

Factors affecting consumer acceptance of mobile banking in Tejarat Bank in city of Karaj, Iran

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ABSTRACT

Objective: The growth in mobile phone usage in the last decade has been pretty amazing. Today, for most people mobile phones are a necessity. So that you have to carry them wherever you go. Mobile technology has changed commercial and business behaviors of mobile users. **Methodology:** Commerce via mobile is a business solution nowadays and has led to a change in existing businesses. Among these services, is mobile banking. It should be said that mobile banking is one of the primary components to help expansion of business operations using mobiles. The main objective of this study is to investigate factors influencing the adoption of mobile banking services by customers and testing six hypotheses. **Results:** The present research is casual by method and nature, survey by implementation, and practical in purpose. The population in this study, customers are Tejarat Bank city customers in Karaj in the year 2015.Sh. To achieve objectives of the research, 384 questionnaires distributed among the bank customers and then analyzed. In this study all considered assumptions confirmed. **Conclusion:** Finally, it can be said that mobile phone services can lead to creation of comparative advantage and an acceptable profitability compared with other banks' services.

1. Introduction

Mobile phones have launched a terrible storm. The payment industry is soaring towards the peak thanks to mobile wallets which have potential to become an everyday payment tool. Every day consumers become more familiar with the concept of mobile payments and more companies begin to invest in the field of mobile payments. Developments in technology, such as high speed internet, more processing power, and the arrival of smartphones in people's livings, have led to more space to provide various financial services on mobile phones. Currently, users in different countries are able to check their accounts via mobile phones, send money to their friends, and settle received checks their your account. The rapid evolution of mobile banking applications and users increased demands of this application suggests that mobile payments is going to become the main method of payment in near future.

The fact is that mobile banking users are bound to use mobile phones to carry out financial transactions, and that means the future of mobile banking apps can meet all your day's payings. Banking using Mobile is one of the novelst electronic distribution channels for banks which technology considers a vital element for their customers' comfort and brings value added for the bank. Since the power of mobile technologies results from "every time-everywhere connection" that provides numerous opportunities for innovation in procedures and services.

Banking services via mobile phone bring comfort and speedity in banking operations, together with a reduction in related bank charges. so, todays, banks are interested in expanding their market through the provision of banking services via. Mobile phones. Today, most of banks are faced with a dynamic environment and all banks prefer to focus on attracting new customers and also old customers retention, due to rapid changes in competitive situations and market conditions. On the other hand consumers will have more opportunities to compare services and customers' judgments about the bank based on the bank ability in helping customers to solve problems and develop their businesses. Security, transaction speed, user-friendliness, ease of use, reliability and privacy issues, are among the most important factors in selecting banks by the customer. Therefore, studying factors affecting the adoption of mobile banking among customers in Iran requires a comprehensive investigation. Regarding the importance of using mobile banking as one of the bank position

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stabilizing factors in competitive environment the present study examines the factors affecting the mobile phone banking acceptance by customers. This research is related with adoption of mobile banking services by Tejarat Bank customers in city of Karaj and aims to attain a deeper insight of factors influencing the adoption of mobile banking services by bank customers in Iran.

Electronic Banking: Electronic Banking, a banking service that was first used in U.S.A. in 1995 and then quickly spread among other countries. Electronic banking is consist of providing information or services by the bank for customers through electronic communication channels (Limayem et al., 2000). A number of e-commerce transactions show that customers intent for employing online interactions is having access to a powerful predictor of customers actual expectations in e-commerce transactions (Liker and Sindi, 1997; Chen et al., 2002).

2. Materials and methods

2.1 The theoretical framework and conceptual model for research

The Technology Acceptance Model: Davis et al. (1989) proposed technology acceptance model based on the theory of justified act and found that this model can better explain user acceptance of information technology (King and He, 2006) .29. Technology Acceptance Model is based on the belief that the acceptance of information systems is determined by two main variables including our perception of usefulness and perception of ease of use (Meymand Mahmoudi, 2012). Technology Acceptance Model suggests these two perception are determinant of patrons' attitude toward for the use of ICT; Ultimately, the person's intent is main factor that leads to the actual use of information systems and technology and communications.

According to The Technology Acceptance Model, the use of information technology is characterized by the intention for using a particular system, and that intention, by itself, can be determined through measuring usefulness of technology in the user's view and system ease of use. The Technology Acceptance Model assumes that the perceived usefulness and perceived ease of use has a direct effect on people's attitudes toward the use of information systems and technology and communications (Akturan and Tezcan (2012). The technology acceptance models has been used in a wide variety of researches aimed to study acceptance in technologies such as email, word processor, Web sites, enterprise resource planning systems, and e-commerce. Studies show that understanding of ease of use affects the intention to use and this may be the effect directly or indirectly through its effects of usefulness (Meymand Mahmoudi, 2012). A Research based on the technology acceptance model performed in the field of Internet banking, has recognized a positive effect of ease of use on perceived usefulness (Bahmanziari et al., 2003). In another study in the field of mobile services it has been demonstrated that perceived ease of use have a positive effect on perceived usefulness. In a very wide range of researchers like Thompson et al. (1999) and Moon and Kim (2001). Have recognized the positive effect of perceived usefulness on the users' intent to use. Perceived usefulness is one of the effective factors on attitude toward usage and the intention to use systems. the impact of perceived usefulness on the attitude and the intention to use has been proved during a study about acceptance mobile data services. Another factor affecting the intention to use, is perceived advantage, Akturan and Tezcan (2012) proved the impact of perceived benefits on intention to use mobile banking in a study based on mobile banking. The present analytical framework is based on Davis technology acceptance model involving variable and involves perceived benefits as variables which derived from Tezcan and Akturan research and in 2012 and is depicted in Figure.

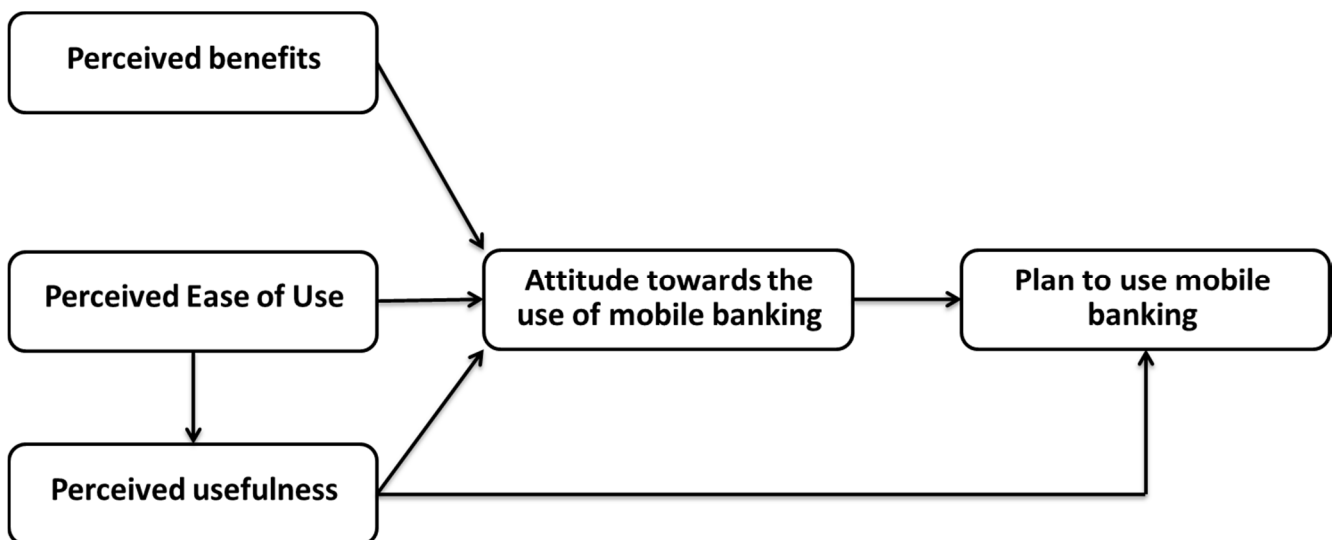


Figure 1. Conceptual model, source: Akturan and Tezcan (2012)

Perceived Ease of Use: The first factor in the technology acceptance model is the perceived ease of use (Sarlak et al., 2012). It is the degree to which a person believes there is a little or no need of physical and mental effort to use a particular system.(Siegel, 2008, 15). In fact, since information technologies are easy to use, are less threatening people (Meymand Mahmoudi, 2012).

Perceived Usefulness: perceived usefulness is the second factor in the technology acceptance model, perceived usefulness defines as "the degree to which a person believes that using a particular system in the organization improves his job performance".

The perceived benefits: the intention to use online banking is primarily influenced by the perceived benefit. Consumers, generally, used to perform a cost-benefit analysis when choosing a method for deciding to buy a product. Perceived benefits in banking based on mobile phones is a kind of cognitive and emotional evaluation of the benefits and advantages of the service. The perceived benefits is consumers' assessment of the products value. this value is attained through comparison between the customer benefits from a product and the money customer pay for that product.

Attitudes towards use of mobile banking: The mental attitude of a tendency to act in order to agree or disagree with a particular issue. In other words, attitude is a more or less stable state in person's mental organization which prepares him to react clearly toward an objected or a situation related to him. Allport defined attitude as a state of mental readiness to react which form through experience and has a dynamic and direct impact on behavior. Attitudes are determinant of behaviors and this assumption imply that by changing people's attitudes we can change their behavior. In technology acceptance models attitude towards the use is defined as the amount of as the estimated impact that a person attains through using a particular system in his work (Sarлак et al., 2012).

Intention to use mobile banking: the intention to use mobile banking is the possibility of applying the system by person (Seyyed Javadin and Yazdani, 2005).

2.2 The research hypotheses are established as follows:

The first hypothesis: perceived ease of use has an impact on attitudes towards the use of mobile banking.

The second hypothesis: perceived ease of use has an effect on perceived usefulness.

The third hypothesis: perceived benefits have an impact on the attitude toward the use of mobile banking.

The fourth hypothesis: perceived usefulness affects attitude towards the use of mobile banking.

The fifth hypothesis: perceived usefulness affects the intention to use mobile banking.

The sixth hypothesis: attitude toward using mobile phone banking affects of the intention of using mobile phone banking.

2.3 Research Methodology

The research method is a set of rules, tools and far more valid and reliable methods for an evaluation of facts, discovering the unknowns and achieving solutions for problems. This study is an applied study considering purpose and, in terms of methodology and nature is a cause and effect study and will be categorized in the survey branch. The population in this study is Karaj city Tejarat Bank customers who have experienced using mobile phone banking services. However, since gathering data of all people of statistical data collection was virtually impossible (even if it is possible, is not reasonable in terms of time, cost and other requirements), a sample of the population was selected. The available sampling method is used to collect the data. Therefore, the questionnaire was distributed among the people who were bank customers and have experienced using mobile phone banking services. So, researcher had to ask individuals if they are bank customers, and if they had ever used mobile phone banking services? Regarding infinity of the community, Morgan & Kerjesej table is used to determine the sample size. So, using this table, sample population size in this study is 384 persons. In this study, data were collected through field study. In field study, distributing questionnaires is one of the most for data collection. To meet the objectives of this study, anonymous questionnaire contains 23 questions were used to gather information which were completed by customers. At the beginning of the questionnaire some questions regarding the demographic properties of the population are asked. Questions are based on the ordinal scale and five-point Likert spectrum including five spectrums ranging from very low, low, medium, high and very high, and has been classified based on six assumptions of the study.

Table 1. Composition of the questionnaire variables and research

Questions	Variables
1 to 5	Perceived ease of use
6 to 9	Perceived usefulness
10 to 15	Perceived benefits
16 to 19	Intent
20 to 23	Attitude

Since Akturan and Tezcan's standardized questionnaire is used in this study, so measuring instrument used in the research is of ample validity and this validity can be considered a content validity. A set of negotiations and consultations have been held in order to ensure the validity of questionnaires with a number of experts.

Measurement tool reliability or trustworthiness are other factors to be considered in a research. The purpose of assessing reliability of a device is that if a desired characteristics measured again with the same or similar means comparable to that device under the same conditions, obtained results can be similar, accurate and reliable. Cronbach's alpha is used to determine the reliability. According to N. Nali, if Cronbach's alpha is greater than 0.7 then the result is valid. In this study, Cronbach's alpha has been used to determine the reliability of the method.

$$\alpha = \frac{k}{k-1} \left(1 - \frac{\sum_{i=1}^k S_i^2}{\sigma^2} \right) \quad (1)$$

Or

$$\alpha = \frac{k\bar{C}}{\bar{V} + (k-1)\bar{C}} \quad (2)$$

This method is used for calculating the internal consistency of the measuring instrument that measure different characteristics. In general, Cronbach's alpha can be calculated using one the following formulas: Where k is the number of questions, question no. i th variance, all questions variance, mean of variance between questions, and questions' mean of variance. To do this, a pre-test with a prototype containing 30 questionnaires is conducted, and then using the data obtained from questionnaires and SPSS software, reliability coefficient is calculated with Cronbach's alpha. In addition, we calculate Cronbach's alpha in case of elimination any of questions to neutralize negative impact on the Cronbach's alpha.

Table 2. Cronbach's alpha coefficient for the removal of any items

No question	Cronbach's alpha for the removal of question	No question	Cronbach's alpha for the removal of question
1	0.829	13	0.833
2	0.831	14	0.857
3	0.827	15	0.839
4	0.826	16	0.826
5	0.838	17	0.828
6	0.829	18	0.829
7	0.827	19	0.834
8	0.830	20	0.835
9	0.825	21	0.828
10	0.846	22	0.848
11	0.826	23	0.833
12	0.827	Total	0.836

3. Discussion and results

3.1 results

Before testing the study hypotheses, it should be determined that the collected data has either a normal or abnormal distribution. In case of normal distribution of collected data, parametric tests can be used to test the hypotheses and non-parametric tests are used for abnormalities. At this stage, we start to examine the results of Kolmogorov-Smirnov test for each variable and choose the appropriate test for determining accuracy of research hypotheses. The research data has normal distribution for the respondents. The research data has not normal distribution for the respondents.

Table 3. Results of the test for normality of variables

Abundance	K-S	Dimension	The significance level	Confirmed the hypothesis	Conclusion
384	2.231	Perceived ease of use	0.2	H ₀	Normal.
384	1.435	Attitude	0.052	H ₀	Normal.
384	1.764	Perceived usefulness	0.06	H ₀	Normal.
384	1.383	Perceived benefits	0.098	H ₀	Normal.
384	1.364	Plan to use Mobile	0.066	H ₀	Normal.

According to the results presented in Table 4-2 if significant level is greater than the error, the null hypothesis is the result and in the case that significant level is smaller than the error if one a hypothesis is considered as the result. Since the significant level of error for all variables is greater than 0.05, these variables are normally distributed and parametric tests can therefore be used.

3.2 Testing the hypotheses

In this section, testing hypotheses performed using regression analysis and the results are as follows:

Table 4. Results of assumptions

theories	independent variable	Dependent variable	The correlation coefficient	Significant level (sig)	test results
First hypothesis: perceived ease of use has an effect on attitudes towards the use of mobile banking	Perceived ease of use	Attitude towards the use of mobile banking	0.125 **	0.02	Confirmed the hypothesis
The second hypothesis: ease of use, perceived usefulness, perceived the impact	Perceived ease of use	Perceived usefulness	0.143 *	0.056	Confirmed the hypothesis
The third hypothesis: the advantages of perceived influence on attitudes towards the use of mobile banking	Perceived benefits	Attitude towards the use of mobile banking	0.129 **	0.065	Confirmed the hypothesis
The fourth hypothesis: perceived usefulness has an effect on attitudes towards the use of mobile banking	Perceived usefulness	Attitude towards the use of mobile banking	0.100 **	0.077	Confirmed the hypothesis
Fifth hypothesis: perceived usefulness has an effect on intention to use mobile banking	Perceived usefulness	Plan to use mobile banking	0.086	0.04	Confirmed the hypothesis
Sixth hypothesis: the attitude towards the use of mobile banking has an effect on intention to use mobile banking	Attitude towards the use of mobile banking	Plan to use mobile banking	0.101 **	0.054	Confirmed the hypothesis

4. Conclusion

4.1 Conclusion and recommendations

The use of mobile banking services with a new approach in banking today's world, banks as well as competitiveness with other banks to provide their services in accordance with banking practices based on the results the following suggestions raised is.

Customer's perception of a technology ease of use is impressed by the first experience of using it. For this reason, the first experience is crucial to customer perceptions and these experiences surely will affect his subsequent experiences.

Therefore, bank managers should adopt measures that facilitate use of mobile banking services to all customers, so that clients the only reason for discarding this technology is its complexity.

4.1.1 Ease of use will affects perceived usefulness.

It can be said that the more customers feel ease and relief and do not see much difficulty in using mobile banking, the more they will concern about these services. Therefore, it is suggested to provide the more user friendly equipments which are easier to communicate with. Providing simple and easy recipes, integrated helpful menus and ease of use will affects acceptance of mobile banking services.

Perceived benefits affects attitude towards the use of mobile banking. It is suggested that banking managers along the banks should this point in order to implement mobile banking and provide facilities for their customers with greater comparative advantage and finally, encourage customers to use this service. Also informing consumers of the benefits of using mobile banking services can be regarded as an important advertising strategy as a promotional strategy in planning for banking services marketing. Banks are able to identify the reference groups influencing their target market by offering advertising through mentioned reference groups.

Perceived usefulness has an effect on attitudes towards the use of mobile banking. It is suggested that the bank managers can demonstrate a positive image of users of mobile banking services as those associated with the new technologies. They can also employ people who have prestige and high social status to influence the image perceived by the customer. Bank managers can provide brochures to raise awareness of customers containing the information like how to use the service and compatibility of the system with existing values, customers' past experiences and their current needs.

Perceived usefulness has an effect on intention to use mobile banking. So, bank managers should be able to create various advantages for this technology compared with other technologies and also compared with refer customer to the bank in-person, so that they become encouraged to use of this technology. When bank customers do not discriminate between referring to bank in-person and using mobile phone banking, he feels no comparative advantage in this technology comparing to traditional banking (see the bank).

Attitude towards the use of mobile banking affects intention to use mobile banking. According to this, banks promotional activities, should focus on users who are more optimist about changing their attitudes.

And in these promotional programs, there should be more emphasis on the new innovations in terms of electronic banking and new mobile banking services, particularly in comparison with other banks. Bank Marketing is another activity performed by bank managers to encourage customers for using mobile bank services.

Speeding up the provision of services of this technology which is linked to telecommunications infrastructure;

1- An increase in services provided by mobile banking (e.g. trading currencies, stocks, etc.)

2- Providing appropriate incentives such as cash and non-cash prizes to the service users.

3- Mobile phone services can lead to creation of comparative advantage and an acceptable profitability compared with other banks' services.

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