fun and increase the ease of use in applying information technology[10]. System creators believe that as use of system becomes a routine and therefore less challenging, this lack of enjoyment may incorrectly indicate that the system is not useful.

Quality of Internet Connection
Access to internet and computer is necessary to use of internet banking. Wider access to the internet provides possibility of wider use from internet banking [11].

Executive Risk
Sudden deterioration in performance of the database server may lead to an unexpected loss of bank data and affect money transfers [12].

Social Risk
unfavorable perceptions from social structure know social risks and believe that this perception affects the views of online banking users[13].

Time Risk
This risk refers to lost time and creating dissatisfaction by the delay in payments [6].

Financial Risk
Many bank customers for fear of economic losses and other similar bad luck have a negative attitude towards the use of online banking[14]. Protective measures of usual and customary in banking (office support and guarantees in writing about specific methods) are not available in the environment of online banking and so the feeling of insecurity and uncertainty may arise. According to their opinion, customers are concerned about the loss of money (capital) at the time of the transaction or transfer money on the internet.

Security Risk
Security risk in online banking can be examined from the following aspects:
• Attacks on the network and data transfers
• Unauthorized access to accounts [15].

4 Research Hypotheses

H1: Perceived usefulness has a positive impact on intention to use online banking.
H2: Perceived ease of use has a positive impact on perceived usefulness.
H3: Perceived ease of use has a positive impact on intention to use online banking.
H4: Perceived enjoyment has a positive impact on perceived usefulness.
H5: Perceived enjoyment has a positive impact on perceived ease of use.
H6: Perceived enjoyment has a positive impact on intention to use online banking.

[Downloaded from mail.ijaor.ir on 2026-11-28]

H7: The quality of Internet connection has a positive impact on intention to use online banking.
H8a: Executive Risk has a negative impact on intention to use online banking.
H8b: Social risk has a negative impact on intention to use online banking.
H8c: Time risk has a negative impact on intention to use online banking.
H8d: Financial risk has a negative impact on intention to use online banking.
H8e: Security risk has a negative impact on the acceptance of online banking.

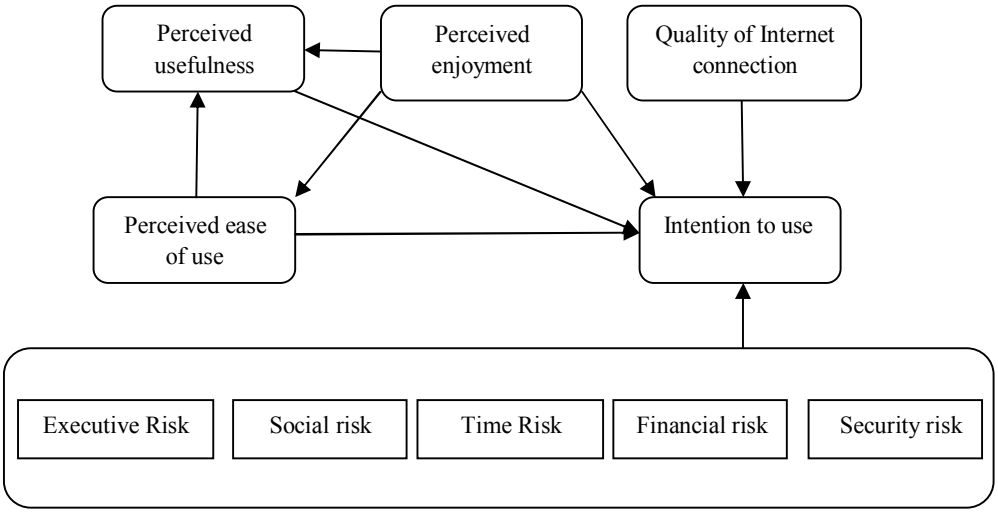

Fig. 1 Research Model

5 Research Methodology

This study in term of objective is applied and research method is descriptive from type of survey. Statistical population in this study includes customer of Refah Bank in Qazvin Province of Iran that use from internet banking. Number of those to September 2013 is 15,041 people. In this research for sampling is used simple random sampling method. Tool used to collect data is questionnaire that containing 27 questions. Questions 1 to 4 related to the perceived usefulness [16]; questions 5 to 8 are related to perceived ease of use [16]; questions 9 to 11 are related to perceived enjoyment [17]; questions 12 and 13 are relate to the quality of the internet connection [8]; questions 14 to 24 are related to perceived risk [6] ; and finally questions 25 to 27 are relate to the variable of intention to use the internet [16]. In latter part, there are the demographic questions (age, sex, education, etc.) about the person who answered to questionnaire. In this study, the following actions are conducted to assess the validity of the questionnaire:
For this purpose, a questionnaire was provided to the experts and heads of bank branches and the questionnaire was finalized after consultation with them. In this study, 20 questionnaires are distributed for customers to assess reliability of questionnaire. Cronbach's alpha values using the software SPSS is achieved 0.872, thus questionnaire is reliable. In this study, for data analysis is used software of Lisrel and structural equation modeling method.

[Downloaded from mail.ijaor.ir on 2026-11-28]

6 Data Analysis

The relationship between variables was tested using structural equation modeling techniques and maximum likelihood method that is the most common approach in structural equation, and about appropriateness of the data fitting with the model examined to verify the hypotheses. In figures 2 and 3 is evaluated research complete model that using t-test can be stated about acceptance or rejection of hypotheses and amount of relationship between the variables is determined using the structural coefficients.

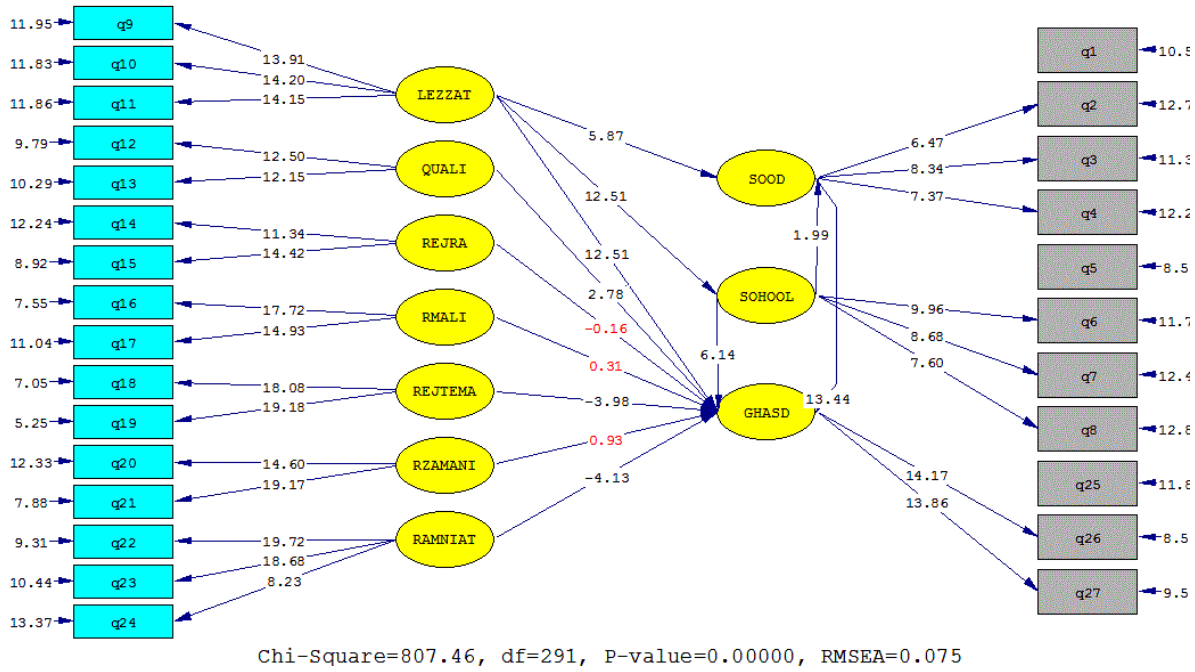

Fig. 2 Comprehensive model of research hypotheses in a state of t coefficients

Symbol of variables in Figure:

REJRA: Executive Risk	QUALI: Quality of Internet Connection	LEZZAT: Perceived Enjoyment
RMALI: Financial Risk	REJTEMA: Social Risk	RZAMANI: Time Risk
RAMNIAT: Security Risk	SOOD: Perceived Usefulness	SOHOLAT: Perceived Ease of Use
GHASD: Intention to Use		

[Downloaded from mail.ijaor.ir on 2026-11-28]

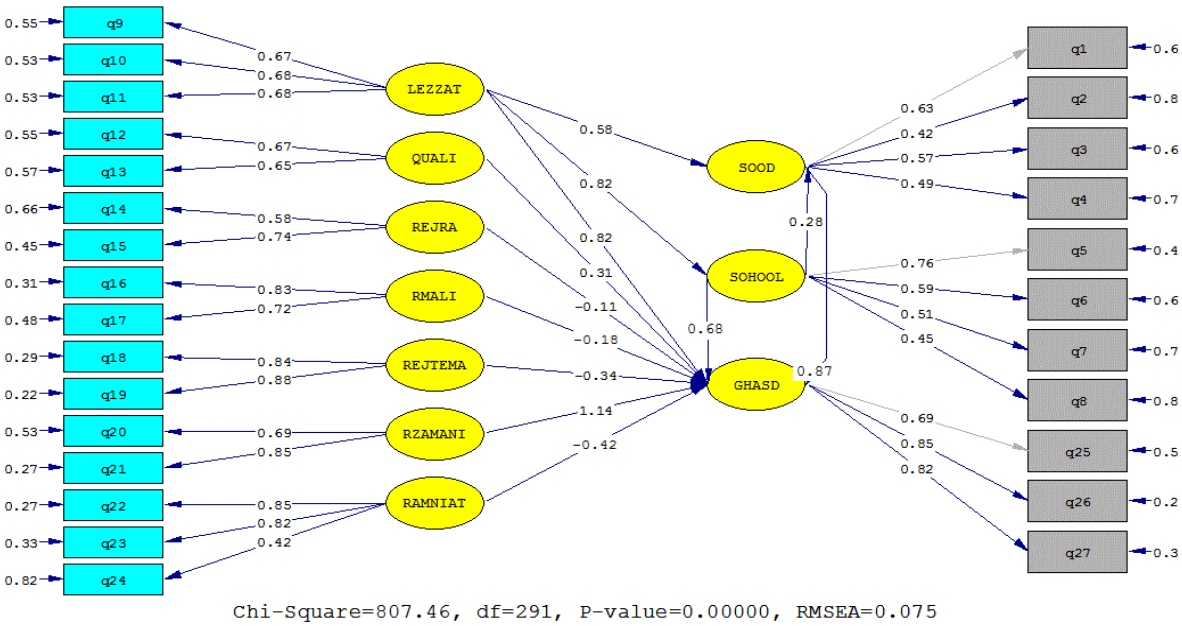

Fig. 3 Comprehensive model of research hypotheses in a state of structural coefficients

6.1 Comprehensive Model Fitting Indicators

Model fitting indicators in the table below, show that model with data collected from statistical samples have a good fitting. According to the data collected, this model can be one of the models that can be used to increase intention of customers to use online banking.

Table 1 Comprehensive model fitting indicators

Index	AGFI	GFI	CFI	NNFI	NFI	χ^2/df	RMSEA
Value obtained	0.88	0.91	0.95	0.94	0.93	2.77	0.075
Allowable value	90<	90<	90<	90<	90<	3>	0.08>

6.2 Result of Hypotheses Test

H1: Perceived usefulness has a positive impact on intention to use online banking.
In Figures 2 and 3, the relationship between perceived usefulness and intention to use online banking is tested using structural equation modeling and using the t-test statistic. As it is clear, t value is outside the range of 1.96 to -1.96 and its value is 13.44. Thus at the 99 percent confidence level, perceived usefulness has a positive impact on intention to use online banking. The degree of effect is 0.87, so first hypothesis is confirmed. Results of this hypothesis correspond with researches results of Farsizadeh[18], Mahmoodi Meymanad & et al [19], Yazdani [20], Salvati [21], Pikkarainen [8], Lee [6], Cheng & et al [16], Al-Somaly & et al [22], Rotchanakitumnuai., Speece [23], Eriksson & et al [24], Barker Steege., Shik Yoon [25] and Celik [26], in other words, the positive relationship between perceived usefulness and intention to use internet banking has proven in these studies.
H2: Perceived ease of use has a positive impact on perceived usefulness.

[Downloaded from mail.ijaor.ir on 2026-11-28]

According to figure it is clear that t value is outside the range of 1.96 to -1.96 and its value is 1.99. Thus at the 95 percent confidence level, perceived ease of use has a positive impact on perceived usefulness. The degree of effect is 0.28, so second hypothesis is confirmed. This hypothesis is also confirmed in research of Lee [6].

H3: Perceived ease of use has a positive impact on intention to use online banking.

According to figure it is clear that t value is outside the range of 1.96 to -1.96 and its value is 6.14. Thus at the 99 percent confidence level, perceived ease of use has a positive impact on intention to use online banking. The degree of effect is 0.68, so third hypothesis is confirmed. Results of this hypothesis correspond with researches of Meymanad & et al [19], Yazdani [20], Salavati [21], lee [6], Cheng & et al [16], Al-Somali & et al [22], Rotchanakitumnuai & Speece [23], Celik [26]. In other words, the positive relationship between perceived ease of use and intention to use internet banking has proven in the above studies. While the impact of perceived ease of use on intention to use online banking have not approved in research of Maditinos et al [15].

H4: Perceived enjoyment has a positive impact on perceived usefulness.

According to figure it is clear that t value is outside the range of 1.96 to -1.96 and its value is 5.87. Thus at the 99 percent confidence level, perceived enjoyment has a positive impact on perceived usefulness. The degree of effect is 0.58, so fourth hypothesis is confirmed.

H5: Perceived enjoyment has a positive impact on perceived ease of use.

According to figure it is clear that t value is outside the range of 1.96 to -1.96 and its value is 12.51. Thus at the 99 percent confidence level, perceived enjoyment has a positive impact on perceived ease of use. The degree of effect is 0.82, so fifth hypothesis is confirmed.

H6: Perceived enjoyment has a positive impact on intention to use online banking.

According to figure it is clear that t value is outside the range of 1.96 to -1.96 and its value is 12.51. Thus at the 99 percent confidence level, perceived enjoyment has a positive impact on intention to use online banking. The degree of effect is 0.82, so sixth hypothesis is confirmed. The results of the analysis of the fourth, fifth and sixth hypotheses correspond with research of Maditinos et al [15].

H7: The quality of internet connection has a positive impact on intention to use online banking.

According to figure it is clear that t value is outside the range of 1.96 to -1.96 and its value is 2.78. Thus at the 99 percent confidence level, the quality of internet connection has a positive impact on intention to use online banking. The degree of effect is 0.31, so seventh hypothesis is confirmed. This hypothesis is also confirmed in studies of Farsizadeh [18], Mahmoodi Meymanad & et al [19], Al-Somali & et al [22], while above hypothesis is rejected in Maditinos et al [15].

H8a: Executive risk has a negative impact on intention to use online banking.

According to figure it is clear that t value is within the range of 1.96 to -1.96. Thus at the 95 percent confidence level, executive risk doesn't have significant impact on intention to use online banking. So eighth hypothesis (a) is rejected, while this hypothesis by Kianpoor [27], Maditinos et al [15] is confirmed.

H8b: social risk has a negative impact on intention to use online banking.

According to figure it is clear that t value is outside the range of 1.96 to -1.96 and its value is -3.98. Thus at the 99 percent confidence level, social risk has a negative impact on intention to use online banking. The degree of effect is 0.34, so eighth (b) hypothesis is confirmed. While above hypothesis by Kianpoor [27], Maditinos et al [15] and Lee [6] is rejected.

[Downloaded from mail.ijaor.ir on 2026-11-28]

H8c: time risk has a negative impact on intention to use online banking.

According to figure it is clear that t value is within the range of 1.96 to -1.96. Thus at the 95 percent confidence level, time risk doesn't have significant impact on intention to use online banking, so eighth hypothesis (c) is rejected. The above hypothesis by Kianpoor [27] and Lee [6] is confirmed.

H8d: Financial risk has a negative impact on intention to use online banking.

According to figure it is clear that t value is within the range of 1.96 to -1.96. Thus at the 95 percent confidence level, financial risk doesn't have significant impact on intention to use online banking. Thus eighth hypothesis (d) is rejected. Also this hypothesis in researchers of Kianpoor [27] and Lee [6] is confirmed. While by Maditinos et al [15] is rejected.

H8e: Security risk has a negative impact on the acceptance of online banking.

According to figure it is clear that t value is outside the range of 1.96 to -1.96 and its value is -4.13. Thus At the 99 percent confidence level, security risk has a negative impact on intention to use online banking. The degree of effect is 0.42, so eighth (e) hypothesis is confirmed. This hypothesis is confirmed by Mahmoodi Meymanad [19], Cheng & et al [16], Wang & et al [9], Maditinos and is rejected by Farajian [28].

7 Conclusions and Recommendations

Results of hypotheses show that all the factors influencing the acceptance of online banking such as perceived usefulness, perceived ease of use, perceived enjoyment and quality of internet connection affect intention to use it. Also, regarding to the dimensions of perceptual risk, results indicate that social risks and security risks have a negative impact on the use of online banking services, but a negative impact of executive risk, time and financial is not proved. Thus according to result of hypotheses and research findings, the following recommendations are offered for officials of Refah Bank in order to increase market share in the field of electronic and internet banking, because in addition to staying in the field of competition, have the ability to continue their actions and survive.

1. Based on the results of the first and second hypotheses recommended to bank managers that with more advertising and introduce the services of Internet banking inform utilities and benefits obtained from these services to customers (such as saving time, place, cost, etc) because accordingly, customers' perceptions about utilities affect the use of these services.
2. Based on the results of the third hypothesis suggests to bank managers that internet banking website designed and revised in a way that have the ability to learn easier and easier use. For example: easier access to the website, easier access to menus and sub-menus, etc., also how use and work with website can train to them.
3. According to the fourth, fifth and sixth hypotheses internet banking sites should be attractive because affect customers' perceptions and seem easier. It would be possible with design of specific graphic. Also increasing the quality of these services can be effective in its attractiveness.
4. Based on the results of the seventh hypothesis is recommended that websites are designed in a way that have been ability to load faster on slower internet connections as well.
5. Based on the results of the eighth hypothesis is that executive risk doesn't affect the acceptance of internet banking in Qazvin province, however servers of service providers should have been minimal disruption and devastation.

[Downloaded from mail.ijaor.ir on 2026-11-28]

6. Based on the results of the ninth hypothesis, to reduce social risks can encouraged individuals as a group of (eg, members of a family, contributors group, etc.) to use internet banking.
7. In the tenth and eleventh hypothesis, the impact of time and financial risks on the acceptance of online banking has been rejected, but considering that these hypotheses has been confirmed in many studies, to avoid negative effects of these risks on people's use of online services should be decline time spent and the process of elimination of possible contradiction.
8. Based on the results of the twelfth hypothesis must ensure to customers that personal information and their account information, it is completely confidential in bank.

Since the objective of this study is to focus on the aspect of risk in accepting online banking and according to the perceived risk leads to a reduction in the use of internet banking services, therefore, we provide recommendations to management of the bank in this field:

1) To reduce perceived risk of the customer, the bank on a daily basis without having to ask the customers sends the transaction list to their email or fax.
2) Also bank explain the process of doing internet banking transactions for customers because they know with the details of the process.
3) Since trust to bank led to reduce a perceived risk of customers towards internet banking service, therefore it is recommended that bank during activate the internet banking service determine approximately payment of damages to customers at the time of online crimes and access to their account, because customers be aware of this problem that secured support from a bank will support them (guarantee of compensation in the form customers' accounts hacked or internet fraud).
4) It is recommended that bank informing about different types and methods of online fraud and provide guidance for dealing with crimes. Bank can periodically provide statistic from successful transaction to the transaction failed because make this belief among its members that bank has necessary merit to provide internet banking services.

References

1. Bandura, A. (2002). "Growing primacy of human agency in adaptation and change in the electronic era". European Psychologist, 7(1), 2-16.
2. Joseph, M., & Stone, G. (2003). "An empirical evaluation of US bank customer perception of the impact of technology on service delivery in the banking sector". International Journal of Retail and Distribution Management, 31(4/5). 190-204.
3. Kolodinsky, J.M., Hogarth, J.M., & Hilgert, M.A., (2004). "The adoption of electronic banking by US customers". International Journal of Bank Marketing, 22(4/5). 238-276.
4. Eriksson, K., Kerem, K., & Nilsson, D. (2008). "The adoption of commercial innovations in the former central and eastern European markets: The case of internet banking in Estonia". International Journal of Bank Marketing, 26(3), 154-169.
5. Xue, M., Hitt, L. M., & chen, p. (2011). "Determinants and outcomes of internet banking adoption". Management Science, 57(2),pp. 291-307.
6. Lee, M.C. (2008), "Factors influencing the adoption of internet banking: an integration of TAM and TPB with perceived risk and perceived benefit", Electronic Commerce Research and Application, Vol.8 No. 3, pp. 130-141.
7. Guriting, P. and Ndubisi, N.O. (2006), "Borneo online banking evaluating customer perceptions and behavioral intention", Management Research News, Vol. 29 Nos 1/2, pp. 6-15.
8. Pikkarainen, T., Pikkarainen, K., Karjaluoto, H. & Pahnila, S. (2004). "Consumer acceptance of online banking: an extension of the technology acceptance model". Internet Research, 14(3), pp. 224-235.
9. Wang, YL., Wang, YU., Lin, H., Tang, T. (2003). "Determinates of user acceptance of internet banking: An empirical study", *International Journal of Industry Management*, 14,5 , pp.501-519.

[Downloaded from mail.ijaor.ir on 2026-11-28]

10. Venkatesh, V. (1999), "Creating favorable user perceptions: exploring the role of intrinsic motivation, and emotion into the technology acceptance model", Information Systems Research, Vol. 11 No. 4, pp. 342-365.
11. O'connell, B., (1996), "Australian banking on the internet – fact or fiction?", The Australian Banker, December, pp. 212-224.
12. Yiu, C.S., Grant, Y.K. and Edgar, D. (2007), "Factors affecting the adoption of internet banking in Hong Kong – implications for the banking sector", International Journal of Information Management, Vol. 2, pp. 336-351.
13. Forsuthe, S.M. and Shi, B. (2003), "Consumer patronage and risk perceptions in internet shopping", Journal of Business Resources, Vol. 56, pp. 867-875.
14. Kusima, T., Laukkanen, T. and Hilyunen. M. (2007), "mapping the reasons for resistance to internet banking: a means-end approach", International Journal of Information Management, Vol. 27 No. 2, pp. 75-85.
15. Maditinos, D., Chatzoudes, D., Sarigiannidis, L. (2013). "An examination of the critical factors affecting consumer acceptance of online banking: A focus on the dimensions of risk". Journal of Systems and Information. Vol.15 No.1. pp. 97-116.
16. Cheng, T.C.E., Lam, D.Y.C. and Yeung, A.C.L. (2006)," Adoption of internet banking: an empirical study in Hong Kong", *Decision Support System*, Vol. 42 No. 3, pp. 1558-1572.
17. Teo, T.S.H., Lim, V.K.G. and Lai, R.Y.C. (1999), "Intrinsic and extrinsic motivation in internet usage", Omega, Vol. 27 No. 1, pp. 25-37.
18. Farsizadeh,H;Hosseini,M;Ahmadi Nejad,M.(2012). Evaluation of internet banking acceptance by customers using model revised technology acceptance in Melli Bank of Iran. "Iranian Journal of Business Management, No. 12, pp 19-36.
19. Mahmoodi,Meymanad;Foroozandeh Dehkordi,L.V;Ahmadinejad,M.(2009). Model of Internet banking by customers of Melli bank", Iranian Journal of Business Management Explorations, Vol 1, No. 2, pp 1-30.
20. Seyed Javadin,S.R;Yazdani,Sh.(2005). Assessment of the factors affecting customers intention to use Internet banking service (Case Study: Saman Bank- Iran). "Iranian Journal of Knowledge Management, No. 70, pp 45-61.
21. Salavati.M. (2004). Studying effective Variables on the acceptance of electronic banking technologies in National Bank – Iran, Master Thesis, university of Mazandaran, Iran.
22. Al-Somali, S.A., Gholami, R. and Clegg, B. (2009), "An investigation into the acceptance of online banking in Saudi Arabia", Technovation, Vol. 29, pp. 130-141.
23. Rotchanakitumnuai, S., Speece, M. (2003). "Barriers to internet banking adoption: A qualitative study among corporate customers in Thailand", International Journal of Bank Marketing, 21(6), 312-323.
24. Eriksson, K., Kerem, K., & Nilsson, D. (2005). "Customer acceptanceof internet banking in Estonia", International Journal of Bank Marketing, Vol.23, No.2, pp. 200-216.
25. Barker Steege, L., Shik Yoon, H., (2013). "Development of a quantitative model of the impact of customers personality and perception on internet banking use". Computers in Human Behavior 29.pp 1133-1141.
26. Celik, H., (2008). "What determines Turkish customers' acceptance of internet banking?". International Journal of Bank Marketing, Vol. 26, No. 5, pp. 353-370.
27. Kianpour,R;Hanafizadeh,P;Khedmatgozar,H.(2010). The Role of Perceived dimension of banks customers in acceptance of internet banking of Iran ", Journal of Iranian Management Science, No. 20, pp 49-68.
28. Farajian Sahi.M.(2006). Assessment of the factors associated with intention to use Internet banking in Mellat Bank of Iran". Master thesis, University of Shahid Beheshti

[Downloaded from mail.ijaor.ir on 2026-11-28]