

## INVESTIGATION OF INFORMATION IMPACT ON OVERCOMING CONSUMER RESISTANCE TO ACCEPT MOBILE BANKING PROVIDED BY MELLI BANK OF IRAN

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### —Abstract—

The purpose of this paper is to investigate the impact of information and guidance offered by the bank on two types of consumers' resistance i.e. functional and psychological resistances in adoption of mobile banking provided by Melli Bank of Iran. According to the purpose, five hypotheses are developed and tested. It is noteworthy that the present research is classified as a casual research based on its nature and methodology; with regard to its implementation method, it is known as a survey and according to purpose, it is an applied research in which the Structural Equation Modeling (SEM) is employed to examine the relationships between components of the proposed model. The research sample includes the users of mobile banking provided by Melli Bank of Iran during 2010-2011. In order to achieve the research objectives, 240 questionnaires were distributed among the users of mobile banking provided by Melli Bank of Iran in the city of Arak, Markazi province, from which 204 questionnaires were analyzed. After data analysis, all of the proposed research hypotheses were confirmed. The research results show that the information and guidance provided by the Melli Bank of Iran have been effective in reducing psychological and functional barriers and the highest impact has been obtained for image and tradition barriers.

**Key Words:** *Electronic Banking, Mobile Banking, Functional barriers, Psychological barriers, Information.*

**JEL Classification:** G21.

## 1. INTRODUCTION

Due to the changes in society and the increasing spread of information and communication technologies and increased use of computers, an appropriate atmosphere has been provided for the establishment of trade and economic exchanges. For developing higher level of e-commerce as the main achievement of utilizing information and communication technologies, banks also found that the current daily services and activities are not enough today. Therefore, traditional methods of customer service turned to methods that take advantage of such electronic services. Entering of large banks into broad domain of information technology enables them to achieve an outstanding leap in providing and expanding their electronic services. Using information and communications tools, every day they have new ways to introduce to customers and so the customer can receive needed services faster and better than ever before. Accordingly, the Iranian banks must adapt to new and international technologies in the banking industry. One of these technologies as a subset of electronic banking is mobile banking. Mobile banking has more advantages than electronic banking such as immediate location-free access (in the area with telecommunications coverage), minimum requirements and abundant growth of cell phone usage among users so it deserves more attention than before (Hasani & Soltani, 2009: 136). But despite of all these advantages, many people are reluctant to accept it, for example the number of users of mobile banking provided by Melli Bank of Iran at the end of March last year (2010) in the country was only 195 thousand bank accounts connected to the mobile banking. In other countries the situation is almost the same. KPMG International conducted a survey on 4190 consumers with mobile device in countries throughout the world. A slight majority (51 percent) of respondents reported that they were aware of their bank's services via mobile device. However, only a minority (19 percent) of consumers worldwide use their mobile device for banking purposes or payments. This figure is especially low for European countries (5 percent) and Latin America (7 percent) (Cruz & Laukkanen, 2010: 345). The importance of such a problem is more profound in the recent global economic recession when the economists stated that lagging of banking structure behind the modern and electronic world in these countries is one of the recession factors. Although a large number of the studies in the field have aimed to explore technology acceptance, time of adoption, adopter categories and the rate of innovation diffusion but we need alternative methods to understand and predict consumer behavior in order to reduce such reluctance. Because most of the

researches mention that the lack of information, knowledge and training are main reasons of technology resistance (Laukkanen & Kiviniemi, 2010), we should know that whether it is possible to reduce consumer resistance to mobile banking technology offered by Melli Bank of Iran through providing more information. Therefore, in this research we will focus on two core resistance constructs i.e. functional and psychological resistances (functional barriers refer to usage, value and risk while psychological barriers include image and tradition barriers). If it is possible to reduce such resistances through information and guidance provided by the bank, a major step will be taken toward the national economy development. So, the main question of the research is whether the information and guidance provided by Melli Bank of Iran are effective on resistance of consumers to mobile banking adoption?

## 2. Consumer resistance to innovation

To raise adoption rate of mobile banking provided by Melli Bank of Iran, firstly it is necessary to identify consumer resistance causes. As can be seen from Figure1, Tommi Laukkanen, Suvi Sinkkonen and Pekka Lukkanen in their researches all undertaken in 2009 identified four types of resistance among customers who receive information and guidance from service providers.

**Figure-1: A typology of consumer resistance to innovation**

Functional barrier	<b>Functional resistance:</b> <ul style="list-style-type: none"> <li>• Product usage</li> <li>• Value for money</li> <li>• Perceived risks</li> </ul>	<b>Dual resistance:</b> <ul style="list-style-type: none"> <li>• Product usage</li> <li>• Value for money</li> <li>• Perceived risks</li> <li>• Conflict with traditions</li> <li>• Negative image</li> </ul>
	<b>Non-resistance:</b> <ul style="list-style-type: none"> <li>• Low resistance to the innovation</li> </ul>	<b>Psychological resistance:</b> <ul style="list-style-type: none"> <li>• Conflict with traditions</li> <li>• Negative image</li> </ul>

Psychological  
barrier

There are at least three characteristics of innovation resistance:

1. Innovation resistance affects the timing of adoption;

2. Innovation resistance varies in degree;
3. Innovation resistance exists across product classes.

Rogers (2003) have classified the adopters of innovation into five categories; Innovators, early Adopters, early majority, late majority and laggards (Laukkanen and et al, 2009).

Each of these groups has a different level and type of resistance to an innovation which affects the timing of adoption. However, adoption only begins after the initial resistance has been overcome by the consumer. Therefore, there is always some resistance before adoption and further, adoption and resistance may also exist concurrently. It has to be noted, however, that the adoption process does not necessarily lead to adoption. Since ultimate rejection may discontinue the process. The distinction between the concepts of resistance and rejection has been somewhat obscure in the earlier literature. Thus Laukkanen and Sinkkonen (2010) have suggested that whereas rejection is a passive form of consumer behavior resulting in an ultimate decision not to adopt an innovation, resistance, for its part, is an active behavior which may occur in every adoption process leading to adoption or rejection.

Finally, innovation resistance exists across product classes. This means that instead of the product class to which the innovation belongs. The resistance is derived from the degree of change or discontinuity and the extent to which an innovation conflicts with the consumer's belief structure. Consequently, an innovation that is totally new to the consumer encounters high resistance, whereas an innovation that is based on an existing product or service provokes much less resistance but may still go against the consumer's belief structure. In order to overcome the resistance Innovation encounter from consumers we need to identify the sources of resistance and develop strategies to reduce that resistance.

There are two broad categories of communication methods that the marketer can use: change agents used for personal communication and mass media for impersonal communication (Riquelme & Rios, 2010).

## **2.1. Functional and psychological barriers**

Usage barrier: Ram and Sheth (1989) suggest that among functional barriers the usage barrier comes into operation when an innovation is not compatible with existing workflows, practices or habits. Some researchers refer to it as "perceived ease-of-use". According the previous researches, there is a meaningful

relationship between the usage barrier and users' perceived effort required to use new systems and equipment.

**Value barrier:** The value barrier refers to the performance and monetary value of an innovation in comparison to its substitutes. This concept is related to Roger's (2003) concept of relative advantage defined as the perceived superiority of an innovation to the product or service it follows. Then again, relative advantage is similar to the concept of perceived usefulness which refers to an individual's perception that using a specific innovation improves his/her performance.

**Risk barrier:** Ram and Sheth (1989) believe that the risk barrier refers to the degree of risks inherent in an innovation. This risk usually arises due to the uncertainty related to the degree of discrepancies between people's judgments and actual behavior.

**Tradition barrier:** Sometimes, the functional and technical issues do not provide a comprehensive explanation to innovation resistance. It may not be tied to the technology itself, but rather to the type of personality. Tradition and image barriers are often created through conflict with customers' prior beliefs and value. These mental traits of consumers are associated to customers' mental readiness to accept new technologies. The tradition barrier occurs when an innovation is incompatible with an individual's existing values, norms and past experiences and may block the adoption of the innovation. The tradition barrier is related to the concept of compatibility from the theory of innovation diffusion.

**Image barrier:** In the 1990s, Fain and Roberts (1997) explained the image barrier in online banking according to the term "anxiety towards computers" and negative mental images of technology devices. They stated that the image barrier refers to personal images about difficulties in the use of new technologies Laukkanen & Kiviniemi, 2010).

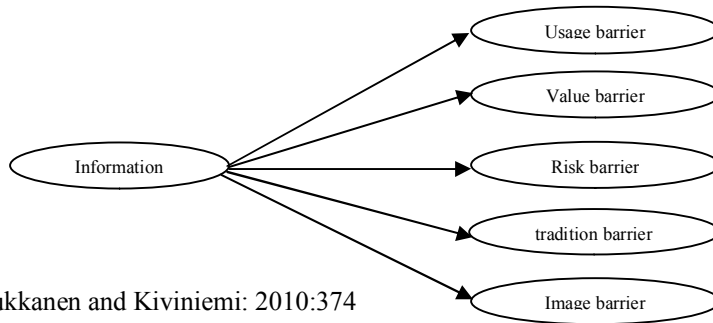
**Information:** Information means the content which is exchanged with the outside world; we are compatible with and put our compatibility on its basis. We can adopt with our surrounding world and even change it through appropriate reaction toward information or by creating new information (Moven & Minor, 2010). In fact, by information we mean the guidance and information provided by banks to their customers.

### **3. Theoretical framework and conceptual model of the research**

The research theoretical framework is based on the study undertaken by Tommi Laukkanen and Vesa Kiviniemi (2010) in Finland. Given the slow adoption of

mobile banking in many countries including Iran, most of the researchers have tried to find the causes of this resistance on the basis of conventional theories. It can be said that almost all of them have viewed this phenomenon from different perspectives. But in this research, the researchers raise the issue of whether the information and guidance provided by the bank can overcome the psychological and functional resistances among customers.

**Figure-2: Research conceptual model**



Source: Laukkanen and Kiviniemi: 2010:374

#### **4. Research methodology**

As was mentioned before, the purpose of present research is to delineate the relationship between the considered variables in a multivariate model, so it is a causal research. The research sample includes users of mobile banking provided by Melli Bank of Iran. Given that to activate the mobile banking of Melli Bank, customers are not required to go to the bank branches. For these reasons, the research uses accessible sampling method. Questionnaires were distributed among customers with at least one time experience about the use of Melli Bank's mobile software in the most congested branch of the bank in the city of Arak i.e. Arak branch of Melli Bank.

The research questionnaire includes 18 items and 180 samples are calculated as the research total sample; but because some researchers believe that in the structural equation methods minimum sample size should not be less than 200 (Hoe, 2008), we considered 240 questionnaires as our final sample.

#### **5. Data collection instrument and method**

The field method is used is used for data collection and a standardized anonymous questionnaire is applied as data collection instrument.

**Table1: Variable and number of questions questionnaire**

Row	construct	Number of questions Questionnaire	source
1	usage barrier	1,2,3,4,5	Laukkanen & Kiviniemi,2010
2	value barrier	6,7,8	Laukkanen & Kiviniemi,2010
3	risk barrier	9,10	Riquelme & Rios, 2010
		11	Laukkanen & Kiviniemi, 2010
4	tradition barrier	12,13	Laukkanen & Kiviniemi, 2010
5	image barrier	14,15	Laukkanen & Kiviniemi, 2010
6	Information	16,17,18	Laukkanen & Kiviniemi, 2010

It is noteworthy that the measurement scale in the present research is an ordinal one; a five-point Likert scale ranging from totally disagree (1) to totally agree (5) was used in all statements.

It is important to note that the questions 1, 2, 3, 4, 5, 6, 8 and 13 are reverse questions.

## 6. Validity and reliability of measurement instrument

Since the standard questionnaire developed by Laukkanen and Kiviniemi (2010) and also Riquelme and Rios is used in the present research, it is evident that the instrument has a good content validity. In order to ensure the validity of the questionnaire, we asked several experts in the field to provide needed consultation. To assess the questionnaire reliability coefficient, the internal consistency method was employed using Cronbach's alpha coefficient. In the initial distribution of 30 questionnaires containing 18 questions, the reliability coefficient is equal to 0.907 indicating very high reliability. The Cronbach's alpha coefficient for these 18 questions (204 completed questionnaires) is 0.847 indicating an acceptable reliability level.

## 7. Data analysis

To examine the relationships between the components of the model, the structural equation modeling method is used. The method is also utilized for confirmatory factor analysis.

## 8. Research model fit goodness

Before testing the research hypotheses, the overall fit goodness of the model should be examined.

**Table2: Indices of research model fit goodness**

Indices fit goodness	value	Indices fit goodness	value	Indices fit goodness	value
Degrees of Freedom	130	GFI	0/83	IFI	0/97
Chi-Square	369/93	CFI	0/97	RMSEA	0/095
	2/845	RMR	0/081	NFI	0/96

The overall fit goodness indexes reveal acceptable results. Therefore, it is concluded that the model has desired fit goodness and is as a good representative of the society.

## 9. Hypothesis Testing

The research hypotheses are tested using the structural equations, gamma and beta coefficients and the t-statistics. Table 3 shows the hypothesis testing results.

**Table3: Hypothesis Result**

Hypothesis	Effect	The path coefficient	Table - statistics	t-value	result
H1. Information and guidance offered by the bank has a negative effect on the usage barrier.	$x_{6 \rightarrow x_1}$	$\gamma_1 = -0.87$	1/96	-12/21	confirmation
H2. Information and guidance offered by the bank has a negative effect on the value barrier.	$x_{6 \rightarrow x_2}$	$\gamma_2 = -0.84$	1/96	-13/11	confirmation
H3. Information and guidance offered by the bank has a negative effect on the risk barrier.	$x_{6 \rightarrow x_3}$	$\gamma_3 = -0.90$	1/96	-12/43	confirmation
H4. Information and guidance offered by the bank has a negative effect on the tradition barrier.	$x_{6 \rightarrow x_4}$	$\gamma_4 = -0.94$	1/96	-16/41	confirmation
H5. Information and guidance offered by the bank has a negative effect on the image barrier.	$x_{6 \rightarrow x_5}$	$\gamma_5 = -0.94$	1/96	-13/33	confirmation



## 10. Conclusion

The analysis results reveal that the information and guidance offered by Melli bank of Iran firstly has the most significant effect on overcoming psychological resistance and then significantly overcomes functional resistance. The finding is in contrast with results obtained by Laukkanen and Kiviniemi (2010). Among the psychological barriers, information and guidance provided by Melli Bank of Iran firstly affects tradition barrier with  $\gamma_5 = -0.94$  and then image barrier with  $\gamma_4 = -0.94$ . Among the functional barriers, information and guidance provided by Melli Bank of Iran firstly affects risk barrier with  $\gamma_3 = -0.90$ , then usage barrier with  $\gamma_1 = -0.87$  and finally, value barrier with  $\gamma_5 = -0.94$ .

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