

## **Barriers and Challenges in the Implementation and Improvement of Electronic Banking in the Private Banks of West Province**

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### **ABSTRACT**

Technology advancement, especially in the field of information technology and telecommunication, has changed the banking industry. Several studies were proposed the development and advancement of electronic banking, but there is a little bit in the field of banking challenges. This research trying to study the challenges and obstacles in the implementation and improvement of the electronic banking. This study is descriptive that has been implemented in the survey method. In this study of 170 community leaders and experts familiar with electronic banking, just 118 people were chosen as a model of stratified random sampling method, that 111 were answered completely and the other were deleted. To collect the research's data have been used the library method include of some instrument such as, books, papers and thesis and field methods included questionnaires distribute. In this study dependent variables are technical, organizational and cost factors. The electronic banking is a independent variable. In this study T and Friedman's test were used to assess and review questions. Organizational factors in this research was recognized as the greatest challenge in implementing and improving banking. Although, cost and management factors were considered in the second and third priority of challenges and obstacles in the implementation and improvement of electronic banking in the private banks of the west of Mazandaran, but the technical factors were excluded.

**KEYWORDS:** Technical factors, Management factors, Organizational factors, Cost factors, Electronic banking.

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### **INTRODUCTION**

Global change through technology and information technology, Internet and consequently e-government and e-commerce which in turn is derived from information technology and has been created profound transformation in communication and information transfer process. The emergence of phenomena such as electronic banking and electronic business that are the effective methods in increasing trading and communicating with customers and also the growing list of users of them, has attracted the attention of many jobs. Where in most cases, in addition to the physical location to provide services, virtual space in order to increase the ease of software and customer relationship has been created by site. This led to activities such as e-learning, e-banking and other electronic services. Due to the ease, speed, accuracy and security of this method, more countries fell to think of using this new technology that this led to the creation of the electronic banking and electronic services.

#### **Problem Expression**

Iran's position in the exploitation of information and communication technologies, is aligns with other developing countries of this technologies. It can state by this explanation that our country still live in the in the initial steps in the development program of ICT (Information and communication Technology) and required that at first provide ICT development beds for the development and improvement of electronic banking. Expansion of suitable communication infrastructure can be effective to incorporate the banking system with electronic devices. Hardware and software development tools in the field of electronic banking like ATM, digital telephone systems, Credit cards, smart cards and..., preparing legal frameworks and systematize electronic banking and spread the general culture of the Electronic Banking are including the reasons for Iran's electronic banking deposit. In our country, also this aspect is fully felt the importance of using information technology and consequently measures such as the use of ATM systems, LAN (Local Area Network), WAN(World Area Network) network and providing customer service via the Internet is being done. But, what are the problems in the implementation and improvement of electronic banking in Iran? Do the inter

organization factors (technological, managerial, organizational, cost) a role in the implementation and improvement of electronic banking?

### Research Background

Amade & Jafarpour (2009) in his research as barriers and develop solutions in electronic banking in the Private Bank of country achieved this result that the main identified barriers were cultural - social, legal - juridical, managerial, technical and financial - technological barriers.

Amini (2006) in his research as identify the factors influencing in the improvement and development of electronic banking at Parsian Bank Branches in Tehran, conducted a research and identify the technical and managerial aspects of structural and cost and the effects of these factors to improve and implementation of electronic banking in Parsian Bank. In this study, organizational factors in first order, technological factors in the second order, management factors in the third and cost factors, were placed in the fourth order.

Eyni(2008) in his research as barriers and challenges in implementing and improving Electronic Banking in the Parsian Bank was examined technical, managerial, organizational and cost factors where organizational factors, technical factors, managerial factors and cost factors were in the first, second, third and fourth order, respectively.

Sadeghi (2004) in his research as human, structural and technical factors help in the establishment and development of electronic banking in Iran, identified the infrastructure dimensions and human factors and how technical factors and human impact in improving the structure of electronic banking. He stated the impact of technical, managerial and financial and social factors in the improvement and development of electronic banking in Iran and expresses that training and provides significant services at the community level may have pivotal role in improving and attracting of customer and pushing traditional banking system toward electronic banking system.

Heiki *et al.* (2002) in his research as requirements for successful deployment of electronic banking in Finland began to study the factors affecting on the development of electronic banking and pointed out to the influence of government policy and information security.

Dube *et al.* (2009) in his research as Development and use of ICT in African Banks and the factors affecting on the development of electronic banking obtained the infrastructure (Availability, operation and maintenance), access to certain facilities available to the public and related issues, appropriate capacity at different levels and experience with regard to encouraging the use of mobile phones in the field of electronic banking.

Jiagain Yang & *et al.* (2007) in his research studied the new form of challenges electronic banking challenges in suburban areas. In this experimental study, five main problems in the field of electronic banking were considered.

Shukla *et al.* (2011) in his research as e-banking: Problems and prospects, at first, raised the risks of technological change and expressed that this changes must be considered carefully. Technologies must be updated and cost effective and customer friendly. In order to spread the electronic banking, they expressed some factors such as risk identification, security issues, and the need for Internet, customer support services and technological problems and security which raised more financial security and privacy challenges and finally stated that awareness of the problems and risks, enables individuals to take advantage of the safer and more secure banks.

### Research Questions

- 1- Do technical factors is a barrier to the implementation and improvement of electronic banking in private banks?
- 2- Do managerial factors is a barrier to the implementation and improvement of electronic banking in private banks?
- 3- Do organizational factors is a barrier to the implementation and improvement of electronic banking in private banks?
- 4- Do cost factors is a barrier to the implementation and improvement of electronic banking in private banks?

## RESEARCH METHODOLOGY

The study was descriptive survey. The study population is included all employees of private banks of West province by a number of 170 people who are familiar with electronic banking. The stratified random sampling was used in this study where 118 persons were estimated based on the Morgan Krejcie. Among this number, 111 persons were completed the questionnaire. So, the sample

size was chosen to 111 people who included about 66 percent of the total population. The study used questionnaires to collect required information.

### Findings

**Question 1:** Do technical factors are a barrier to the implementation and improvement of electronic banking in private banks of West Mazandran?

Table 1. Statistical characteristics of technical factors variable

variable	Number	Mean	Standard deviation	Error of standard deviation
technical	111	2/93	0/464	

As seen in the above Table, the average group of technical factors is 2/93 with a standard deviation of 0/464. This average is less than desirable average that is 3. In order to ensure the evaluation of significant difference between current and desired performance data from the performance was analyzed using single sample t-test. The result is shown in the table below.

Table 2. Single sample T-test results for comparison of technical factors

Situation	Mean	T	Freedom degree	Significance level
Current	2/93	-1/686	110	0/095
Desired	3			
Difference	0/074			

As can be seen T was obtained from the comparison between existing and desired average is not statistically significant. ( $T=11/686$ ,  $p=0/095$ ). Thus we can conclude that technical factors are not a barrier to the implementation and improvement of electronic banking in private banks of West Mazandran.

To investigate the effect of technical factors in the implementation and improvement of electronic banking in terms of sex, position, education and work experience, T test results are shown in Table 3.

Table 3. T test results on the effect of technical factors in the implementation and improvement of electronic banking in terms of variables

Row	variable	Changing levels	Mean	Standard deviation	T	df	p
1	sex	Female	2/97	0/492	0/766	109	0/445
		Male	2/90	0/446			
2	position	Employee	2/93	0/465	0/205	109	0/838
		Chief	2/90	0/475			
3	education	BA	2/96	0/451	1/610	109	0/110
		MA	2/78	0/504			
4	Work experience	Less than 10 years	2/93	0/494	0/170	109	0/866
		More than 10 years	2/92	0/441			

The data of first row of the above table shows the average effect of technical factors in the implementation and improvement of electronic banking in terms of respondents' gender. T value and the obtained significance level ( $p=0/445$  and  $T=0/766$ ) shows that respondents with different gender believe that technical factors is not effective in the implementation and improvement of electronic banking.

The data of second row of the above table shows the average effect of technical factors in the implementation and improvement of electronic banking in terms of respondents' position. T-value is not significance ( $t=0/205$  and  $p=0/838$ ) and this result shows that there is no significant differences between mean comments of the group about technical factors are a barrier to the implementation and improvement of electronic banking.

The data of third row of the above table shows the average effect of technical factors in the implementation and improvement of electronic banking in terms of respondents' education. As we can see, T-value is not significance ( $t=1/610$  and  $p=0/110$ ) and this result shows that there is no significant differences between mean comments of the group about technical factors are a barrier to the implementation and improvement of electronic banking.

The data of fourth row of the above table shows the average effect of technical factors in the implementation and improvement of electronic banking in terms of respondents' work experiences. As we can see, T-value is not significance ( $t=0/170$  and  $p=0/866$ ) and this result shows that there is no

significant differences between mean comments of the group about technical factors are a barrier to the implementation and improvement of electronic banking.

**Question 2:** Do managerial factors are a barrier to the implementation and improvement of electronic banking in private banks of West Mazandran?

Table 4. Statistical characteristics of managerial factors variable

variable	Number	Mean	Standard deviation	Error of standard deviation
Managerial	111	3/4	0/446	0/042

As seen in the above Table, the average group of managerial factors is 3/4 with a standard deviation of 0/446. This average is more than desirable average that is 3. In order to ensure the evaluation of significant difference between current and desired performance data from the performance was analyzed using single sample t-test. The result is shown in the table 5.

Table 5. Single sample T-test results for comparison of managerial factors

Situation	Mean	T	Freedom degree	Significance level
Current	3/4	9/322	110	0/000
Desired	3			
Difference	+0/4			

As can be seen T was obtained from the comparison between existing and desired average is statistically significant. ( $T=9/322$ ,  $p=0/000$ ). Thus we can conclude that a managerial factor is a barrier to the implementation and improvement of electronic banking in private banks of West Mazandran. To investigate the effect of managerial factors in the implementation and improvement of electronic banking in terms of sex, position, education and work experience, T test results are shown in Table 6.

Table 6. T test results on the effect of managerial factors in the implementation and improvement of electronic banking in terms of variables

Row	variable	Changing levels	Mean	Standard deviation	T	df	p
1	sex	Female	3/36	0/44	-0/630	109	0/530
		Male	3/41	0/45			
2	position	Employee	3/357	0/45	-1/224	109	0/224
		Chief	3/53	0/39			
3	education	BA	3/41	0/42	1/130	109	0/261
		MA	3/29	0/53			
4	Work experience	Less than 10 years	3/33	0/44			
		More than 10 years	3/44	0/44	-1/202	109	0/229

The data of first row of the above table shows the average effect of managerial factors in the implementation and improvement of electronic banking in terms of respondents' gender. T value and the obtained significance level ( $T=-630$  and  $p=0/530$ ) shows that respondents with different gender believe that technical factors is effective in the implementation and improvement of electronic banking.

The data of second row of the above table shows the average effect of managerial factors in the implementation and improvement of electronic banking in terms of respondents' position. T-value is not significance ( $t=-1/224$  and  $p=0/224$ ) and this result shows that there is significant differences between mean comments of the group about managerial factors are a barrier to the implementation and improvement of electronic banking.

The data of third row of the above table shows the average effect of managerial factors in the implementation and improvement of electronic banking in terms of respondents' education. As we can see, T-value is significance ( $t=1/130$  and  $p=0/261$ ) and this result shows that there is significant differences between mean comments of the group about managerial factors are a barrier to the implementation and improvement of electronic banking.

The data of fourth row of the above table shows the average effect of managerial factors in the implementation and improvement of electronic banking in terms of respondents' work experiences. As we can see, T-value is significance ( $t=11/209$  and  $p=0/229$ ) and this result shows that there is no significant differences between mean comments of the group about managerial factors are a barrier to the implementation and improvement of electronic banking.

**Question 3:** Do organizational factors are a barrier to the implementation and improvement of electronic banking in private banks?

Table 8. Statistical characteristics of organizational factors variable

variable	Number	Mean	Standard deviation	Error of standard deviation
organizational	111	3/4	0/446	0/042

As seen in the above Table, the average group of organizational factors is 3/439 with a standard deviation of 0/4020. This average is more than desirable average that is 3. In order to ensure the evaluation of significant difference between current and desired performance data from the performance was analyzed using single sample t-test. The result is shown in the table 8.

Table 8. Single sample T-test results for comparison of organizational factors

Situation	Mean	T	Freedom degree	Significance level
Current	3/93	21/338	110	0/000
Desired	3			
Difference	0/93			

As can be seen T was obtained from the comparison between existing and desired average is statistically significant. (T=21/338, p=0/000). Thus we can conclude that a organizational factor is a barrier to the implementation and improvement of electronic banking in private banks of West Mazandran.

To investigate the effect of organizational factors in the implementation and improvement of electronic banking in terms of sex, position, education and work experience, T test results are shown in Table 9.

Table 6. T test results on the effect of organizational factors in the implementation and improvement of electronic banking in terms of variables

Row	variable	Changing levels	Mean	Standard deviation	T	df	p
1	sex	Female	3/87	0/43	-1/02	109	0/306
		Male	3/96	0/47			
2	position	Employee	3/90	0/47	-1/41	109	0/161
		Chief	4/09	0/45			
3	education	BA	3/94	0/45	0/88	109	0/377
		MA	3/85	0/48			
4	Work experience	Less than 10 years	3/92	0/43	-0/188	109	0/851
		More than 10 years	3/93	0/48			

The data of first row of the above table shows the average effect of organizational factors in the implementation and improvement of electronic banking in terms of respondents' gender. T value and the obtained significance level (T=-1/029 and p=0/306) shows that respondents with different gender believe that technical factors is effective in the implementation and improvement of electronic banking.

The data of second row of the above table shows the average effect of organizational factors in the implementation and improvement of electronic banking in terms of respondents' position. T-value is not significance (t=-1/412 and p=0/161) and this result shows that there is significant differences between mean comments of the group about technical factors are a barrier to the implementation and improvement of electronic banking.

The data of third row of the above table shows the average effect of organizational factors in the implementation and improvement of electronic banking in terms of respondents' education. As we can see, T-value is significance (t=0/877 and p=0/377) and this result shows that there is significant differences between mean comments of the group about organizational factors are a barrier to the implementation and improvement of electronic banking.

The data of fourth row of the above table shows the average effect of organizational factors in the implementation and improvement of electronic banking in terms of respondents' work experiences. As we can see, T-value is significance (t=0/188 and p=0/85) and this result shows that there is no significant differences between mean comments of the group about organizational factors are a barrier to the implementation and improvement of electronic banking.

**Question 4:** Do cost factors is a barrier to the implementation and improvement of electronic banking in private banks of West Mazandran?

Table 10. Statistical characteristics of cost factors variable

variable	Number	Mean	Standard deviation	Error of standard deviation
Cost	111	3/4811	0/5011	0/475

As seen in the above Table, the average group of cost factors is 3/4810 with a standard deviation of 0/5011. This average is more than desirable average that is 3. In order to ensure the evaluation of significant difference between current and desired performance data from the performance was analyzed using single sample t-test. The result is shown in the table 11.

Table 11. Single sample T-test results for comparison of cost factors

Situation	Mean	T	Freedom degree	Significance level
Current	3/93	21/338	110	0/000
Desired	3			
Difference	0/93			

As can be seen T was obtained from the comparison between existing and desired average is statistically significant. ( $T=10/113$ ,  $p=0/000$ ). Thus we can conclude that a cost factor is a barrier to the implementation and improvement of electronic banking in private banks of West Mazandran.

To investigate the effect of cost factors in the implementation and improvement of electronic banking in terms of sex, position, education and work experience, T test results are shown in Table 12.

Table 12. T test results on the effect of cost factors in the implementation and improvement of electronic banking in terms of variables

Row	variable	Changing levels	Mean	Standard deviation	T	df	p
1	sex	Female	3/46	0/51	-0/24	109	0/804
		Male	3/49	0/49			
2	position	Employee	3/45	0/51	-1/18	109	0/241
		Chief	3/62	0/38			
3	education	BA	3/5	0/47	0/82	109	0/413
		MA	2/4	0/61			
4	Work experience	Less than 10 years	3/45	0/46	0/506	109	0/614
		More than 10 years	3/5	0/53			

The data of first row of the above table shows the average effect of cost factors in the implementation and improvement of electronic banking in terms of respondents' gender. T value and the obtained significance level ( $T=-0/249$  and  $p=0/804$ ) shows that respondents with different gender believe that cost factors is effective in the implementation and improvement of electronic banking.

The data of second row of the above table shows the average effect of cost factors in the implementation and improvement of electronic banking in terms of respondents' position. T-value is not significance ( $t=1/180$  and  $p=0/241$ ) and this result shows that there is significant differences between mean comments of the group about cost factors are a barrier to the implementation and improvement of electronic banking.

The data of third row of the above table shows the average effect of cost factors in the implementation and improvement of electronic banking in terms of respondents' education. As we can see, T-value is significance ( $t=0/822$  and  $p=0/413$ ) and this result shows that there is significant differences between mean comments of the group about cost factors are a barrier to the implementation and improvement of electronic banking.

The data of fourth row of the above table shows the average effect of cost factors in the implementation and improvement of electronic banking in terms of respondents' work experiences. As we can see, T-value is significance ( $t=0/506$  and  $p=0/614$ ) and this result shows that there is significant differences between mean comments of the group about cost factors are a barrier to the implementation and improvement of electronic banking.

## Conclusion

The results on technical factors show that average in the present situation, is equal to 2.93 and less than desirable, which is equal to 3. T obtained from the comparison between the average rate in the current and favorable situation is not statistically significant. ( $T=-1/686$ ,  $p=0.095$ ). Thus we can conclude that technical factors are not one of the obstacles in the implementation and improvement of electronic banking in private banks of West Mazandran which this research and Jafarpour (2009) also confirmed the same result. In the Eyni (2008), Amini (2006) and Shukla (2011) Jiagin Yang (2007) and Heikki (2002), technical factors were confirmed. The above explanation can be said that in this study, technical factors in different private banks (Parsian, Pasargad, Sina, Saman, Sarmayeh, Karafarin, Eghtesad Novin). Finally, concluding remarks by respondents conclude that technical factors can not

be raised as challenges in implementing and improving banking. Eyni(2008), Amini (2006) studied only Parsian Banks and Shukla (2011) Jiagin Yang (2007) and Heikki (2002) generally were performed in the country and technical factors as challenges in implementing and improving banking was approved.

The results on the second component, that is, managerial factors show that average in the present situation, is equal to 3/4 and more than desirable, which is equal to 3. T obtained from two average rates in the current and favorable situation is statistically significant. ( $T=9/322$ ,  $p=0.000$ ). Thus we can conclude that managerial factors are one of the obstacles in the implementation and improvement of electronic banking which this research also confirmed the same result in the Amini (2006), Eyni (2008), and Shukla (2011) Jiagin Yang (2007) and Heikki (2002). The above explanation can be said that respondent state showed that lacking suitable planning and management in risk areas, lack of management support, lack of sufficient commitment and poor management in the field of information technology were factors that were approved under the management challenges and all the above studies were focused on this issue.

The results on the third component, that is, organizational factors show that average in the present situation, is equal to 3/93 and more than desirable, which is equal to 3. T obtained from two average rates in the current and favorable situation is statistically significant. ( $T=21/338$ ,  $p=0.000$ ). Thus we can conclude that organizational factors are one of the obstacles in the implementation and improvement of electronic banking which this research also confirmed the same result in the Amini (2006), Eyni (2008), and Dube (2009) Jiagin Yang (2007). The above explanation can be said that lack of adequate infrastructure for information technology and lack of coordination and the inappropriateness of current procedures and too replacement of managers are some cases that the above research mentioned them.

The results on the fourth component, that is, cost factors show that average in the present situation, is equal to 3/4811 and more than desirable, which is equal to 3. T obtained from two average rates in the current and favorable situation is statistically significant. ( $T=10/113$ ,  $p=0.000$ ). Thus we can conclude that cost factors are one of the obstacles in the implementation and improvement of electronic banking which this research also confirmed the same result in the Amini (2006), Eyni (2008), and Dube (2009) Jiagin Yang (2007). The above explanation can be said that investment and use of domestic and foreign companies in this case and invest more cost to updates and enhance system security and promotions for further use and safer of electronic banking services is required which above research showed up this point.

The results showed that the technical factors were not approved as challenges in the implementation and improvement of electronic banking. While respondents expressed that supply of suitable hardware for the electronic banking was the most important and security of information exchange atmosphere was least important in this regard. The results showed that the managerial factors were approved as challenges in the implementation and improvement of electronic banking. Respondents expressed the views agreement of manage to ensuring customer satisfaction as the most important factor and expressed the degree of alignment with the work of education as the least important indicators. The results showed that the organizational factors were approved as challenges in the implementation and improvement of electronic banking. While respondents expressed that standards related to electronic banking executives should be considered. The results in cost factors showed that these factors were approved as challenges in the implementation and improvement of electronic banking and they stated that providing initial cost of based systems on electronic banking is necessary.

In this study, organizational factors, cost factors, management factors were in the first, second and third order, respectively, and technical factors was not confirmed. While, the management agrees to provide customer satisfaction (question 16 of questionnaire) was consider as the most important factor in this research and costs have been received from customers for the electronic banking services (question 29 of questionnaire) was consider as the least effective factor.

### **Recommendations**

1- Due to this issue that organizational factors was consider as the first challenge in the implementation and improvement of electronic banking, it is suggested that managers needed more careful in formulating rules and standards and coordination must be done among agencies and departments, show greater attention to staff training and to avoid excessive displacement of managers.

2- Due to this issue that cost factors was consider as the second challenge in the implementation and improvement of electronic banking, it is suggested that investment costs in the context of



telecommunication take place through increased private sector participation and also foreign investment to finance Electronic banking systems.

3- Due to this issue that managerial factors was consider as the third challenge in the implementation and improvement of electronic banking, it is suggested that managers try to ensure customer satisfaction and using short-term and long term planning can do required actions in risk and consequences of it.

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