

# Offering a model based on the TAM for mobile banking reception in Iran

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## ABSTRACT

**Objective:** Nowadays the impact of information technology in different sectors of society including banking, is inevitable. By increasing access to smart phones, using mobile banking as one of the new electronic banking services, is expanding. **Methodology:** While adoption of mobile banking services has accelerated in many parts of the world, customers in Iran pay little attention to these services, and despite of the availability, isn't used properly. **Results:** Researches about influencing factors of users' decision to adopt technology shows that the success of an investment in information technology field depends on the user's tendency level in using it. In recent decades, according to the advancement of information technology and its users, several models in the field of technology adoption emerged that each of these models have different functions in different areas. **Conclusion:** In this article, first we review these models then, we survey the factors influencing on the adoption of mobile banking in Iran and finally, we offer a model for the development of mobile banking reception in Iran, according to TAM model.

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## 1. Introduction

Technological advances such as higher speed of internet, more processing power and the arrival of smartphones in public life, provide the possibility of offering more diverse financial services on mobile phones. Now users in different countries are able to record their accounts via mobile phones and send money for their friends and deposit received checks on their account. The steady evolution of mobile banking applications and users' great welcome of these applications suggest that mobile payments will become the main method of payment. The fact is that mobile banking bound users to use mobile phones to carry out financial transactions, and this means that future mobile applications will enable to contain all types of payment.

Mobile banking is one of the latest electronic distribution channels for banks that technology increasingly has become a vital element for them that increase the comfort and added value for the bank and customer. The power of mobile technology is the result of the connection of each time wherever that provides numerous opportunities for innovation in processes and location-based services. Banking services via mobile phone in addition to comfort and acceleration of affairs reduce costs.

So now a days banks are eager to expand their market by providing banking services through mobile phones. Considering the importance of using mobile banking as one of the factors in facing banks position in the competitive environment, this study deals presenting a model based on banking reception via mobile phone.

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## 2. Materials and methods

**Mobile banking** is a system that you can do your banking via mobile phone. In this system, by installation of the software on the mobile phone, you can do operations such as accounting balance, transferring funds and paying bills, without going to the bank and at any time of the day.

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### 2.1 Necessity of mobile banking development and adoption

Today, most of banks face with a dynamic environment and all banks whether small or large due to blitz changes in competitive situations and conditions ruling on market, have put recruitment and retention of commercial clients as their agenda .On the other hand consumers have more opportunities to compare the services and the customer's judgment about the Bank is based on the ability of banks to help solving problems and developing his business. Security, speed transactions, friendship with consumer and convenience, ease of use, reliability and privacy issues, are the most important factors in the selection of banks by the customer. So investigation the factors affecting the adoption of mobile banking among customers in Iran, requires a comprehensive and immersive research.

### 2.2 Models and theories of technology adoption

One of the most important issues in IT-related research and studies is identifying the factors that cause people to accept new technology and information systems and use them (King and He, 2006; Farokhian and Sadeghi, 2010). Different models have been used to study the factors influencing the adoption of new information technologies of. The basic and infrastructure concept of all models of technology adoption are shown in the following figure.

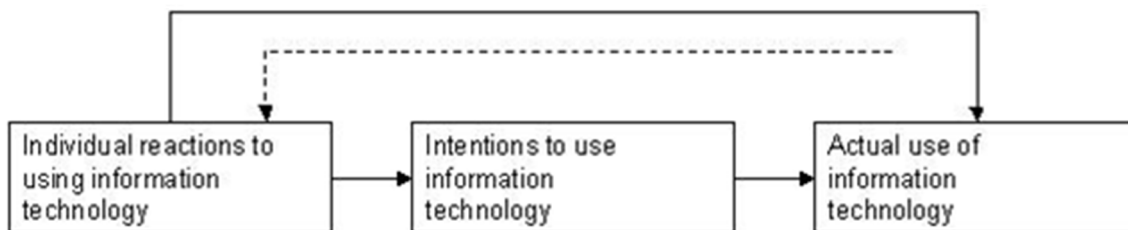


Figure 1. The underlying factors in the reception models of technology (Venkatesh et al., 2003)

Among the proposed models of technology acceptance, Technology Acceptance Model, the theory of reasoned action (acting reasonably), and the theory of planned behavior, have the most commonly usage in the studies were related to the adoption of information technologies (Gharoie Ahangar, 2001).

In this section first it will be discussed the research literature of any mentioned theories, with goal of introducing models and identifying key assumptions, introducing structures of each of them and the intended structure concept in any of the models, and their research applications. And then will act out to design and deliver new models based on the obtained knowledge.

### 2.3 The theory of reasoned action (acting reasonably)

This theory is proposed by Fishbein and Ajzen (1975) in the book "Belief, attitude, intention and behavior: An Introduction to Theory and Research 5" based on the assumption that people act reasonably. They collect all available information about aim attitude and assess the behavior regularly, and also consider the result of actions, then they decide to do or not do based on their practical reasoning (Wungwanitchakorn, 2002). The following figure illustrates this theory.

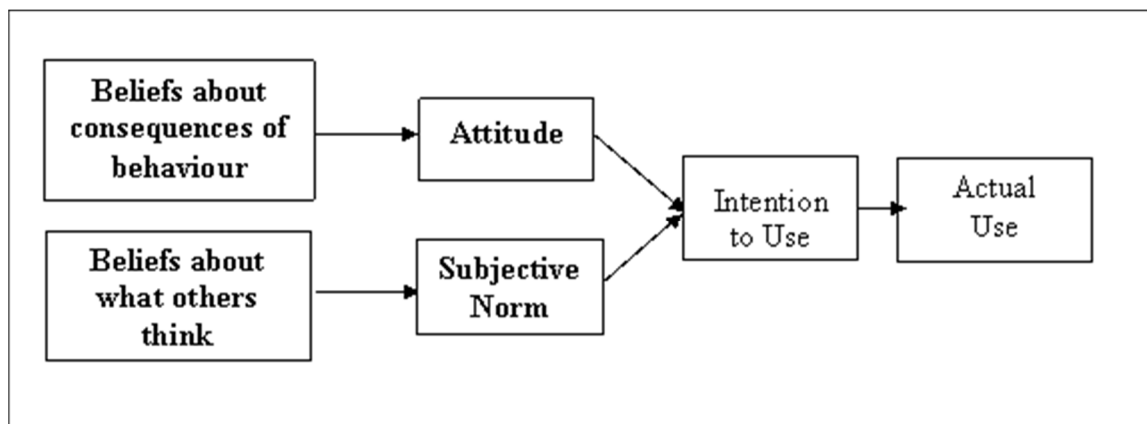


Figure 2. The theory of reasoned action

Subjective norm: it refers to perceived social pressure by individual to perform or not to perform the target behavior. People often act based on their perceptions of what others (friends, family, colleagues, etc.) think they have to do. And their intention to adopt behaviors potentially affected by those who have close links with them (Hilgert et al., 2004). In the theory of reasoned action, individual subjective norm, is the multiplication of normative beliefs (perceived expectations by the individuals or specific reference groups) in personal motivation for doing the goal behavior despite of this expectations (Davis et al., 1989).

Attitude: is defined as a positive or negative feeling about the goal behavior doing. Personal attitude toward the behavior, is multiplication of attitudes beliefs and product (individual mental possibility about target behavior that will cause result of I) in the assessment of outcomes (evaluative explicit response to result) (Fishbein and Ajzen, 1975).

Behavioral intention: expressing the intensity of intention and individual animus to do target behavior (Moga, 2004). Behavior intention relation with Behavior show, people tend to engage in behaviors that they are going to do (Conner and Armitage, 1998). So behavior is always after the intention and is attached to it.

The theory of reasoned action claimed that behavior is exclusively under the control of behavioral intention, therefore, this theory is limited to voluntary behavior (behaviors that just need the individual will and intention to being done).

If the behavior also requires the skills, resources and opportunities that aren't easily accessible and free that hasn't been considered in the functional capabilities field of the reasoned action theory or may be predicted incompletely by this theory (Conner and Armitage, 1998). The theory of reasoned action is widely used in researches related to the adoption of different information technologies.

### 3. Discussion and results

#### 3.1 Technology Acceptance Model

This model is the modified version of reasoned action theory that Davis has put it in his doctoral thesis. The main objective of the technology acceptance model, is providing the basis for tracking the impact of external factors on internal beliefs, attitudes and intended use (Davis et al., 1989). This model has descriptive approach in addition to predictions aspects; therefore, administrators can identify why a particular system may not be approved, and follow appropriate corrective steps based on obtained knowledge. The figure below shows the Technology Acceptance Model.

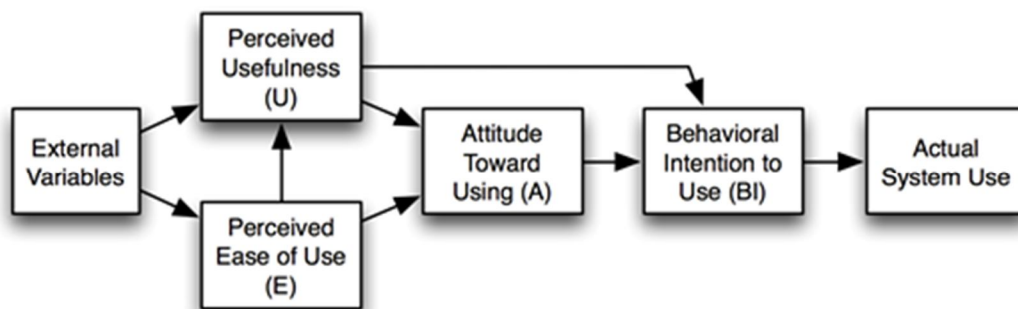


Figure 3. Technology Acceptance Model (Davis et al., 1989)

Perceived usefulness ease: is the degree which a person believes that using a particular system, improves his job performance (Taylor and Todd, 1995).

-Ease of perceived usefulness: is the extent to which the user expects using the system won't need attempt (Davis et al., 1989). Based on technology acceptance, individual understanding of the system usefulness is under the influence of the fact which he realizes using system is easy (Venkatesh and Davis, 2000; Taylor and Todd, 1995).

External variables: external factors may include any factors such as organizational factors, social factors, such as computer systems features like hardware and software type, training method and other people assistances in using computer systems that affect on subjective perceptions of individuals about usefulness and ease of using information technology (Davis et al., 1989).

The technology acceptance model assumes that all usefulness beliefs and ease of use, are the main determinants of the decision to use the technology. Because Davis and others wanted to use beliefs to which be useful and popular to study different technologies and different groups of users, so choosing two beliefs, usefulness and ease of use, seems logical and smart.

#### 3.2 Client characteristics other factor of mobile banking reception

Accomplished researches in mobile banking field have shown that personal characteristics have great effect in the process of accepting a project or technology. Personal traits may include culture, age, and education.

##### 3.2.1 Culture

Culture is a set of material and spiritual values created by man. For example, in Romania the habit of liquidity as a culture factor specifies to customer. People culture is different With regard to the environment in which they live, so banks must offer their services to customers by identifying customer's culture.

### 3.2.2 Age

Age of individuals can have an important role in the adoption of mobile banking. Young people may allocate a greater percentage of mobile banking users to themselves due to the use of computer and internet skills, more studying and learning about the Mobile banking.

### 3.2.3 Education

Another feature of customers is education. Highly educated people make up the largest percentage of users of mobile banking. Because they are more aware of mobile banking services and fully understands the benefits of this technology.

### 3.3 The proposed model

Mobile banking and the advantages of provided services through it, for most people isn't tangible and perceptible, and more people due to various reasons haven't experience in exchanges and transactions through mobile banking, so in the unknown and emerging environment of mobile banking, the impact of reference groups (e.g. family, friends, colleagues, etc.) on many people's subjective norm is great. And then, subjective norm will have an enormous impact on usage intention of people. So considering these variable leads to better prediction of usage intention of mobile banking services. This structure exists in two models of planned behavior theory and reasoned action theory. Also, since the users have to access smartphone and ability of connecting to the Internet to use mobile banking system (external control agents) and have *necessary skills and abilities (internal control factors) to work with these tools*, so the important role of perceived behavioral control variable in predicting desire and willingness to use these services is seen clearly. This structure is observed only in the theory of planned behavior .On the other hand a system to receive acceptance from customers, must have some advantages to attract their attention. For example, speeding up the work, increase efficiency and ... (usefulness perceiving). Also technology should be such that it required little effort to learn and use it (ease of use perceiving) .

According to it, the proposed model is combined with TAM model. But since, according to researches, the personality traits factor of a customer, has a significant impact on the use of technology, have been the structure of this model. Personality traits customer, are a factor that has an impact on one's own attitude.

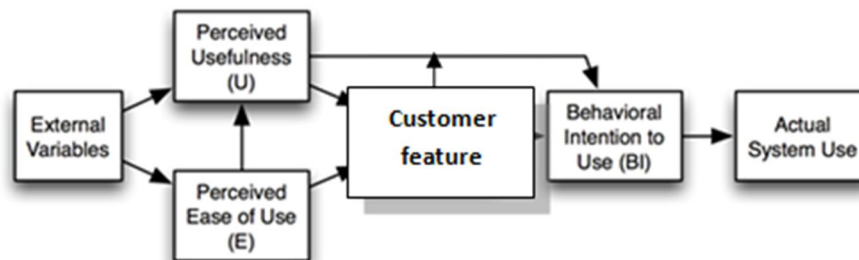


Figure 4. Shows suggested model

## 4. Conclusion

With the development of information technology and communication, all aspects of life today, especially economic aspect of it, experienced profound and fundamental evolution and this process continues .Undoubtedly, the use of IT in establishment of an efficient banking system context, is the development needs of e-commerce in the country, while relating with international systems, also have the ability to offer new services of mobile banking. For technology providers, banks, their customers and many industries, this is a task which must have opinions about the future prospects of banking operations, products and their services and competition. It is clear that mobile banking is developing and progressing, but its future is still unknown and it is difficult to predict. Successful studies proclaim that mobile banking future lies along its customers. In the process of mobile banking services, professionals must rely on benefits for customer acceptance (acceptance from the customer's perspective). Due to the high costs spent for development of mobile banking systems, ensuring the adoption of these systems has utmost importance. In this study was observed that TAM and TPB and TRA are the main and basic models of adoption technology. Common Key factors between these three models are attitude, subjective norm, intention to use and actual use, but these factors can't cause mobile banking acceptance singly .So other models were developed to complete previous models. In this research, proposed a model established upon the base TAM model. In this model, personality traits were added to previous models. It tells the personal properties can directly affect the person's attitude. These models and provided approaches for the development of factors influencing the adoption of mobile banking, can be effective on mobile banking's growth in Iran.

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