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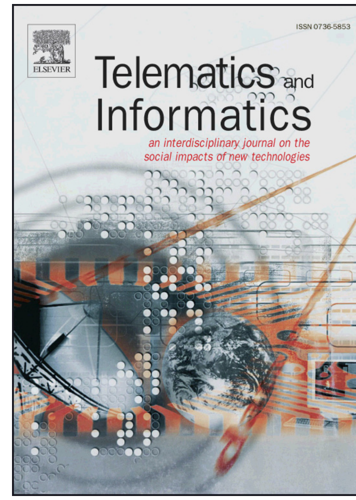

A model to analyze the effect of mobile banking adoption on customer interaction and satisfaction: a case study of m-banking in iran

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A Model to Analyze the Effect of Mobile Banking Adoption on Customer Interaction and Satisfaction
: A Case Study of M-Banking in Iran

Abstract

Customer relationship management (CRM) is always considered as an essential task for increasing customer satisfaction for mobile banking (m-banking), and it is, like other areas of marketing, constantly evolving and updating. Also the vast use of the mobile banking by internet users, persuades electronic banking to use customer relationship management system in adoption m-banking. In this paper, the effects of using CRM system in the adoption m-banking on customer satisfaction and interaction, which is considered as the most important factor in the success of banking industry, is analyzed. The case studies of this paper are Iran top e-banks and the sample population chosen, are the customers of these banks, and a conceptual model is suggested to analyze the use of adoption of mobile banking on customer interaction and satisfaction. Factors that are introduced as influencing variables in this model on the customer satisfaction and interaction are: affective commitment, trust, loyalty, willingness to re-visit, number of visits, profitability, and Involvement. Collecting information in this article is performed by completing 243 questionnaires by staff of the communication with customers sector of these banks and their customers. The results of the statistical analyses conducted on these data indicate that all the variables addressed in the model, have a positive impact on the customer relationship and satisfaction except the trust.

***Keywords**:* Mobile banking, Adoption, Customer interaction, Customer relationship management (CRM).

1. Introduction

The bank's ability to create and maintain customer satisfaction, is a key index which may strongly determine the success of the business. In order to create and keep up the competition with other competitors, it is necessary that banks try to provide superior service to customers so as to increase customer satisfaction. To achieve this, it is very important that banks carefully understand customer needs and discover their desires, and be able to provide products or services to customers that meet their demand or exceed their expectations. In these particular cases, the customer relationship management (CRM) can help the bank reach this important task. while the traditional CRM is executed through software systems and data bases, and is usually used by large banks, there is evidence that mobile banking, as an emerging phenomenon, are utilized to facilitate the implementation of the CRM by small banks (Trainer et al., 2014; Wu et al., 2005; Zhao, 2015). The emergence of the mobile banking, changed the way people communicate with each other and made organizations and banks to run their own websites on mobile banking_so that they can communicate and interact directly with their customers (Martinez et al. 2013; Hajli et al., 2014; Malthouse et al., 2013;). On the one hand, the mobile banking has the power turn offline customers who are not a member of electronic banking, into online customer; and on the other hand it is highly permeable and timely because of the viral information spread (Kaplan et al. 2010). Customers may easily visit other websites which have similar products or services (a customer may follow several websites of these banks) and this means that having loyal customers would not be an easy task anymore (Lu et al., 2010). Meanwhile with the continuous development of mobile banking, the passive role of consumers of information "receiving" has evolved to information "producers" (Jahn et al., 2012). In addition, they expect more than advertising banks' services through banks posters. They have greater demands from the mobile banking, such as getting more valuable and meaningful information about the bank and its products through interaction with the bank (Sashi, 2012). With changes in mobile banking and the evolution of its customers, numerous researchers now believe that customer interaction could be interpreted as "repeated interactions between consumers and the organization which strengthens the costumer's emotional, mental or physical investment" (Brodie et al., 2011). Improved bank performance can be realized through a rate increase of sales, and increasing the profitability. For example, among the 500 marketing strategies that include the use of mobile banking, a 24% increased sales was more than strategies that did not consist of mobile banking platform (Boehmer Et al., 2014). In the past few years, mobile banking has completely disrupted the rules of the CRM and this means that the rules of CRM strategic models may no longer have their theoretical or practical functions (Stephen et al., 2010; Hoyer et al., 2010;). Mobile banking enables the real time broadcast of personal perspectives, thereby is considered as a threat to CRM and relationship marketing. In addition, they provide a convenient channel for communication of marketers and consumers. Moreover, they provide the context for co-create products, services and the creation of value, and facilitate the access to massive data of views, opinions and feelings of customers (Albrich et al., 2012; Hamidi et al., 2018). In recent researches in this area, some concepts and variables whose impacts on the customer relationship management system in adoption of m-banking has been examined, are variables such as the affective commitment, loyalty behavior, satisfaction, trust and Involvement. In between, variables such as interest growth rate, sales, site visits, profitability, willingness for re-visit, and the amount of money spent for each visit, are variables that has not been used in recent researches. That is why in this article all the variables presented in this section are included in the conceptual model and their effects on the system will be examined. In fact, the main goal of this paper is to investigate the impact of CRM system in the adoption of m-banking on the development of customer interaction in electronic banking. This paper seeks to replicate the proof of the positive impact of customer interactions on the affective commitment, behavioral loyalty, satisfaction, trust and Involvement. It also seeks to confirm the impact of customer interaction on measurable measures, such as the rate of profit growth, sales, number of visits, profitability, willingness to re-visit, and the amount of money spent for each visit. In continue, the structure of the paper is organized as follows: in the second part, a literature review is given. In the third part, the conceptual framework and assumptions are explained. In the fourth part, the findings are analyzed. In the fifth and sixth part, discussion and the results obtained are stated, and in the seventh part, limitations and future opportunities are addressed.

2. Literature review

2.1 Customer interaction

Customer interactions is turned into a main issue in the literature marketing; nevertheless, authors and researchers have not agreed upon a clear definition of the concept of interaction, and have examined it from several perspectives. The foundation of marketing researches (2008) believes that the customer interactions is a result of a shared creation process, which creates a deeper and stronger connection with the organization. Lusch and Vargo (2006) has introduced the interaction as the concept of shared and interactive production in which costumer Involvement is the core of the production process, which is formed by the cooperation of other actors in this process. The majority of authors agree that the process of interactive production exists in the development of customer interaction. This reality shows that there is a potential relationship between the Web 2.0 and customer interaction, through the process of interactive production. Many authors sought the relationship between consumer and bank. For example, one global survey from 311 managers of different industries which was conducted by the economic intelligence unit in 2006, defines the customer interaction as a deep, meaningful, and durable relationship over time between the customer and the organization (Voyles, 2007). McEwen (2004) shows that the interaction depends on the logical and emotional relationships of the costumer and the organization. Appelbaum (2001) adds that if people find logical trust and deep affection and interest to the organization, they would remain loyal to them. Patterson et al. (2006) add another aspect to the concept of customer interactions, and describe it as the level of physical, cognitive, and affective presence in relation to the organization. Similarly, Sedley et al. (2008) show that an organization can increase the costumer’s affective, mental, and physical commitment towards the organization by creating opportunities for repetitive interactions. Hollebeek (2011) describes the customer interaction as the severity of mental motivation which is determined by a certain level of cognitive, affective, and behavioral activities in the interactions with the organization. Vivek et al. (2012) recognize the customer interaction as the power of Involvement and communication of people with the organization or organizational activities, that both the costumer and organization can initiate the interaction, and that interaction grows cognitively, emotionally, behaviorally or socially. These different definitions show that this concept needs a model to evolve in which more aspects should be examined and considered when studying the customer interaction. In 2012, Sashi suggested his perspective as the customer interaction cycle and considered seven steps for it. The author believes that the first step is connection, which may either be using offline method, such as traditional vendors, or new online methods like mobile banking. Next step, is the exchange between the consumer and the bank or other consumers. The introduction of the web 2.0 had a major impact on this section of the interaction cycle, so that space and time limitation was rapidly vanishing. If the interaction step was satisfactory, then the probability that the costumer stays in touch, would increase, and there will be progress towards interaction in the third step of the customer interaction cycle. The fourth step is to maintain communication of emotional bonds without long-term relationship. On the other hand, the fifth step of the cycle is connected with development and growth of a computational or affective commitment. Then, in the sixth step, the consumers may share their positive experiences of a product, brand or organization (bank) and become a fan, and finally when the customers obtained both affective and logical commitment towards the organization, they would interact with their organization and the cycle will be complete. Bowden (2009) believes that the customer interaction is a mental process in which the affective and computational commitment leads to customer satisfaction, and therefore, customer loyalty. In addition, Thackeray et al. (2008) in a creative process on how to interact with customers, concluded that the interaction could increase reference to the bank, sell and purchase, and loyalty by producing the product or services that are closer to the needs of customers. Brodie et al. (2011) show that loyalty, satisfaction, empowering the consumer, emotional bond, trust and commitment are the key results of consumer interaction with the bank. Importance of the relationship between consumer and bank are addressed in the study by Gallup (2009), in which the performance index for small banks is investigated in terms of maintaining the account and the total dollars spent per month, found that the customers who have emotional bond with banks, have significantly increased willingness for commercial achievements that customers who have logical relationship with their costumer.

2.2 Customer relationship management

In the previous part, was explained the concept of customer interaction and it was shown that the competitive advantage of an organization/bank lies within the development of a multifaceted relationship with customers. In this part, the customer relationship management will be investigated as a potential tool to increase consumer interaction. Payne & Frow (2005) believe that customer relationship management in the context of information technology emerged in the mid-90s. After that, Zablah et al. (2003) stated that in the customer relationship management is taken from concept of relationship marketing. Authors have introduced the different definitions of the CRM as a chain, in which tactical and narrower definitions are located at one end, strategic and wider definitions are located at the other end, and the integrated implementation of customer-oriented technology are located in the middle of the chain. First of all, authors like Kutner & Cripps (1997) has described the CRM as the marketing based on data. This definition, is located at the first part of the categorization of Payne & Frow, and refers to the implementation of a project with a specific technological solution. Similarly, the definition presented by Stone & Woodcock (2001) refers to the CRM as methods, technologies, and abilities of e-commerce which is used by banks to manage their relationships with their customers. On the other hand, some authors offer a wider perspective and definitions closer to the CRM aspects. For example, Parvatiyar & Sheth (2001) wrote that the CRM is a comprehensive and wide strategy, retention, and cooperation with selected customers lead to the creation of value for the bank and the customer. Similarly Paulissen et al. (2007) relied on the perspective provided by Chen & Ching (2004), and defined the CRM as a process which uses the technology to find, analyze, and share information for the better understanding of the needs of consumers and the development of insightful relationships. All these definitions share the same goal which Tuzhilin (2012) describes as the intention to customers acquisition (identification and gain), customer retention (serving and maintaining), and better growth of the customer. In their study, Mangold and Faulds (2009), discuss about the new communicational method, in the age of mobile banking. They claim that the internet is now known as the main stream of media, and the fact that customers are moving away from traditional advertisement media, such as radio, television, journals, and newspapers (Rashtchy et al., 2007). In addition to these, they show that in recent years, mobile banking has become an important source of information, and they are also used as a source for purchase decision (Vollmer et al., 2008, Swift, 2000). This trend is due to the trust resulted from mobile banking as a source of information for consumers in comparison with traditional methods of communication of large banks (Foux, 2006). In traditional CRM strategy, customer relationships were managed in order to maximize the value of the bank. However, with the advent of the mobile banking, soon the relationship management was out of control of organizations (Orlikowski et al., 2010). As previously discussed, a significant proportion of the online content, is now being produced by customers. In this regard, Grime Stoker, director of care general director of digital care of the BT, says that we should draw ourselves where our customers are, and interact with them, in their conditions and in their intended site, rather than anticipate so as they come to us (Baird et al., 2011). This view is supported by Woodcock et al. (2011), which states that this new era, is actually a new opportunity for commercial organizations to deal with the creation of the relationships with online consumers, using the channels that they have chosen, and stay in touch with them, while they are working, playing, or traveling. Some businesses have already realized the impact of technology and mobile banking on their relationships with their customers. Forrester (2008) in a questionnaire, asked 200 individuals of commercial decision makers from around the world, to explain the importance of internet in making customer interactions. Most of the respondents (70%) stated that they already use both online and offline methods in their customer interaction programs. In addition, 41% of the respondents emphasized that the digital technologies have been employed as their main strategy among customer interaction strategies in this year.

2.3 Customer relationship management in the mobile banking

The concept of customer relationship management has gained a particular popularity among commercial banks and brands in recent years, though not much attention is paid in the scientific publications (Reinhold et al., 2012). This part will mention the definitions and explanations that authors provided on this subject. In the previous section, it was mentioned that banks are losing control of a part of their customers and this control is being transferred to the customers. But, what could be done with this released customers' information in this space, available to the organization? These measurements are at the heart of the movement towards the socialization of customer relationship management. In fact, to achieve this, organizations are forced to find new communicational channels that do not have enough control over them (Solis, 2011). Baird & Parasnis (2011) say that the CRM in the mobile banking realizes this that banks and their customers interact, and establish a mutually beneficial relationship. They show that the relationship grows when banks start to think like a customer, and with the interaction with them on mobile banking, give valuable suggestions. With the creation of contexts for effective conversation and with listening to customers, business organizations are able to obtain information that enable them to design new programs to interact with the customer, provide better products and services and finally achieve optimized processes (Solis, 2011). According to this approach, Woodcock et al. (2011) claim that the social components, add more value to the traditional CRM, with the increase and the creation of new communicational opportunities. Most importantly, the authors show that adding the social component to the traditional CRM may lead to other achievements such as increased customer interaction and customer acquisition. Paul Greenberg (2010), author and expert in the field of CRM in the mobile banking, states his definition of this concept as: "The CRM in the mobile banking is a philosophy and strategy of business, which is for interaction with costumer in the common conversations, they are trusted and transparent in order to provide the value of mutually beneficial in environment business." Woodcock et al. (2011) recognize the purpose of the CRM in the mobile banking, to identify, interact, and sale to customers with the creation of a relationship with them. The customer interaction emerges as a main element in the new version of the CRM (the version that contains the social components). Socializing the CRM, provides this opportunity for the banks to interact with their customers, and improve their relationships which would benefit both sides (Foster, 2008). In Table 1, a summary of the researches has been done in various areas of customer relationship management in mobile banking with the findings and focus of the paper are presented.

3. The conceptual framework and the theories

3.1 Research methodology

The methodology used in this paper is descriptive; a descriptive study, describes what exists, and considers the existing conditions or relationships, common believes, current processes, tangible developing effects. Its' attention, is primarily the present time, however, often investigates the past events and effects, related to the existing conditions. This paper deals with the description of what exists, therefore, the research methods used in this paper, is descriptive. In terms of survey method, this paper has used a cross-sectional survey research. The cross-sectional method is conducted in order to collect data about one or several features in a section of time through sampling from the population. Given the main objective of the study, which is the analysis of the effects of implementing the adoption of m-banking on the customer interaction and satisfaction, in terms of the relationship of the variables, this descriptive study is correlational, and given that the paper case study are e-banks, the present study is applied in terms of objective. To examine the model hypotheses and express the relationships of the model variables, the simple linear regression method in the software SPSS is used in this paper.

Table 1. Some of the research conducted in the field of adoption of m-banking

Authors	Title	Journal	Purpose
Baptista. et al, (2015)	Modeling CRM in the era of mobile banking	Australasian Marketing Journal	Provide a conceptual model for CRM through mobile banking and provide criteria to identify customers
El Aziz, et al., (2014).	How small business can compete in mobile banking?	International Journal of Information Management	The introduction of competition mechanism for small organizations on mobile banking
Florian Moser, (2015)	Customer relationship management in the age of mobile banking: adoption of m-banking introduced the concept of home	Journal of Interactive Marketing	Provide a framework for implementing mobile banking in the bank , CRM strategies presented in accordance with the level of customer interaction
Haluk Koksal (2016)	Social-media connection to the CRM	Hawaii International Conference on System Sciences	Effective Factors in Implementing CRM through mobile banking
Hanafizadeh, et al., (2014)	The transition from CRM to adoption of m-banking	Journal of Strategic Marketing	Conceptual Model to transform traditional CRM Traditional CRM optimal use of technology in this field
Hong-Lei (2014), Hernan et al., (2010)	Interaction with customers, seller-buyer relations and media-social	Management Decision	Development of a conceptual model of customer engagement on mobile banking and providing basic strategies to increase customer satisfaction in the Web2.0
Johara, (2014).	Customer service in mobile banking: the effect of the popularity of our feelings in response Aviation Agency	Hawaii International Conference on System Sciences	Review the effectiveness of mobile banking users on strategies to respond to user agencies, Air America
Puschel, et al., (2010)	Division LCP: a framework for evaluating user interaction in mobile banking	Computers in Human Behavior	The introduction of criteria for the classification of users on mobile banking through user Like and Comment
Rodrigo et al., (2016)	Social customer relationship management and empower students in electronic banking system	Electronic Customer Relationship Management	adoption of m-banking effect of dynamic distributed systems-learning and customer satisfaction
Shaikh, et al., (2015)	The first step in mobile banking: measurable impact on customer satisfaction online account management	Production and Operations Management	The effects of online response to problems or praise for customers in mobile banking on brand credibility
Sreejesh et al., (2016)	Adoption of m-banking performance dimensions: resource-based view, dynamic capabilities	Association for Information Systems	The introduction of infrastructural dimensions as the dimensions of process performance measurement tool adoption of m-banking

3.2 Demographic information of the participants

This study has been conducted in Iran about active and top e-banks in the country that exploit the CRM in the mobile banking. As noted, the questionnaires were distributed among the customers of banks and the staff of sector of customers’ relationships, where a total of 243 questionnaires were filled over a period of 3 months which were used in this study. The questionnaire was provided online and was available for the customers in official pages of banks in the mobile banking. In Table 2 the information of participants in the questionnaire can be seen. As it stands, 55.6% of participants are men and 44.4 % are women. Most age of participants is between 20 to years and also the education of 89.3% of the participants is Bachelor's and Master's degree, and from among them, 72.4% of the participants are graduates in the field of computer and information technology and this means that they are familiar with the subject in questions.

Table 2. Demographic data Participants

Demographic variables	Percent	Number
Sex(243)		
F	55.6	135
M	44.4	108
Age(243)		
1- 20	2.1	5
20 - 30	76.1	18.5
30 - 40	18.1	44
> 40	3.7	9
Education(243)		
Master of Science	55.1	134
Bachelor of Science	34.2	83
Associate's degree	4.9	12
Diploma	4.1	10
PhD	1.6	4

3.3 Characteristics of participants

In this part, the information obtained from customers regarding the use of the e-banks as well as activity in the mobile banking have been brought. In this regard, 8 top online banks which were addressed in the article by Mansourifar (2016), were chosen and the participants were asked to comment on the extent of the use of each. In the article by Mansourifar, banks have been evaluated and ranked based on the creativity, innovation, views, user experience, shopping experience, marketing and other specialized items. As seen in Table 3, most of the users' uses from e-banks belong to Mellat Bank, Pasargad Bank, and Melli Bank, respectively.

Table 3. Users' use mobile banking services

The name of bank (Percentage of use)	Average user rating	Top rated	Lowest Rating
Mellat Bank (24.7%)	3.62	5	1
Pasargad Bank (19.8%)	2.23	5	1
Melli Bank (7.3%)	1.56	4	1
Eghtesad Novin Bank (6.3%)	1.48	5	1
Saderat Bank (5%)	1.45	4	1
Tejart Bank (4.9%)	1.44	4	1
Saman Bank (4.7%)	1.36	4	1
Final	1.25	4	1

In this survey, 7 cases of the mostly used mobile banking in Iran were also chosen. For the users' use of these banks and the mobile banking, 5 choices were created which have 1 to 5 points, respectively. According to the Table 4, most mobile banking used by users in this study belong to the Eghtesad Novin Bank, Saderat Bank and Pasargad Bank.

Table 4. Quality of the mobile banking services

Name	Average user rating	Top rated	Lowest Rating
Eghtesad Novin Bank	4.82	5	1
Saderat Bank	4.21	5	1
Pasargad Bank	3.10	5	1
Sepah Bank	2.98	5	1
Parsian Bank	2.85	5	1
Saman Bank	2.80	5	1
Melli Bank	2.59	5	1

Average online time of users during the day, was asked from them and the results are shown in Figure 1. As can be seen, over 53% of the participants are online more than 3 hours in a day, 28% of them are online between 1 and 3 hours, and 18% of them are online less than 1 hour.

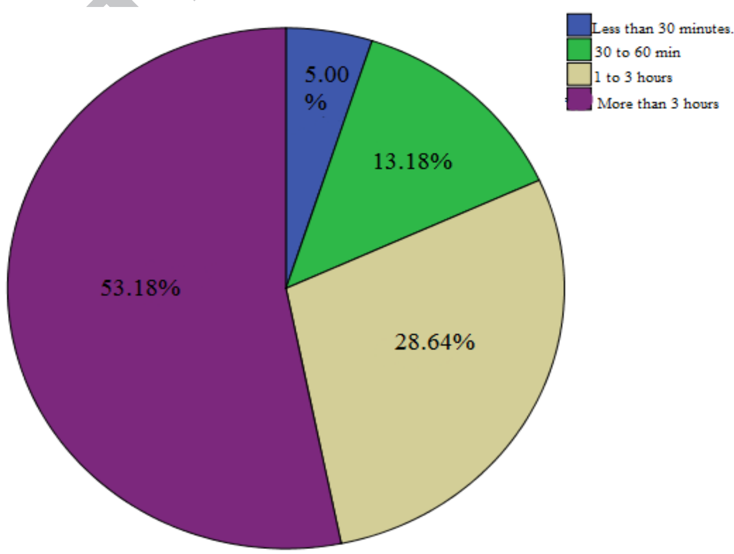

Figure 1: Online time of customers during a day

The number of friends and contacts of users in the mobile banking was also questioned and the results can be shown in Figure 2. In this figure it can be seen that 56% of the participants have over 100 social contacts in their social pages. 23% of them have 50 to 100 contacts, and 21% have less than 50 contacts. The more the contacts of people is in the mobile banking, the greater the impact they can have on others.

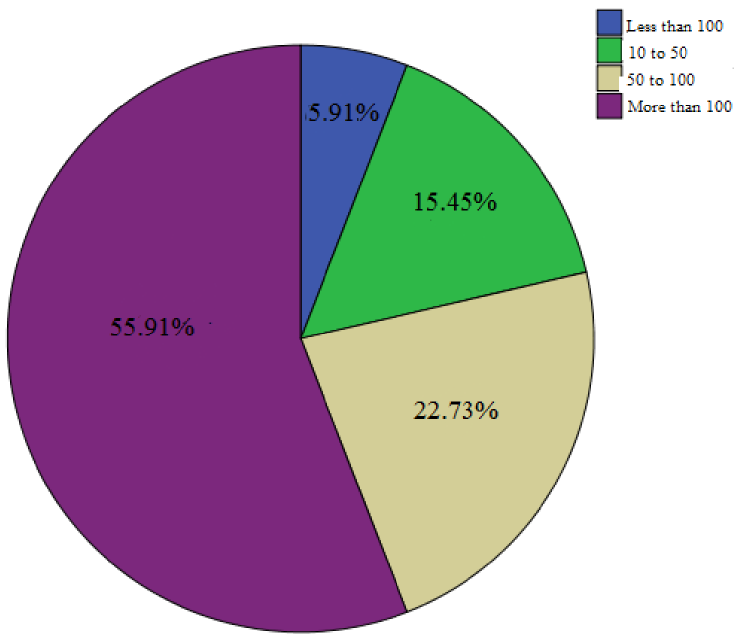

Figure 2. Number of friends, contacts and fans of customers in mobile banking

3.4 Conceptual model

The main objective of this paper is to examine the effects of the use of customer relationship management system in the mobile banking on customer interaction and satisfaction that is used in the e-banks. By reviewing the literature of the adoption of m-banking, and models provided by Vivek et al. (2012), Bowden (2009), and Matila (2006), a comprehensive model was extracted as figure 3. In this model, variables effective on customer interaction and satisfaction are separately listed. Variables influencing customer interaction that are considered in the model include affective commitment, trust, loyalty, willingness to revisit, number of visits, profitability, satisfaction and participation. In the model presented by Vivek et al. (2012) on customer interaction, the positive impact of customer interaction on variables such as trust, affective commitment, loyalty and profitability are expressed. By reviewing the recent works as well as the proposed variables about customer interaction by Gallup (2009), a questionnaire was designed in which each variable was considered as a separate part, and the degree of effectiveness of each variable of the customers of banks and staff of the sector of relationships with customers of banks was collected in the form of some questions, and analyze. In this model, variables are divided into 4 parts, which will be described below:

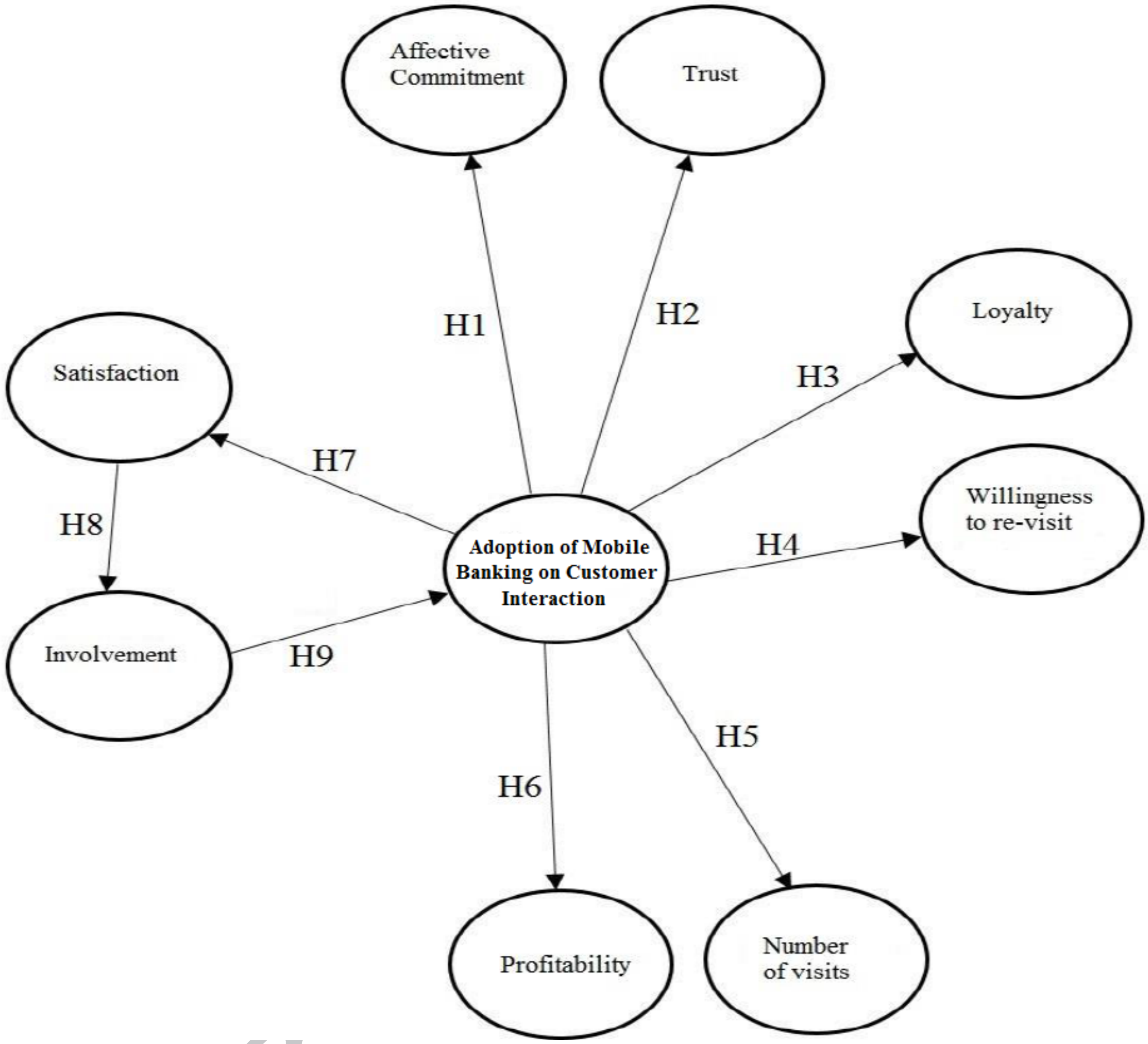

Figure 3. Conceptual Model

3.4.1 Customer interaction and emotional feedbacks

By affective commitment to trading partner, we mean mental dependence on others and it's based on the detection of emotions, loyalty and dependency (Verhoef et al., 2002). Bansal, et al., (2004) suggest that affective commitment is reflection of a psychological bond, such as the owners of Harley-Davidson Motorcycle shop who motivate customers to continue the relationship with the shop. Higher levels of the advantages of this relationship is yielded when customers benefit from the suggestions and activities offered by the organization and this would lead to the creation of more affective commitment (Bendapudi et al., 1997). Studies of Mittal et al., (2001) may have presented the strongest level of support of the differences in specific data processing among new customers against loyal customers. They investigated that to what extent is the ratio of evaluation of credit card services, different for these two. They understood that the importance of this feature over time is different based on the interests of customers to brands. This difference is subsequently attributed to the difference in the goals of customer usage. So new customers and loyal customers cannot behave identical based on their different needs. Consequently authors argue that organizations that do not consider these important basic concepts in the division, have less probability of customer acquisition and have also less probability to retain their loyal customers. Affective commitment is rather by feelings and is created by reciprocity relationships in a relationship. For example, a customer that has chosen a restaurant and continuously visits there, after sometime, establishes emotional ties with the restaurant staff, and they also consider specific services for him because of these formed emotions. If customers be loyal and happy, then the customer commitment to the vendor includes both emotional and obligation estimate and the customer and vendor are in a sustainable relationship with strong emotional bonds (Sashi, 2012). Customer interaction takes place when the customers have strong emotional bonds during communication with vendors. Customer interaction increases customers' role in the processes of the creation of value or the interactive production. Cooperation of customers in the processes of value creation, increases their satisfaction from meeting their needs, especially regarding that these needs change overtime. These customers act by establishing relationships in the mobile banking as fans of the organization in relation with customers and non-customers (Gustafsson et al., 2005; (Harrison Walker, 2001). When the relationship is low, but there is high emotional bond, we have pleased customers. When there is high relationships and low emotional bond, we have loyal customers. Loyal customers have obligation estimate in relationships where replacement costs or lack of proper supplier, would lead to the continued relationship with the same supplier. Loyal customers do not communicate emotionally with vendors and continue their relationships only for logical reason. Because of the barriers for the exit, their relationships with organizations persist overtime. It is unlikely that loyal customers advise and recommend vendors by themselves. Seller can develop the affective commitment with loyal customers to persuade them to play the role of patron and supporter of the organization. In addition, with the development of trust in loyal customers, vendors can convert them into organization fans (Garbarino Wu et al., 1999). When there is high relationships as well as high emotional bond, we have supportive customers and have interaction with them. The relationship is determined with cooperative action and mutual adjustment, Involvement in the benefits and responsibilities and planning for future transactions. Customers that become fans have sustainable relationships along with affective commitment and obligation estimate. The fans are both pleased and loyal. A classic example fan customers are professional sports teams fans who are loyal supporters of their team, they become happy with teams win and become depressed with its' lose, have sustainable relationships with the team with trust and commitment and know themselves as a part of the team. Fans are associated with other fans and interact with each other and strengthen their loyalty and satisfaction (Sashi et al., 2012).

H1: customer interaction has a positive relationship with a person's affective commitment to the bank whose focus is on interaction.

When one side of a bargain in a relationship, trusts in the other side's honesty and integrity, trust is created. In the evolutionary model of currency relations, trust is very important because it is considered as a mechanism to promote the reliability in the relationship (Ganesan, 1994; Morgan et al., 1994). Researches show that positive and effective interactions in relationships, beyond currency exchanges, lead to trust in currency relationships (Ganesan, 1994; Lamb et al., 2000; Parkhe, 1993). With the help of customer Involvement in real beauty campaign**,** D.A.W Company could have a successful interaction with customers. The goal of D.A.W of this campaign was to create self-confidence in teenage girls. When organizations are interacting with customers, the opportunity will be provided so as to gain customer's trust by creating satisfaction. So further interaction must create trust in relationships, because people feel that the organization cares for them and thinks of common interests (Delgado Ballester et al., 2003; Ravald et al., 1996; Doney et al., 1997). In the field of brand management completely benevolent in order to deliver the greatest benefits for the customer, based on the common purposes and values. Therefore, previous experience with brand services, provide an important basis to establish and strengthen customer perceptions of the organization's benevolence. Although trust can be the former potential of customer interaction (Brodie et al., 2011; Chaudhuri et al., 2001), but most probably, it can be a result of customer interaction (Hollebeek, 2009; 2011). According to social exchange theory, in relationships based on trust, both sides experience mutual desirable exchange which evolves overtime (Cropanzano et al., 2005; Saks, 2006). So, people who have more interactions, have more likely, more trust and have relationships with higher quality with the organization. Marketing literature also indicates that positive interactions in beyond relationship exchanges, increases the level of trust (Ganesan, 1994; Lamb et al., 2000; Sashi, 2012). Thus, higher interaction creates more trust in a relationship.

H2: customer interaction has a positive relationship with the trust of the individual to the bank whose focus is on interaction.

3.4.2 Customer interaction and customer retention

Brand loyalty is introduced as response to the biased behavior, which occurs overtime in the organization's decision-making unit, given the activities of the rival brands, as a function of psychological assessment processes. The concept of loyalty to the brand focuses on psychological elements and behavioral components of loyalty. A customer interacting in the chain of belief-attitude-behavior would have higher transfer rate will. In addition, an interacting customer may have a better perspective towards a product, bank, or brand and as a result, he may feel further loyalty to the organization. Brand loyalty reflects the deep commitment of the customers to continuously repurchase from the brand (Oliver et al., 1999). In contrast, customer interaction is a summary of communications and vote of the customer purchase with the brand (Vivek et al., 2012). Marketing researchers argue that customer interaction may strengthen the loyalty and buying decision through a durable and strong mental relationship. Interaction with a brand affects feelings and attitudes of the customers towards the brand and therefore affects brand loyalty too (Sprott et al., 2009). Sellers should find the best of the products for their customers even if these products are offered by their rivals. Personalization of products for customers makes customers feel special and the sense of loyalty rapidly grows in them, and makes them even to advertise and promote the organization in their personal pages. Taking into account the special facilities for loyal customers and different rewards, such as special accesses, special information, or special and unique offers for them. Creating application for use on the mobile phones is another way of interacting with customers. Through gamification, the organization encourages customers to participate in its' intended activities with giving special rewards, such as assigning points for likes, or following something in the mobile banking that is intended by the bank. Organizations also need to measure the amount of activities and the financial profitability of customers in each of these strategies to continue their activities (Moreno-Munoz et al., 2016).

H3: customer interaction has a positive correlation with person's loyalty to the bank whose focus is on interaction.

H4: customer interaction has a positive correlation with person's intention to revisit the bank whose focus is on interaction.

3.4.3 Customer interaction and profitability

According to the theory of consumption values (Sheth et al., 1991) and the perspective of the consumer value (Holbrooke, 2006), motivations of the consumers to interact, depends on the value they expect from the interactions with the bank. Value may be internal or external. When the consumer is pleased of the interaction with the organization, it leads to the creation of intrinsic value (Holbrooke, 2006). But, an innovation, which helps man to do better some activity, leads to extrinsic value. According to active procedure of interactive production and participation in the process of design and production, such as personalization of IPhone appropriate to the needs of individuals, there will be greater interaction. Customer interaction with the mobile banking of the organizations, can increase the profitability and value of customers. By cognitive and conscious interaction of customers in mobile banking, the organization is able to enhance profitability. Because in the mobile banking of organizations, rationalist customers may want to achieve a rapid and comprehensive perception of useful information and socialist customers also tend to receive the product in bulk and contact whom they have common interests, purposes, or needs (Babin et al., 1994; Gummerus et al., 2012; Jaakkola et al., 2014; Cheng et al., 2009). So, people with different cognitive participations in mobile banking of organizations obtain values such as acquisition of news and skills of using the products and feeling a relaxing and pleasant experience. Yu et al. (2013) found that those who intend to participate in the social network of organizations, are because of obtain value as aesthetic value, practical value, and social values Jaakkola et al., (2014) divided the motivation of this participation into three dimensions of content-oriented, relationship-oriented, and character-oriented. Previous studies in the mobile banking, has shown a close relationship between Involvement and profitability (Hollebeek, 2013).

H5: customer interaction has a positive correlation with the number of visits to the bank whose focus is on interaction.

H6: customer interaction has a positive correlation with one's profitability to the bank whose focus is on interaction.

3.4.4 Customer interaction and motivation

Previous studies have shown that interaction is largely based on customer satisfaction (Butcher et al., 2001; Rauyruen et al., 2007). Consumers achieve satisfaction, initially by evaluating the services provided by the organization (So et al., 2013). Researches show that this evaluation factor has strong statistical relationships which are referred to as halo effect (Crosby et al., 1987; 1990). If the relationship between a vendor and customer, or among a society of customers and vendors leas to satisfaction, then they will remain connected and continue the relationship, and progress towards interaction. Satisfaction may be prior to the process of purchase, and dissatisfaction in each step can disrupt the procedure and lead to customer abandonment (Firat et al., 2006; Li et al., 2008). In addition, researchers have combined various types of cumulative evaluation to form a single thorough structure, such as the quality of the relationship. Accordingly, a combination of quality services acquired by the customer, profitability, and customer satisfaction seem to be an appropriate concept for the formation of a higher order structure of the evaluation of the brand services. Although empirical researches on the conceptual relationship between the customer interaction and services evaluation does not currently contain enough information, but the literature of employee interaction, about the potential relationship between theoretical constructs in this field, provides useful views. In particular, research on interaction from the perspective of employee's shows that job satisfaction is the result of the job and interaction of an organization (Saks, 2006; Macey et al., 2008; Bridson et al., 2008). Customer-based evaluation factors, such as trust, and profitability, and perceived brand performance, are described as factors influencing customer interaction behavior (Verhoef et al., 2010; Harris et al., 2004). So, increased brand evaluation services may stimulate customer interaction. Although evaluation of brand services is vital to the success of the service, but this is unreasonable to assume that if all customers' experience from evaluating the brand services is positive, this will lead to customer interaction. Therefore, evaluating brand services are necessary to create a powerful customer interaction, but not sufficient.

H7: customer interaction has a positive correlation with the person's satisfaction to the bank whose focus is on interaction.

According to the literature of CRM, satisfaction is defined as an overall assessment based on the purchase or consumption of goods or services overtime (Anderson et al, 1994; Garbarino et al., 1999) and it is as a measure of the effectiveness of a CRM strategy which aims to create long-term satisfaction and retention of customer which is defined in contrast to the satisfaction on exchange. Mano et al. (1993) emphasize that when customers react to the satisfaction achieved, they pay less attention to the product or participation. So customer satisfaction may not be obtained merely through products and its' choices. This topic is also raised that if customers are not involved with brand products or service provider, then, customers' commitment to the brand is almost impossible (Hofmeyr et al., 2000). When uncommitted customers are satisfied, they may regularly change brands, because the brand or provider of the service, appears as an insignificant component for the customer in the process of deciding (Warrington et al., 2000). Soderlund suggests that this level of brand recognition, results in repeated purchase by the customers (Soderlund, 2002). So participation is likely to be an essential component of a broader concept from the interaction process in which the intermediate is the relationship between satisfaction and commitment to customers with repeated purchase. Developing trust in relationships of customers and service providers, to help develop customer commitment is also recommended. For example, trust can change the relationship of the customer with the brand, with high intrinsic recognition and based on minimizing risks and maximizing profitability, into emotional relationships where it is followed by dependence, identity, and interest for the customer. In other words, trust can be a necessary condition to achieve a real commitment (Hess et al., 2005 Delgado & Munuera, 2001).

H8: customer satisfaction has a positive correlation with person's participation with the bank whose focus is on interaction.

According to Van Doorn et al., (2010) interaction is reflected through customer behavior towards an organization or brand which is more than a typical purchase process, and is influenced by stimulation motivation. In the field of customer interaction, the interactive production should be considered which is recognized as a component in the creation of interactive value between the organization and its customers (Lusch et al., 2006). Interactive production includes customer participation in the core of production, according to his wishes. We have focused on the axis of the participation of both sides involved in the customer interaction. While we assume customer participation and interaction as merged, they are actually distinct, and participation is even prior to customer interaction. On the other hand, customer interaction is defines as the degree of participation in the production or provision of services. This interaction can bring upon high levels of passion and enthusiasm, and subsequently further interaction of the customer with the organization (Bagozzi et al., 2004). For example, Teddy Factory had a positive impact on customer interaction and welcoming the final product through the website of this organization that had 8 million members in 2009 (Ashby, 2009; Dabholkar, 1990). Brand is able to persuade customers to interact with it by identifying their common interests. Groups of customers who interact with the brand, strengthen the brand communities, and this could affect the product design process in an organization.

H9: customer participation has a positive correlation with individual interaction with the bank whose focus is on interaction.

4. Findings

In the conceptual model presented for analyzing the effects of employing customer relationship management system on interaction and customer satisfaction, a number of 8 variables were raised and that the effect of each of them were calculated by SPSS software. A number of questions were posed for each of these variables, which were asked from the participants in the inventory and are described in the following. Six questions were asked from the affective commitment variable including the significance of the customer relationship with the bank, the rate of emotional attachment to the bank, the rate of commitment to the bank and the relevance of bank pages in the mobile banking. Four questions were posed for the customer satisfaction, and their satisfaction with the banking services and the bank's accountability and support were some of the issues that were questioned. Three questions were posed for the trust variable and the quality of banking services, the ratio of bank performance to the customer expectations and proportionality of goods prices and the banking services which were asked from the customers. Sharing the experiences of customers with the bank in the mobile banking, and the rate of consumer interest to invite others to use the banking services were other items asked in the form of three questions about the customer loyalty. Regarding the profitability, 4 questions were asked from the participants including the purchase rate of customers, the effect of criticism on customers and the customer recommendations in the mobile banking for making decision on purchase and the effectiveness of criticisms or customer recommendations in the mobile banking on purchase intention of others which were asked from the participants. Regarding the customer participation with the bank, 9 questions were asked and issues such as the significance of sharing experiences of customers in the mobile banking, the significance of maintaining communication with the bank, the willingness of customers to communicate with competing banks, comparing the prices or the services of the bank with the competitors, comparison of the prices or the banking services with its competitors, and the customers' attention to the pros and cons of the bank to communicate. The number of customers visiting the bank and also customers' willingness to revisit the bank are other items asked in the questionnaire. For the questions raised in this questionnaire, the five-point Likert scale was used and the option are as follows : very low =1, low =2, average =3, high=4, very high=5. In Table 5 the descriptive information obtained from the questionnaires such as the minimum value, maximum value, mean and the standard deviation are indicated.

Table 5. Descriptive data

variable name	Standard deviation	Middle	Highest	Lowest
Interaction	1.081	3.35	5	1
Affective commitment	1.203	2.47	5	1
Satisfaction	0.950	3.26	5	1
Trust	0.980	3.28	5	1
Loyalty	1.056	3.16	5	1
Profitability	1.201	2.74	5	1
Involvement	1.215	3.05	5	1
Number of visits	1.388	2.62	5	1
Willingness to re-visit	1.684	2.87	5	1

4.1 Confidence coefficient of variables

In this paper the simple linear regression in SPSS software was used to test the model hypotheses and expressing the relationships between model variables. For this test, first the confidence coefficient of scales was measured which was done by SPSS software and by calculating Cronbach's alpha coefficient and finally shown in Table 6. In the Cronbach's alpha method, the coefficient obtained should be over 0.7 to be accepted and as shown in Table 6, all the scales used in the paper could earn this value. The variable of interaction with the coefficient 0.921 has the highest value and then satisfaction with a coefficient 0.897 and loyalty with a coefficient 0.890 have the greatest value of confidence coefficient, respectively.

Table6. The questionnaire reliability coefficient measures

Measure	Cronbach's alpha reliability coefficient

Interaction	0.921
Affective commitment	0.887
Satisfaction	0.897
Trust	0.874
Loyalty	0.890
Profitability	0.718
Involvement	0.873
Number of visits and Willingness to re-visit	0.755

4.2 Linear regression test

Having determined the acceptable alpha coefficient for the scales, it is now turn to do regression tests. Table 7 indicates the results of regression test for each of the hypotheses which is analyzed in the following. First the test was done between interaction and affective commitment where the correlation coefficient 0.29 and the probability of significance 0.000 indicate a positive and significant relationship between interaction and affective commitment. This positive relationship is confirmed by regression test and means that the variance in the variance of affective commitment can be predicted by the interaction variable. Then a test was done on the interaction and trust where the correlation coefficient 0.009 and probability of significance 0.156 ($P > 0.05$) showed no significant relationship between interaction and trust and this hypothesis was rejected by regression analysis. The next test between the interaction and loyalty showed the correlation coefficient 0.328 and probability of significance 0.000 indicating the positive relationship between the two variables. The correlation coefficient between the variables of interaction and willingness to revisit was obtained 0.167 and the probability of significance 0.000 indicates the positive relationship between the two variables. In the next test, between the interaction and the number of visits the correlation coefficient 0.237 and probability of significance 0.000 confirm the significant positive relationship between the two variables. Similarly, in the test between the interaction and profitability, the correlation coefficient 0.425 and probability of significance 0.000 indicated a positive correlation between the two variables. The correlation coefficient for the test between the interaction variables and satisfaction was obtained 0.342 and the probability of significance 0.000 indicated a positive relationship between the two variables. Therefore, the hypotheses 3-7 were confirmed by regression tests. This means that variance of loyalty variables, willingness to revisit, visit numbers, profitability and satisfaction could be predicted by the interaction variable. Then the test between variables of satisfaction and participation of correlation coefficient 0.225 and probability of significance 0.000 confirmed the positive relationship between the two variables and it means that the variance of participation variable could be predicted by the satisfaction variable. Finally by conducting a test between the variables of participation and interaction, the correlation coefficient 0.339 and probability of significance 0.000 indicated a positive relationship between the two variables, which means that variance in the variable of interaction can be predicted by the participation variable. Accordingly the hypotheses 8 and 9 were also confirmed by the regression analysis.

Table7. Simple linear regression test results

independent variable	**The dependent variable**	**Number theory**	**Test of significance P-Value**	**The correlation coefficient R^2**	**Result**

Interaction	Affective commitment	Hypothesis1	0.000	0.291	Supported
Interaction	Trust	Hypothesis2	0.156	0.009	Not Supported
Interaction	Loyalty	Hypothesis3	0.000	0.328	Supported
Interaction	Willingness to re-visit	Hypothesis4	0.000	0.167	Supported
Interaction	Number of visits	Hypothesis5	0.000	0.237	Supported
Interaction	Profitability	Hypothesis6	0.000	0.425	Supported
Interaction	Satisfaction	Hypothesis7	0.000	0.342	Supported
Satisfaction	Involvement	Hypothesis8	0.000	0.225	Supported
Involvement	Interaction	Hypothesis9	0.000	0.339	Supported

5. Discussion

Due to the rapid growth of the electronic banking especially mobile banking by people, many banks and the business owners tend to attract more customers through such websites. Also, the mobile banking, provide opportunity for the business owners to find the needs of their customers and present effective methods to obtain and create customer loyalty which were already inaccessible. Therefore, currently, the significance of using mobile banking technology and in the following more interaction and relationship with the customer to enjoy the benefits of customer relationship management is completely obvious. Also the development of mobile banking, much information on the tastes, interests, opinions and needs of users in the mobile banking is being exchanged and in the case of organizing and correct using of such valuable information, an important step would be taken in order to identify customer needs. In this article, 8 variables were raised to analyze the effects of using customer relationship management system in the mobile banking and by collecting the required data, statistical analysis was conducted on them. These variables were extracted using the literature and the current articles on the subject and eventually a model was proposed where the effect of each of the variables will be measured. In this study, conducted in the SPSS software environment, first the confidence coefficient mentioned in the questionnaire was measured and the results can be seen in Table 5. At this point, using Cronbach's alpha to calculate the confidence coefficient, it was found that the proposed variables are enjoy high reliability 0.7 and have the requirements for the regression tests. But simple linear regression was used in order to prove the positive relationship between the variables and estimating and predicting the rate of change based on the constant variable of the model and the results of this test is used in Table 7. In this test, the correlation coefficient (R^2) above 0.1 and significance test (P-Value) less than 0.05 indicate the positive relationship between the two variables. For example, the correlation coefficient of Hypothesis 3 between interaction and loyalty values 0.328, which means that 33% of the variance of loyalty can be explained by the interaction variable that is an acceptable value in this scale. It was found that the profitability variable with the correlation coefficient 0.425 has the highest positive relationship with the interaction variable. This means that higher customer interaction with the bank brings about higher customer profitability for the bank. After the profitability of satisfaction variable with correlation coefficient 0.342 and then participation variable with a correlation coefficient 0.339 have the most relationship with the interaction. But taking into account the results of the regression test, the final model will be as the Figure 4. As shown in Figure, the only variable that positive relationship of which was not proven with interaction was the trust variable with a correlation coefficient of 0.009 and probability of significance 0.156.

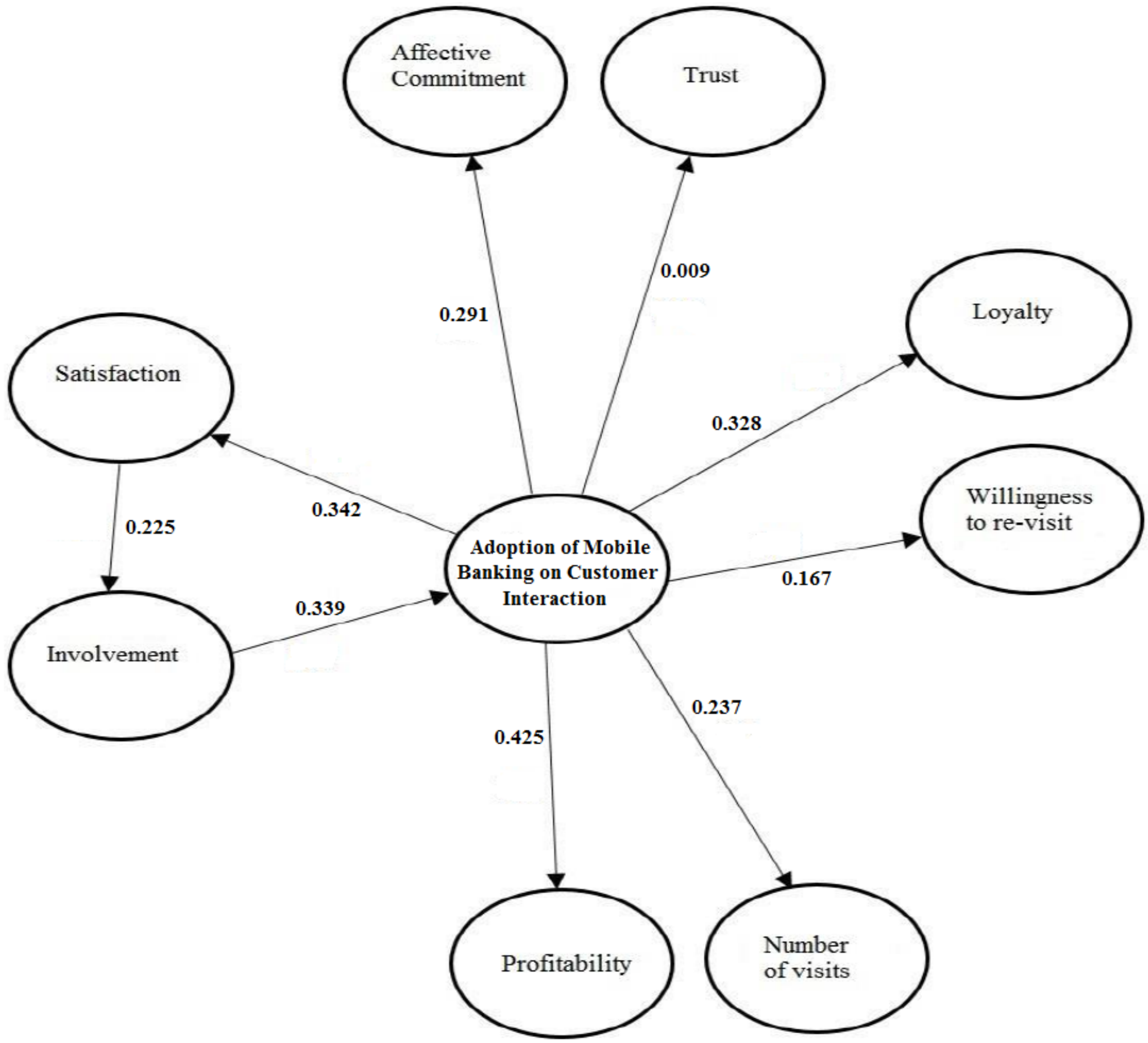

Figure 4. The final model taking into account the correlation coefficients of the regression test

6. Conclusion

Electronic banking provide an opportunity for the business owners to find their customer needs. Thus the significance of using mobile banking technology and in the following more interaction and communication with customers to take advantage of the benefits of customer relationship management is obvious. In this paper, a model was presented to analyze the effectiveness of customer relationship management system in the mobile banking on customer interaction and satisfaction. As previously noted, customer relationship management stepped into marketing with the aim to enhance customer satisfaction and increase the life cycle of the customer, and in recent years combination of this concept with the mobile banking, which are an integral component of modern human life have formed a concept called customer relationship management in the mobile banking called adoption of m-banking and in this article we review its different aspects. In discussing adoption of m-banking it was attempted to increase customer interaction with the banks to increase the customer lifetime cycle and somehow keep the customer in their business. Therefore, the model presented in this paper tries to measure the effect of different variables including affective commitment, trust, loyalty, willingness to revisit, visit numbers, profitability and collaboration on customer interaction and satisfaction. In the previous tests, by doing regression tests all the hypotheses of this study except for hypothesis 2 which was the customer trust were confirmed and the proposed model taking into account the correlation coefficient in the regression test would be as Figure 4, where the positive relationship of affective commitment variables, loyalty, willingness to revisit, visit numbers, profitability, satisfaction and participation with customer interaction were confirmed. In this test the hypothesis that the customer trust and their interaction with the bank has a positive relationship was rejected which indicates that despite the passage of several years of emergence of electronic banking in Iran, users still are unconfident to such banks. One of the limitations listed in this article was the number of banks employees working in the section for customer relationship and contributed in collecting information in this article, their number was small and in case the banks cooperated in this regard, their number would be much higher, which could yield highly accurate and effective results. Unfortunately, because of the low interest in research work and lack of focus on results, the number of cooperation in this article was not satisfactory. The banks do not release their sales information due to the confidentiality, therefore no accurate figures such as sales rate, interest rate, the cost spent for each visit, and the direct sales through the mobile banking for the exact calculation of the profitability variable in this article were available. By accessing to such information, more accurate results can be recorded on the effectiveness of customer relationship management system in the mobile banking. As a suggestion, researchers can explore the impact of customer satisfaction and advertising factors on the attitude and trust in the adoption of mobile banking in future research.

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