ARTICLE IN PRESS

Telematics and Informatics xxx (2016) xxx–xxx

Contents lists available at ScienceDirect

Telematics and Informatics

journal homepage: www.elsevier.com/locate/tele

Word of Mouth impact on the adoption of mobile banking in Iran

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ARTICLE INFO

Article history:
Received 4 May 2016
Received in revised form 19 July 2016
Accepted 10 August 2016
Available online xxxx

Keywords:
Attitude
Mobile banking
SEM
TAM
Word of Mouth

ABSTRACT

Purpose: The purpose of this paper is to explore word of mouth impact on the adoption of mobile banking in Iran. This study provides insights into factors affecting the adoption of mobile banking in Iran.
Design/methodology/approach: Based on the consumer data collected through a survey, structural equations modeling and path analysis were employed to test the research model.
Findings: The results revealed that "Word of Mouth" was found to be the main factor affecting users attitudes toward the use of mobile banking. "Word of Mouth" positive impact on other factors affecting the adoption of mobile banking was also approved.
Research limitations/implications: The major limitations of the paper is that it studies only the Internet users and non-users are not considered.
Originality/value: There are a number of factors efficiently on the adoption of mobile banking. Many researchers worked on the relationship between these parameters and their effect on each them. However, none have paid attention to the word of mouth impact of the adoption of mobile banking. In this study, for the first time, the word of mouth factor impact on the adoption of mobile banking in Iran is considered as the main contribution of the paper.

1. Introduction

Mobile banking is among the latest in a series of recent mobile technological wonders (Mohammadi, 2015). Although Automated Teller Machine (ATM), telephone, and Internet banking offer effective delivery channels for traditional banking products, but as the newest delivery channel established by retail and microfinance banks in many developed and developing countries, mobile banking is likely to have significant effects on the market (Safeena et al., 2012).

Since the number of cell-phones is more than PCs, mobile banking has become more popular than e-banking among bankers. Also, mobile phones enhance the quality of services because clients can perform their financial jobs in every time and place. Therefore, it is clear that use of cell-phones for banking affairs is useful for both clients and the bank. This leads to the establishment of a stronger relationship between the financial institutions and clients (Laukkanen, 2007). Despite such benefits, the use of mobile phones or tablets to conduct banking transactions or access financial information is not as widespread as might be expected (Dineshwar and Steven, 2013).

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http://dx.doi.org/10.1016/j.tele.2016.08.009
0736-5853/

Please cite this article in press as: Mehrad, D., Mohammadi, S. Word of Mouth impact on the adoption of mobile banking in Iran. Telemat. Informat. (2016), http://dx.doi.org/10.1016/j.tele.2016.08.009

More than 1 billion people are expected to use mobile banking globally by 2017, but that level represents only 15% of the global mobile subscription base a base that accounts for approximately 96% of the world's population. In addition, approximately half of all mobile subscribers remain unbanked, with limited access to traditional financial services (Shaikh and Karjaluoto, 2015). These trends suggest that significant growth opportunities remain, leading to predictions of potentially massive increases in the number of mobile banking users. These figures also warrant further investigations of any persistent adoption issues in mobile banking, especially in the case of mobile subscribers. (Hanafizadeh et al., 2014) concluded that despite technological progresses and increased accessibility of mobile banking in Iran, the number of users does not match experts' expectations, a fact that warrants investigation into its reasons.

This supports the notion that technological advances and service availability do not automatically lead to widespread adoption and use. It also suggests a lack of knowledge about the motivators and inhibitors that influence the adoption of this mobile service, which is corroborated by the limited research that has been undertaken in this area (Hosseini et al., 2015). As such, there have been repeated calls for the investigation of factors that predict or explain the adoption, acceptance, and use of mobile banking. Therefore, in this paper, we examined the effective factors of the adoption of mobile banking. In particular, two main dependent variables (attitude, intention) and five independent variables (perceived ease of use, perceived usefulness, trust, social influence and word of mouth) Studied in this article.

This paper is focused on Iran as a developing country which possesses a large population of over 75 million individuals. According to (Hanafizadeh et al., 2014) most of the Iranians are still using the precursors of mobile banking like ATM, bank branch and telephone bank. This shows that along with the adoption of new technologies, the adoption of mobile banking needs to discover the factors affecting its acceptance that is what we are aimed to in this study in Iran. This study differs from some past studies as follows.

First, past studies have limited and mainly focused on SMS banking and virtually no studies have addressed the use of mobile banking applications via smart phones or tablets, however it is addressed in this study.

Second, unlike previous studies, this study is addressed to users who connect to the Internet using smart mobile phones.

Third, in this study for the first time the word of mouth factor impact on the adoption of mobile banking in Iran is considered as the main contribution of the paper.

The remainder of the paper is structured as follows: we address literature review in the next section. This is followed by the presentation of the research hypotheses, discussion of findings, conclusions, and finally recommendations for future studies.

2. Review of the literature

2.1. Mobile banking

Mobile banking, also referred to as mobile banking, is an application of mobile commerce that enables customers to bank virtually at any convenient time and place (Suoranta, 2003). It is also defined as the provision of banking and related financial services such as savings, funds transfer, and stock market transactions among others on mobile devices (Tiwari and Buse, 2007). Mobile devices allow the users to connect to a server, perform authentication and authorization, make mobile payments, and subsequently confirm the completed transactions (Kim and Mirusmonov, 2010). Since banks may achieve competitive advantage by providing mobile banking to customers, the issues associated with its mass usage are of high significance (Dineshwar and Steven, 2013). Hence, users' attitudes and their intentions towards use of mobile banking are of immense importance to researchers, because it helps financial institutions such as banks and payment service providers to get a real advantage by enabling enhanced understanding of key factors that affect intention to use mobile banking (Mohammadi, 2015). Studies conducted in developing (but not developed) countries identify social and culture factors as strong influences on mobile banking adoption (Alafeef et al., 2011). Similarly, combining these factors with a range of demographic factors indicates that the impact of social and cultural features is significant. Several independent and dependent variables appear in investigations of varying aspects of consumer decision-making processes related to mobile banking adoption. In particular, three main dependent variables (attitude, intention, and usage) and eight independent variables perceived ease of use, perceived usefulness, trust, social influence, perceived risk, perceived behavioral control (or self-efficacy), compatibility with lifestyle and device, and facilitating conditions emerged from this review. These contributions constitute the main research stream (Shaikh and Karjaluoto, 2015). A summary of literature exploring mobile banking, including the methodology and major findings of each study, is presented in Table 1.

2.2. Technology acceptance model (TAM)

The adoption of technology can be described in various ways. Some studies take a process approach and examine in-depth processes (Majchrzak et al., 2000); others focus on the relationships between technology adoption and influential variables (Im et al., 2011). The TAM is very popular as a framework for examining intentions to adopt mobile banking (Shaikh and Karjaluoto, 2015). This model has been used in a variety of studies to explore the factors affecting individual's use of new

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Table 1
Outstanding studies in the area of adoption of mobile banking.

Researcher	Context	Methodology	Key findings
Afshan and Sharif (2016)	Acceptance of mobile banking framework in Pakistan	TTF, UTAUT and ITM	*Combining behavioral, technological and environmental aspects of mobile banking. This is evidenced by high explanatory power of this research model that depicted 60.1% of the behavioral intention to adopt mobile banking compared to 31% by Kim et al. (2009) and 53% by Oliveira et al. (2014)*
Mohammadi (2015)	A study of mobile banking usage in Iran	Extended TAM	*The results revealed that "system compatibility" was found to be the main factor affecting users' attitudes toward use of mobile banking. "Resistance" showed a significant negative effect on both ease of use and usefulness. "Perceived usefulness" mediated the relationship between ease of use and users' attitudes. At last, contrary to self-efficacy which showed no significant effect, perceived image moderated the relationships between usefulness and attitude*
Oliveira et al. (2014)	Extending the understanding of mobile banking adoption: When UTAUT meets TTF and ITM	TTF, UTAUT and ITM	*The study found that facilitating conditions and behavioral intentions directly influence mobile banking adoption. Initial trust, performance expectancy, technology characteristics, and task technology fit have total effect on behavioral intention. The paper offers valuable insights to decision-makers involved in the implementation and deployment of mobile banking services*
Thye Goh et al. (2014)	Exploring a consumption value model for Islamic mobile banking adoption	Extended TAM	*Empirical results via the PLS method demonstrates that the result satisfactorily explains the adoption of Islamic mobile banking and further demonstrates the use of the consumption values model as an alternate approach for technology adoption. The consumption values model approach appears to have a stronger fit for Muslims than non-Muslims with 66.6 per cent of the variance explained and a goodness-of-fit index of 0.724. The conditional factors are important in the non-Muslims compared to Muslims. Muslims seem to value emotional factors more than non-Muslims*
Hanafizadeh et al. (2014)	Mobile-banking adoption by Iranian bank clients	Theoretical approach	*Eight latent variables of perceived usefulness, perceived ease of use, need for interaction, perceived risk, perceived cost, compatibility with life style, perceived credibility and trust were examined. It was found that these constructs successfully explain adoption of mobile banking among Iranian clients. Adaptation with life style and trust were found to be the most significant antecedents explaining the adoption of mobile banking*

technology (Aboelmaged and Gebba, 2013). Davis (1989) suggests that the sequential relationship of "belief", "attitude", "intention", "behavior" in TAM, enables us to predict the use of new technologies by users. In fact, TAM is an adaptation of theory of reasoned action (TRA) in regard to information systems (IS) which notes that perceived usefulness and perceived ease of use determine an individual's attitudes toward their intention to use an innovation with the intention serving as a mediator to the actual use of the system. Perceived usefulness is also considered to be affected directly by perceived ease of use (Mohammadi, 2015a). In the case of system adoption, according to (Hanafizadeh et al., 2014), almost 40 percent of all papers in this section are carried out via TAM. This theory asserts that perceived usefulness and ease of use are fundamental determinants of system adoption and usage (Bankole et al., 2011). However, because the TAM excludes economic and demographic factors and external variables, it seemingly has limited use for explaining users' attitudes and behavioral intentions toward mobile service adoption (Venkatesh and Davis, 2000). Therefore, many mobile banking adoption studies extend or supplement the original TAM by including additional constructs, such as relative advantage and personal innovativeness (Chitungo and Munongo, 2013), perceived risk, perceived cost of use, compatibility with life style (Hanafizadeh et al., 2014), and perceived security (Hsu et al., 2011). In fact, TAM provides the provision to add external variables as the determinants of perceived usefulness and perceived ease of use (Davis, 1989). Yousafzai et al. (2010), who compared three models (TRA, Theory of Planned Behavior (TPB) and TAM) in terms of their ability to predict customer online banking behavior, also indicated that TAM is superior to the other models and highlighted the importance of it in understanding online banking behavior. Table 2 includes the studies that have used TAM models.

On the other hand, there are other related theories that deserve to be mentioned. These are theories such as Theory of Planned Behavior (TPB) which discusses that adoption behavior is preceded by behavioral intention which in itself is a function of the individual's attitude, their beliefs about the extent to which they can control a particular behavior and other external factors (Mohammadi, 2015). Diffusion of Innovation Theory (IDT) which considers adoption of mobile banking as a social construct that gradually develops through the population over time; and the Unified Theory of User Acceptance of Technology (UTAUT) which notes that four key constructs (performance expectancy, effort expectancy, social influence, and facilitating conditions) are the main determinants of consumers' usage intention and behavior (Shaikh and Karjaluoto, 2015).

According to the expressed in this study, we will use extend TAM by including additional constructs, such as social norm, Trust and Word of Mouth.

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Table 2
The studies that have used TAM models.

Author(s)	Factors	Countries
Mohammadi (2015)	Perceived usefulness Perceived ease of use Perceived risk Compatibility Awareness Attitude Intention to Use	Iran
Hanafizadeh et al. (2014)	Perceived usefulness Perceived ease of use Perceived risk Need for interaction Intention to Use	Iran
Chitungo and Munongo (2013)	Perceived usefulness Perceived ease of use Perceived risk Social influence Cost Relative advantage Personal innovativeness Intention to Use	Zimbabwe
Teo et al. (2012)	Perceived usefulness Perceived ease of use Trust Intention to Use	Malaysia
Akturan and Tezcan (2012)	Perceived usefulness Perceived benefit Perceived risk Attitude Intention to Use	Turkey
Amin et al. (2012)	Credibility Self-efficacy Perceived enjoyment Intention to Use	Malaysia
Mohd Daud et al. (2011)	Perceived usefulness Credibility Consumer awareness Intention to Use	Malaysia
Crabbe et al. (2009)	Perceived usefulness Credibility Perceived elitism Attitude Intention to Use Use	Ghana

Source: (Shaikh and Karjaluoto, 2015).

3. Theoretical framework

3.1. Perceived usefulness

Perceived usefulness is the degree to which a person believes that using a particular system would enhance his or her job performance (Alafeef et al., 2011). Perceived usefulness has been identified as having a significant positive correlation with both attitude and usage intention, for example, perceived usefulness positively affects the adoption of mobile internet and mobile services (Shaikh and Karjaluoto, 2015). Many existing studies have shown that perceived usefulness have a direct significant influence on behavioral intention to use a particular online system (Hanafizadeh et al., 2014; Mohammadi, 2015, 2015a; Shaikh and Karjaluoto, 2015). Within the context of mobile service, perceived usefulness can be described as how well mobile services can be incorporated in day-to-day activities. Using mobile banking services gives the opportunity to consumers to perform banking operations in any location and at any time. Once a consumer feels that such services are directly beneficial to his or her personal and business life, then he or she will be positively influenced to keep using such services (Lin, 2011). In general, customers tend to have more positive attitude towards adoption and usage of new technology when they comprehend the numerous benefits offered by mobile banking. Thus, one can consider perceived usefulness as an influential construct in mobile banking. In this respect, the following hypothesis is developed:

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Hypothesis 1. Perceived usefulness has a positive effect on users attitudes.

Hypothesis 2. Perceived usefulness has a positive effect on intent to continue using mobile banking.

3.2. Perceived ease of use

Davis (1989) describes perceived ease of use as "the degree to which a person believes that using a particular system would be free of effort." Perceived ease of use may contribute towards performance, and therefore, near-term perceived usefulness and the lack of it can cause frustration, and therefore, impair adoption of innovations. The existing studies suggest that ease of use is a major attribute of e-business applications such as internet commerce, I-banking and mobile commerce (Mazhar et al., 2014). If the mobile banking applications have user friendly interfaces, then customers are likely to perceive them as easy to use, and this perception will develop positive attitude towards them. Also studies suggest a strong relationship between usefulness of technology and ease of using that technology. As using the new technology becomes easier to use, the expected benefits in terms of performance enhancement increases. This relationship has also been validated in online technology context (Shaikh and Karjaluoto, 2015).

Hypothesis 3. Perceived Ease of using has a positive effect on Perceived usefulness.

Hypothesis 4. Perceived Ease of using has a positive effect on users attitudes.

3.3. Social norm

A social norm is defined as an individual's perception that most people who are important to them think they should or should not perform the behavior in question (Fishbein and Ajzen, 1975). The social norm is determined by the total set of accessible normative beliefs concerning the expectations of important friends. Individuals often respond to social normative influences to establish a favorable image in a reference group (Chitungo and Munongo, 2013). Aboelmaged and Gebba (2013) emphasize that the construct of social influences cannot be ignored in any adoption model. Social norms have been validated in studies such as mobile banking adoption (Aboelmaged and Gebba, 2013; Chitungo and Munongo, 2013). Therefore, literature suggests that social norms have significant positive effect on mobile banking adoption.

H5. Social norm has a positive effect on Perceived Ease of using.

H6. Social norm has a positive effect on Perceived usefulness.

3.4. Initial trust

Initial trust reflects "the willingness of an individual to take risks in order to fulfill a need without prior experience, or credible, meaningful information" (Kim and Prabhakar, 2004). Trust have been frequently identified as key barrier to adopting online and mobile services (Afshan and Sharif, 2016; Hanafizadeh et al., 2014; Zhou, 2012, 2011). Mazhar et al. (2014) says that one of the reason people may choose not to adopt mobile banking & I-banking is the privacy and secrecy concerns governing these new electronic channels being offered by financial institutions and banks. Kim et al. (2009) proved that when mobile banking is perceived as associated with higher risk compared to ordinary banking, the primary trust of the individual in services is expressed as the necessary factor for using mobile banking. Koenig-Lewis et al. (2010) concluded that there is no direct relationship between trust and intention to use mobile banking; rather, it indirectly and through variables of compatibility and perceived risk exerts influence upon usage intention. Therefore, investigating this variable and its effect on the attitude and usage intention seems necessary.

Hypothesis 7. Trust has a positive effect on Perceived Ease of using.

Hypothesis 8. Trust has a positive effect on Perceived usefulness.

3.5. Attitude and intention

Intention, which is the main dependent variable identified in the studies conducted based on the TAM, is defined as the likelihood that an individual will use a technology. According to the TAM, the main antecedent and the key mediator of the effects of other variables on intention to use, is the individual's attitude towards use of a technology (Schierz

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et al., 2010). Attitude play a critical role in the intention to use a new technology (Davis, 1989). In the acceptance domain, some researchers have studied the relationship between attitude and intention. As Yang and Yoo (2004) note, attitude resides in the mind, precedes and produces behavior and thus, can be used to predict intention. Cao and Mokhtarian (2005) also point out that attitudinal factors explain most of the variation in e-intention. Shaikh and Karjaluoto (2015) in their study of mobile banking adoption, figured out that attitude has a positive effect on consumers' intentions to continue using mobile banking. As a result, attitude is expected to be a strong predictor of their intention to continue using mobile banking.

Hypothesis 9. Attitude has a positive effect on intention to continue using mobile banking.

3.6. Word of Mouth

Word of mouth is a powerful tool for free communication on a product or service and in the virtual environment, it has become a very interesting field of study for scholars and managers (Xia and Bechwati, 2008). There are different definitions of this behavior (Table 3). In general, authors highlight the personal and informal nature of word-of-mouth, but there has been some evolution in its conceptualisation (Goyette et al., 2010).

Word of mouth excludes formal communication from customers to firms (in the form of complaints or suggestions) and from firms to customers (through promotion actions). Interpersonal communications are both an antecedent and a consequence of consumers' evaluations of their shopping experience (Velázquez et al., 2015).

In the pre-purchase stage, individuals seek information from others as a risk reduction strategy (Flanagin et al., 2014), especially in the context of services (Jalilvand and Samiei, 2012). In fact, consumers resort to and trust information from word-of-mouth more when they are dealing with high-risk purchase processes (Velázquez et al., 2015). In the post-purchase stage, consumers engage in word of mouth with a wide variety of objectives and motivations, mainly to help other consumers, prevent possible errors (Laughlin and MacDonald, 2010), vent their anger or reduce cognitive dissonance (Velázquez et al., 2015). Word-of-mouth is a type of direct, personal behavior that is independent of the company makes the information transmitted more real and credible. In this regard, the literature recognizes that the impact of word-of-mouth on consumer behavior is greater than the effect of advertising or promotion. For example, Hogan et al. (2004) show that word of mouth can triple the effectiveness of advertising. In this study, for the first time studied the impact word of mouth is the adoption of mobile banking.

Hypothesis 10. Word of Mouth has an effect on Perceived Ease of using.

Hypothesis 11. Word of Mouth has an effect on Perceived usefulness.

Hypothesis 12. Word of Mouth has an effect on social norm.

Hypothesis 13. Word of Mouth has an effect on Trust.

Hypothesis 14. Word of Mouth has an effect on user attitudes.

Hypothesis 15. Word of Mouth has an effect on intention to continue using mobile banking.

Table 3
Main definitions of word of mouth.

Researcher	Definition
Theng and NG (2001)	Oral, person-to-person communication between a perceived non-commercial communicator and a receiver concerning a brand, a product or a service offered for sale
Harris-Walker (2001)	An informal person-to-person communication between a perceived non-commercial communicator and a receiver regarding a brand, a product, an organisation, or a service
Silverman (2001)	Communication about products and services between people who are perceived to be independent of the company providing the product or service, in a medium perceived to be independent of the company
Litvin et al. (2008)	Communication between consumers about a product, service or a company in which the sources are considered independent of commercial influence
Goyette et al. (2010)	Verbal informal communication occurring in person, by telephone, e-mail, mailing list, or any other communication method regarding a service or a good. A recommendation source may be personal or impersonal

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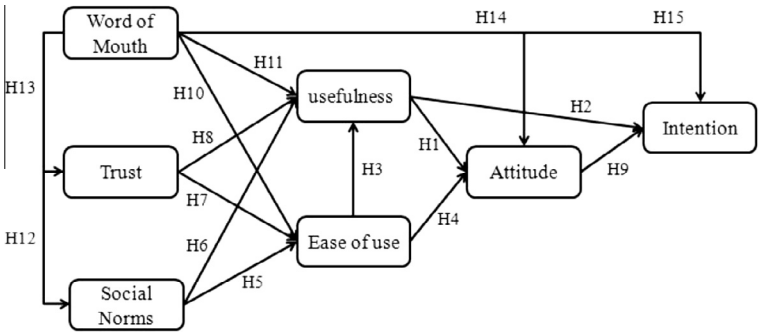

Fig. 1. Proposed model.

4. The conceptual model

Based on the hypotheses presented in the theoretical framework of the study, the conceptual model is developed in Fig. 1. The factors of perceived usefulness, perceived ease of use, word of mouth, social norm, trust, attitude and intention are used to test in this model.

5. Research methodology

5.1. Participants

The target population of this study was the Internet users. Therefore, an electronic questionnaire containing 35 questions was designed. The questionnaire was sent to people via social networks such as Telegram and Instagram. Also, the questionnaire was sent via e-mail. The participation in the study was voluntary. In total, 384 valid samples were collected. Because the samples were collected using an online e-survey with forced entry. Hence, there were no missing data in the questionnaire. Since the questionnaire was designed and sent electronically, the participants had to have a cell-phone capable of installing the software of mobile banking and connecting to the Internet. Internet users are the largest group of users of modern technologies. Thus, it can be predicted that a higher percentage of users are interested in ICT-related technologies and use them. So, the sample of the present study is a good representative of the society under consideration. The data of the present study were collected for February 2016 to March 2016.

Response rate and representatives

In this study Cochran formula is used to determine sample size. Cochran formula for unlimited society:

$$n = \frac{Z^2 P(1-P)}{d^2} \quad (1)$$

For unlimited population, the sample size required was estimated to be 384. The total population of Iran by sex and age group were obtained from Iran Center of Census and Statistics. These were used to compare with the gender and age distribution of the sample in order to test its' representativeness. In terms of gender, the distribution of the sample was 59.11% for male and 40.89% for female. According to the Government's latest census report, by end of 2011, the Iran population's male and female ratio is 51% and 49%; Thus the sample appear to be representative in terms of gender. Having analyzed the demographic characteristics of mobile banking users (Table 4), most of them were figured out to be in the age between 20 and 29 (58.33%), followed by those in the range between 30 and 39 (30.47%), and those in the age 40+(11.2%); when compared with the Iran population, the spread of age group sampled is comparable with the population profile.

6. Data analyses

6.1. Validity and reliability

In order to estimate the validity of research instrument four types of validity were estimated; i.e. content validity, face validity, convergent validity, and discriminant validity. For estimating content validity, the number questionnaires were administered among the experts of marketing and banking and Professors in the field to estimate the content validity of the instrument. The aim of the questionnaire was testing the appropriateness and relevance of questions related to each variable. Finally, the content validity of the questionnaire was approved.

To confirm the face validity, 30 questionnaires were administered among the sample and the views of respondents about the research and quality of items were collected. After necessary adjustments such as providing examples to clarify some items, the final questionnaire was developed to be distributed among the whole population. In the next stage, in order to

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Table 4
The demographic characteristics of the sample.

	Frequency	Percentage
Gender		
Female	157	59.11
Male	227	40.89
Total	384	100
Age		
20–29	224	58.33
30–39	117	30.47
40+	43	11.2
Total	384	100
Education		
Diploma	121	31.50
Bachelor	172	44.80
Masters and Ph.d	91	23.70
Total	384	100
Income		
1,000,000–	158	41.15
1,000,000–1,500,000	134	34.91
1,500,000–2,000,000	41	10.68
2,000,000–2,500,000	25	6.50
2,500,000–3,000,000	11	2.85
3,000,000+	15	3.91
Total	384	100

confirm the reliability of the questionnaire, its internal consistency was measured through Cronbach Alpha. The alpha reliability was 87 confirming the reliability of the questionnaire. The alpha coefficients of individual variables refer to the appropriate reliability of the instrument. Thus, it was indicated that the questions enjoy appropriate internal consistency, that is, they all measure a common construct.

The composite reliability (CR) and the average variance extracted (AVE) of every construct refer to the acceptable reliability of the instrument. These indices measure the convergent validity of the instrument confirming with their high value. AVE measures the variance extracted by the indices in relation to measurement errors and must be more that 0.50 to justify using a construct (Barclay et al., 1995). The average variance shared between each construct and its indicator must be more that the variance shared between that construct and other constructs (Compeau et al., 1999). The values of CR and AVE, respectively more that 0.60 and 0.50 refer to the appropriate construct reliability and convergent validity (Fornell and Larcker, 1981). The values of AVE and CR are presented in Table 4 indicating the acceptable values of research constructs.

In doing this analysis, we must ensure that it can be used to analyze existing data. In other words, is the number of data to (sample size relationship between variables) suitable for factor analysis or not? For this purpose, KMO index and Bartlett's test is used. Based on the data in Table 5, index KMO test for all factor greater than 0.6, which indicates the adequacy of the sampling. Also Given that the value of sig Bartlett (0.000) is less than 0.5, shows the factor analysis is to identify structures. Hair et al. (2006) introduced factor load of 0.7 as referring to the validity at the item level. The discriminant validity of the instrument was also confirmed by investigating the correlation of the indicators of different variables in the covariance matrix of AMOS output. The main difference between convergent and discriminant validity is that content validity investigates the correlation of indicators that measure a construct and must be related to each other, while discriminant validity tests indicators that must not be related to each other (Hanafizadeh et al., 2014). Previously, it was believed that discriminant validity is confirmed when the correlation among two constructs is not high. There is no standard value for it, but Sorensen and Slater (2008) suggested that the value of correlation must be less than 85%. Therefore, in order to estimate discriminant validity, the correlation between the constructs must be less than 0.85. The correlation coefficient of more than this value indicates that the constructs measure the same concept. Based on the results, there is no similar concept in latent variables. Thus, all constructs have discriminant validity.

Since most studies conducted on research variables used 7-scale Likert format (Hanafizadeh et al., 2014; Mohammadi, 2015; Shaikh and Karjaluoto, 2015), the instrument of the present study was also designed in 7-scale Likert format. The second reason for using 7-scale Likert format was the participants of this study who enjoyed the higher level of education compared to other people.measurement indicators were extracted from (Hanafizadeh et al., 2014; Kim and Mirusmonov, 2010; Koenig-Lewis et al., 2010; Lee et al., 2011; Mohammadi, 2015, 2015a; Schierz et al., 2010; Wessels and Drennan, 2010; Xia and Bechwati, 2008).

6.2. Data analyses and results

In this study, Structural Equation Modeling (SEM) was used to analyze the data. Structural equation modeling is a multivariate analysis of multivariate regression families that In addition to more precisely extension general linear model allows

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Table 5
Main statistics.

Latent variable	Items	N	Mean	Loading factors	Cronbachs Alpha	AVE	CR	KMO	sig Bartlett
Perceived Usefulness	Mobile phone banking would make doing my banking faster	384	5.92	0.89	0.915	0.74	0.92	0.838	0.000
	Mobile phone banking would be useful for doing my banking	384	5.64	0.86					
	I think that using mobile phone banking would improve the way in which I do my banking	384	5.60	0.84					
	Mobile phone banking would make doing my banking easier	384	5.74	0.84					
Perceived Ease of Use	The interaction with mobile financial services is clear and understandable	384	5.45	0.79	0.901	0.70	0.90	0.818	0.000
	Learning to use mobile phone banking would be easy	384	5.82	0.83					
	I find it easy to get mobile financial services to do what I want it to do	384	5.63	0.91					
	I think it would be simple for me to become skilled at using mobile phone banking	384	5.36	0.82					
Social Norms	People who are important to me would recommend using mobile payment services	384	5.07	0.84	0.890	0.68	0.89	0.786	0.000
	People who are important to me would find using mobile payment services beneficial	384	5.13	0.92					
	People who are important to me would find using mobile payment services a good idea	384	5.22	0.87					
	More people around me use mobile banking services	384	4.52	0.64					
Trust	I think mobile banking service is reliable	384	4.99	0.73	0.846	0.59	0.85	0.800	0.000
	Mobile banking Service has been created to help customers	384	5.67	0.74					
	I think the banks are fulfilling their obligations, In the field of mobile banking	384	4.79	0.74					
	I would trust my bank to offer secure mobile banking	384	5.14	0.86					
Word of Mouth	24. I'll talk about the strengths of the mobile banking with people I know	384	4.96	0.73	0.877	0.70	0.87	0.714	0.000
	25. I'll talk about mobile banking to be quite positive	384	5.05	0.85					
	26. If you ask me about mobile banking, I will definitely recommend it	384	5.25	0.92					
Attitude	Use mobile banking service is compatible with my lifestyle	384	5.25	0.88	0.903	0.70	0.90	0.804	0.000
	Use banking services is compatible with most banking activities	384	5.14	0.80					
	Using mobile payment services is a wise idea	384	5.55	0.83					
	Using mobile payment services is a beneficial	384	5.54	0.84					
Intention	I'm going to use mobile banking services	384	5.54	0.88	0.893	0.68	0.90	0.820	0.000
	I want to gain more information on mobile banking	384	5.68	0.66					
	I'm going to do my payment through mobile banking service	384	5.54	0.89					
	I want to do manage my bank accounts using mobile banking	384	5.42	0.86					

Table 6
Measures of goodness of fit.

Statistics	χ^2/df	RMSE	PMR	CFI	TLI	AGFI	P–Value
Suitable values	3>=	0.08>=	0.10>=	0.9=<	0.9=<	0.8=<	0.05>=
Values obtained	3.196	0.076	0.079	0.926	0.916	0.807	0.000

the researcher to a set of regression equations simultaneously examine. Therefore, in this study to confirm or refute hypotheses, structural equation modeling and path analysis were used in particular. Path analysis (structural model) is technique that the relationship between the variables (independent, intermediate and dependent) shows simultaneously. But first question raised is whether this model is a good model? To answer this question, it must be examined statistics χ^2/df and other measures the model. According to AMOS output is presented in Table 6, the proposed model is a good model.

The following analysis results structural models standard estimation mode and significant coefficients will be discussed.

The first path, reveals positive relationship between perceived usefulness and attitude toward use of mobile banking. In this analysis, is calculated Beta coefficient 0.37 and t-value = 4.17. Confirmation of this hypothesis means that perceived usefulness create a positive attitude towards mobile banking. These cases have been examined in many studies related to the adoption of new technology. The second path, shows that perceived usefulness, will increase the possibility of using mobile

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Table 7
Standard coefficients and significance values for 15 hypothesis.

Hypothesis	Path	Path coefficient	t-value	sig	Result
H1	Usefulness...Attitude	0.37	4.17	0.000	Accepted
H2	Usefulness... Intention	0.68	4.54	0.000	Accepted
H3	Ease of Use...Usefulness	0.73	11.33	0.000	Accepted
H4	Ease of Use... Attitude	0.62	10.28	0.000	Accepted
H5	Social Norms...Ease of Use	0.31	3.79	0.000	Accepted
H6	Social Norms...Usefulness	0.36	4.54	0.000	Accepted
H7	Trust... Ease of Use	0.22	2.97	0.003	No Accepted
H8	Trust...Usefulness	0.47	2.98	0.003	Accepted
H9	Attitude...Intention	0.32	2.1	0.036	Accepted
H10	Word of Mouth...Ease of use	0.57	3.35	0.000	Accepted
H11	Word of Mouth...usefulness	0.55	2.21	0.027	Accepted
H12	Word of Mouth...Social Norms	0.60	12.93	0.000	Accepted
H13	Word of Mouth...Trust	0.68	12.18	0.000	Accepted
H14	Word of Mouth...Attitude	0.85	14.93	0.000	Accepted
H15	Word of Mouth...Intention	0.79	3.03	0.002	Accepted

banking services ($\beta = 0.68$, t-value = 4.55). The path between perceived usefulness and perceived ease of show that ease and convenience is the kind of benefits ($\beta = 0.73$, t-value = 11.33). Therefore, the third hypothesis is confirmed. In the fourth hypothesis, Given the amount of $\beta = 0.62$ and confirmed its significance (t-value = 10.28), perceived ease has positive and direct effect on attitude using mobile banking. Therefore, the customers can easily learn to use mobile banking will increase the rate of adoption of this technology. In the fifth hypothesis, due to the $\beta = 0.31$ and t-value = 3.75, were confirmed positive impact of social influence on perceived ease of use. Sixth hypothesis, examines the effect of social influence on perceived usefulness. The results obtained ($\beta = 0.36$ and t-value = 4.54) shows the positive effect of social influence on perceived usefulness. The results obtained of the seventh path reflects the no impact of trust on perceived ease ($\beta = 0.22$ and t-value = 2.97), therefore the seventh hypothesis is rejected. The amount of $\beta = 0.47$ and t-value = 2.98 in the eighth hypothesis reflects the positive impact of trust on perceived usefulness. Ninth hypothesis, reflecting the positive impact attitude on intention to continue using mobile banking. Since the $\beta = 0.32$ and t-value = 2.1, therefore, this hypothesis is confirmed. According to values given in Table 7, hypotheses 10, 11, 12, 13, 14 and 15 is confirmed.

7. Conclusion and discussion

The necessity of investigating main factors affecting the adoption of new technologies is clear based on the numerous studies. However, none of the researches have reviewed word of mouth as a new affecting parameter on the adoption of mobile banking in Iran effectively. This paper for the first time introduced word of mouth as an effective parameter in the adoption of mobile banking in Iran. In the present study, the factors affecting the adoption of mobile banking, including perceived usefulness, perceived ease of use, social norms, Word of Mouth, trust, and attitude which were identified and tested in many studies, were tested in the context of Iran. According to the findings, all tested factors had significant effects on the adoption of mobile banking and individuals adopt or do not adopt mobile banking based on these factors. For instance, perceived usefulness and perceived ease of use were identified as the most effective factors in the sample. Results of this study are also in line with the findings of other studies (Hanafizadeh et al., 2014; Mohammadi, 2015, 2015a; Shaikh and Karjaluoto, 2015). This study differs from some past studies as follows. First, past studies have limited and mainly focused on SMS banking and virtually no studies have addressed the use of mobile banking applications via smart phones or tablets; however it is addressed in this study. Second, Unlike previous studies, this study is addressed to users who connect to the Internet using the smart mobile phones. Third, in this study for the first time, the word of mouth factor impact on the adoption of mobile banking in Iran is considered as the main contribution of the paper. Finally, unlike (Hanafizadeh et al., 2014) which examines the variables only and directly on intention to use, this study investigates the effects of variables indirectly on "intention to continue" through attitude; And unlike (Mohammadi, 2015, 2015a), which investigated the effects of social influence, trust and word of mouth on ease of use and perceived usefulness. Hence, the current study is expected to provide different outcomes and enlighten invaluable information on the users behavioral patterns.

The empirical analysis demonstrated several major findings. Interpretations based on these findings and implications are discussed below (Fig. 2).

Perceived ease of use and perceived usefulness both had significant positive impacts on consumers' attitudes towards their intentions to continue. In this case, as customers realize that using mobile banking makes their banking easier and faster, mobile banking would be more appreciated. On the other hand, perceived ease of use had the significant effect on perceived usefulness; In fact, perceived usefulness played a mediating role in the relationship between attitude and intention to continue. When consumers feel that it is easy to learn and use mobile banking, their positive perception of usefulness well increase. The results showed that perceived benefits are, the major determinant of attitudes towards mobile banking. This result is sync with studies (Hanafizadeh et al., 2014; Mohammadi, 2015, 2015a; Shaikh and Karjaluoto, 2015) in the field of

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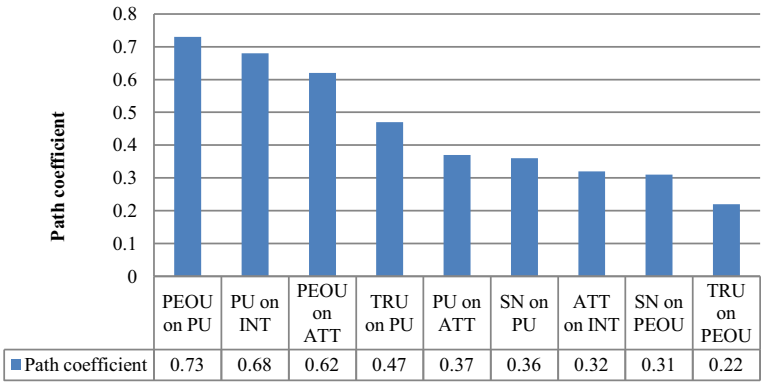

Fig. 2. Hypothesis path coefficient.

online banking. In mobile banking, when consumers feel that mobile banking saves time, and offers a wide range of services and could reduce the service fee, increased their positive look towards it will also increase, as a result, tend to use mobile banking applications.

Social influence and trust have direct and positive effects on perceived usefulness. Furthermore, these two factors indirectly influence the attitudes and intended use. Also, the results showed that social influence has a positive effect on perceived ease. It means with education, and increasing customers' knowledge about mobile banking and its functionalities, managers can make it more reliable, and then more appreciated. On the other hand, bank managers are recommended to identify and train individuals with potential capabilities of using information technologies and encourage them to invite their relatives and friends.

Finally, the results of this study show that Word and Mouth have much and positive impact on other factors. Word and Mouth with $\beta = 0.85$ has the greatest impact on the attitude factor. Are Intention ($\beta = 0.79$), Trust ($\beta = 0.68$), Social Norms ($\beta = 0.60$), perceived ease of use ($\beta = 0.57$), perceived usefulness ($\beta = 0.55$) in rank later (Fig. 3).

These results are considered as the main contribution of this study. These findings indicate that word of mouth has a high impact on adoption of mobile banking in Iran which is a step forward in the studies carried out in this area such as (Hanafizadeh et al., 2014; Mohammadi, 2015, 2015a). According to the culture of the people of Iran in the field of personal communication and the boom of smart phones usages and the increasing use of social networking applications such as Telegrams, Instagram, Viber, Whatsapp, etc. It is recommended to bank managers to share some information about mobile banking in an intangible, indirect, and unofficial way.

In conclusion, it can be stated, this study shows if customers learn the services and benefits of mobile banking, trust the system, understand that working with this new technology is useful and easy and hear the positive talk about mobile banking services, will use mobile banking services. According to the results, banks and financial institutions should be aware that if customers have a positive attitude towards mobile banking, will attempt to use it. Cultural infrastructures, making people aware of advantages of the technology by the means of social networks, increasing banking services via mobile softwares and improving quality of Internet connection, can be useful for integrating a banking system with International Modern Banking and increasing its usability.

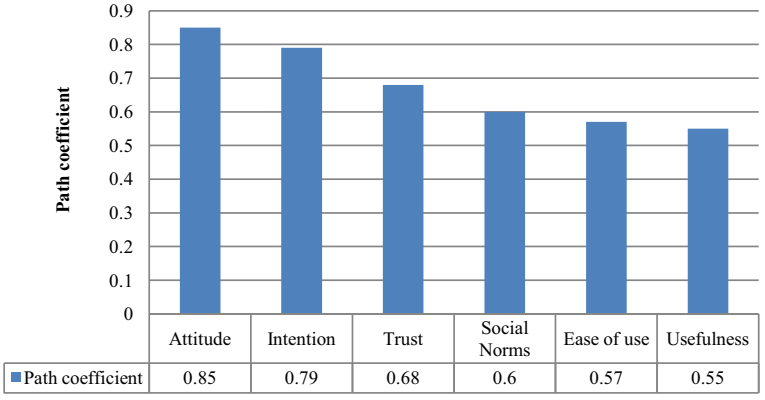

Fig. 3. Word of Mouth impact on other factors.

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8. Limitations and recommendations for further studies

One of the major limitations of the paper is that it studies only the Internet users and non-users are not considered. In other words, the scope of this study covers the Internet user but not all individuals. Furthermore, the model is cross-sectional, which measures consumers perceptions and intentions at a single point of time. Further studies are recommended to use longitudinal survey because individuals perceptions and preferences are likely to change as they achieve more experience over time.

Another limitations of this study is that demographic factors are not considered. For further studies we recommend studying adoption of mobile banking, according to demographic factors such as age, gender, income and education.

The results showed that word and mouth has high positive impact on other factors; Therefore, for future works it is recommended to study word of mouth affect on factors such as Awareness, Credibility, Compatibility with lifestyle and needs.

Due to the high impact of word of mouth on the adoption of mobile banking, we recommend studying of factors that affecting positive word of mouth by consumers of mobile banking services.

Eventually, extending the research to other technology-based areas such as mobile loyalty, electronic organizational software adoption, electronic readiness, and mobile learning with a more comprehensive research sample appear to heighten the current perception toward use of IT applications.

The study's data was analyzed using two different software application AMOS 23 and IBM SPSS Statistics 23. Due to the need of different kinds of analyzes leading to the lack of compatibility in measurement scales. It is recommended that future studies use the same software for all analyzes if possible.

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