Abstract

By development of information technology, new concepts and phenomena have been created in human life. Electronic business is one of these concepts, and one of the necessary instruments to develop electronic business is online banking, but each new technology must be localized with culture and traditions of the society corresponding with people’s needs in order to cause technology adoption and to increase customer satisfaction. In line with this objective, the researchers examined variables of EUCS based on customer satisfaction. Using the information obtained through library research and interviews conducted with teachers and banking experts in Iran, a questionnaire was prepared and delivered to the customers used the online banking services. The questionnaires consisted of 24 cloze tests and one open question that were studied by SPSS software. Using correlation analysis method and stepwise regression analysis, the data were analyzed and finally the hypotheses of the research were confirmed, and it was showed that timeliness of the provided services was at the first step of importance, the content of the provided services was at the second step, the accuracy of the provided services was in the third step, the ease of using the provided services was at the fourth step and the format of the provided services was at fifth step of importance that were affected on customer satisfaction.

Keywords: online banking, electronic-commerce, customer’s satisfaction, key customers.

1. Introduction

By development of information technology (IT), all aspects of human life have been fundamentally changed such that the current world has been faced with a complete change. Perhaps we can say that the today industrial world is not faced any option except choosing this change, and repose causes disorder in social, political and economical relations of individuals of a society and even international relations. New communication technologies have conquered the temporal and spatial dimensions and have changed the today world as a global village so that as if the current human being has travelled to another world. During the last two decades of twentieth century, three important innovations, that is, Fax, cell phone devices and internet have shown that how development of communication can change the industry of services and the methods of people’s lives and working.

Advances in information and communication technologies (ICT) in addition to improving service delivery, have also reduced the cost of services. The impact of information and communication technology (ICT) in the field of trade and commerce caused structural changes in the global economy and the emergence of the phenomenon of e-commerce, a process by which all products are sold and purchased via computer connecting networks, telecommunications, or both.

By development of ICT and increasingly development of electronic business and transactions worldwide and the need of business to the presence of a bank to transact financial resources, online banking as the inseparable part of e-business has an important role, and we dare say, without online banking, e-business will not be realized (Venus, 2002, 120-121).

1. electronic commerce
At present, several banks in the world present electronic services and there is an increasing part of customers who are willing to do their banking operations using electronic systems and without referring to the bank. Using online banking services, the bank customers can do their banking operations at their intended place and time and the banks also benefit from lower operational costs due to reducing the number of the staff and branches. In fact, we can say that the use of online banking in the everyday affairs does not belong to shoulds and should nots but is an inevitable fact.

By setting up Iran’s membership in the World Trade Organization (WTO) and entering foreign competitors into financial markets, Iranian banks also need to develop their services in line with technological changes. From one hand, before providing any new services, some studies should be done about being economical these services, the compatibility of the new services with society’s needs, and that which system can provide these services for customers. In developing countries, by studying the provided services by banking systems of the developed countries, the banks usually imitate their actions and provide services, and due to lack of researches done and also lack of needed studies, the services they provide to the customers are incomplete (Specialized Marketing Monthly, No. 31, p 18). It is while the banks should consider social and economic conditions of the country before offering any new services. Because the low level of people awareness, lack of knowledge about different groups of people and their demands, people’s distrust toward new services and inappropriate propagations cause a new service cannot be easily expanded among people (Sheikhani, 1999: 229).

From one hand, there is an increasing part of customers who are willing to do their banking operations using electronic systems and without referring to the bank and response to customers’ needs by traditional context is impossible and creating the ground and using computer and electronic information technology is necessary, and slowness and ignorance of this market create an appropriate atmosphere for companies and other banking and non-banking institutions, by offer their services as far as possible, obtain a great shear of financial activities (Azar Saberi, 2001: 236).

The researches conducted on customers’ satisfaction of online banking have caused understanding their ideas and way of thinking about using online banking, and show that how these ideas and way of thinking influence on customers behaviors about online banking. Therefore, identifying factors that influence on customers’ satisfaction of online banking services and which of these factors have more impact are important, because identifying these factors helps bankers to apply their marketing strategies to improve new formats of online banking.

2. Literature

According to the search results on the World Wide Web (internet), centers for maintaining theses and dissertations, the physical researches and virtual libraries, the researches done in this field are as following:

1. The measurement of end-user computing satisfaction of online banking services in Finland by Carey Pikkarainen and Treo Pikkarainen, Eiolu University, 2006.
   This study was done using the EUCS model. At first, the variables were translated into Finnish and the related questionnaire was prepared. Its validity was confirmed by three academic and professional institutions at banking sector. The questions were measured by five-point Likert scale, and questionnaires were distributed among 427 subjects at North Finland, but only 268 responses were received. By testing hypotheses, they concluded that the content, the ease of applying services and accuracy of services were effective on customers’ satisfaction respectively, but the format and timeliness of services did not any impact on the customers’ satisfaction. In addition, it was specified that the individuals with high income had more satisfaction of electronic services and women did establish more friendly relations with electronic services.

2. The study of factors affecting the adoption of electronic banking by customers in the view of managers, by Taibeh Kamali, Mashhad Firdausi University, 2005.
   At first, the researcher explains the current status and development problems of electronic banking and studies the risks of online banking including the lack of complete security in the system and dangers resulting from designing, executing and maintaining the system as well as incorrect use of goods and services by customers.
   In this study, that descriptive and field methods have been used and the results have been presented as the applied ones, the relationship between the two variables of choosing electronic banking and its relative
advantages has been proven with correlation coefficient of 824. Finally the researcher became believable that for adopting online banking by customers, at least the four following factors should be prepared:

- Creating appropriate infrastructures of telecommunications and development of optic network according to the voluminous electronic banking operations,
- Increasing the level of culture and online banking literacy of society individuals for development of online banking,
- Training the personnel and technical authorities of banks to influence on establishment and development of electronic banking,
- For the development of online banking, only banks’ activities may not be sufficient and the public support and accompany is necessary.

3. The study of factors affecting the intention of customers’ use of online banking services in Iran, by Shamsi Yazdani Fard, Tehran University, 2006.

Using technology acceptance developed model, the researcher studied the intention of customers’ use of internet banking services. In this research, the self-efficiency variable of using computers as an external variable, that affects the understanding of the individual about the ease of use and perceived beneficial, has been studied. The findings of this research indicate that the technology acceptance developed model is an appropriate for understanding the intention of customers’ use of internet banking services. In addition, there is a significant relationship between the ease of perceived use and the individual’s understandings of usefulness of these services with intention of using internet banking services. Also, the self-efficiency variable of using computer through affecting on ease of the perceived use and the individual’s understandings of usefulness of these services influences the intention of using internet banking services.

Among other studies conducted in the field of online banking, we can refer the following:


5. The study of the impact of electronic banking services on Bank Mellat’s customers’ satisfaction by Mosa Najafi, Qazvin Islamic Azad University, 2006.


Among the various models proposed for measurement of users’ satisfaction of electronic banking services, EUCS1 model has been widely accepted among researchers. According to this model, users’ satisfaction with online banking services depends on the content, accuracy, format, the ease of use and timeliness of the provided services. Using EUCS model, the present research studies the satisfaction of the users of online banking services of Agricultural (Keshavarzi) Bank.

3. Research objectives

The main objective of this research is to measure the satisfaction of users of electronic services model of Agricultural (Keshavarzi) Bank using EUCS model. Other objectives of this research are:

- Identifying factors and strategies that cause the customers of online banking to be more satisfied.
- Providing recommendations to Agricultural Bank in order to provide services that are useful from the customer’s perspective in order to increase the use of these services by clients.

4. The diagram of research analytical model

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1. End-user computing satisfaction
The hypotheses that seem to clarify the trajectory of research and its trends, and assist the researcher in achieving the expected results, are:

5. The main hypothesis

Online banking services affect customers’ satisfaction.

6. Sub-hypotheses

1. The content of online banking services influences on customers’ satisfaction.
2. The accuracy of the online banking services influences on customers’ satisfaction.
3. The format of the online banking services influences on customers’ satisfaction.
4. Easy to use the online banking services influences on customers’ satisfaction.
5. Timeliness of the online banking services influences on customer satisfaction.

7. Methodology

7.1. Target population and sampling methods

The research method of the present study consists of two kinds; the library method which is related to the research literature and field research method which relates to collecting data for confirming (or rejecting) hypotheses. Therefore, the present research method is survey-descriptive. The present research is an applied one; because the obtained results are applied ones, and the applied aspect of results is dominant to the theoretical aspects. The statistical population in this study is all customers of Agricultural Bank in Hamadan province, who use online banking services, and due to its large size, it is assumed infinite statistical society. Among all branches, some of them were selected as cluster sampling. For doing cluster sampling, at first, we choose large groups and then among them we select a group as the sample. The number of population in this research was obtained as 386 based on Morgan table. Since there was the possibility of drop-out of the
questionnaires in returning by members of the participant group, 402 questionnaires were distributed. The sample size was determined by considering 16 main branches, 20 participants for each branch, and 6 service branches with 11 participants for each branch, and the total sample size was obtained as 386 (n=386).

8. Research tool

To achieve the required data in this study, the following methods were used.

1) Library study:
   This tool was used to obtain information about the theoretical principles and to achieve data resulted from the previous researches and literature. In this regard, the authors referred to available and related resources, and used the subject-matters of the books, magazines and internet sites.

2) Doing interviews with professors:
   For designing research, choosing the statistical population, sample selection, questionnaire design, determining the validity of questionnaire using interview method, the required information was collected from supervisor and advisor.

3) Collecting data from the questionnaires:
   Questionnaire is considered as one of the most common tools for collecting data in surveys and includes a set of purposeful questions that the obtained results of them are quantitative and measurable and make possible testing the statistical hypotheses.
   The designed questionnaire included 24 cloze items that were measured by 5-point Likert scale with options “very high, high, somehow, little, very little”. Also an open question (descriptive) was designed at the end of the questionnaire to reflect any subject that preoccupied the mind of a participant but it has not been mentioned in the questionnaire. Questionnaires were completed by the researchers in collaboration with the Agricultural Bank employees of Hamadan province.
   In accordance with the usual questionnaires used in survey researches, the questionnaire of the present study consists of two groups of questions, including the main questions and the diagnostic questions. To convert the information to data and quantities (values), the responses to the questionnaire items have been used and have been scored based on Likert scoring spectrum, and the values have been extracted from raw data. Therefore, the scale of the main questions of the questionnaire has been measured with the interval scale.
   To design and set the questionnaire, primarily based on the research objectives, indices related to the variable were identified and extracted using history and literature of the research, perspectives of supervisor and advisor, as well as electronic banking experts. Also, using perspectives of supervisor, advisor and the technical experts, the items (questions) were designed based on judgment validity, and before sampling, to be sure about face validity of the questionnaire and to examine its efficiency and to identify likely problems such as working method and executive difficulties, pilot sampling was done in a small scale and sample size of 30 participants in central branch of Hamadan Agricultural Bank, and the questionnaires were completed with the presence of the researcher and the statistical sample and collected data were studied. Also at this stage, to study the face validity of the questionnaire, the participants were asked about the rate of clearness and comprehensibility of the questionnaire and that what have been their understandings of the questions. Given that the items of the questionnaire were unambiguous for members of the sample group and the subjects had the same understanding of the questions, the early validity of questionnaire was approved. The early validity was also approved using Cronbach’s alpha coefficient with value of 0.950.
   To study the validity of this questionnaire regarding the subject matter, content validity method was used. In this questionnaire, we paid special attention to views of professors and technical experts, as well as we tried the vague and irrelevant questions to be avoided in designing the questionnaire. Therefore, it was diagnosed that the questionnaire has content validity.

To measure the reliability of the questionnaire and structural validity, Cronbach’s alpha test was used. To calculate Cronbach’s alpha coefficient, the variances of scores of each sub-set question of the questionnaire items and also the total variance of all items were calculated; their coefficients were calculated using the following formula (Sarmad, 1997: 166).
In this study, the questionnaire’s alpha was calculated using SPSS software and its value was determined equal to 0.897. Since the value of alpha coefficient is higher than 0.7, therefore, the questionnaire enjoys an optimum reliability. The obtained data were processed by SPSS software and to analyze the main hypothesis inferentially, multivariable regression and to test the hypotheses, the correlation test were used.

9. Results

In order to examine the relationship between timeliness of services, content of services, accuracy of services, the ease of use of services, and the format of services and the customers’ satisfaction, Pearson correlation analysis method was used (Table 1) that based on the results obtained by analyzing the correlation, there is a positive and significant relationship between the timeliness of provided services and customers’ satisfaction ($r=0.461$, $p<0.001$); and according to the results obtained by analyzing the correlation, there is a positive and significant relationship between the content of services and customers’ satisfaction ($r=0.318$, $p<0.001$). Based on the results obtained by analyzing the correlation, there is a positive and significant correlation between the accuracy of services and customers’ satisfaction ($r=0.262$, $p<0.001$). Based on the results obtained by analyzing the correlation, there is a positive and significant correlation between the ease of use of services and customers’ satisfaction ($r=0.251$, $p<0.001$). According to the results obtained by analyzing the correlation, there is a positive and significant relationship between the format of services and customers’ satisfaction ($r=0.221$, $p<0.001$).

To examine the timeliness of services, content of services, accuracy of services, the ease of use of the services, and the format of services in predicting the rate of customers’ satisfaction, the method of stepwise regression analysis was used that the results were reported in Table 2.

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1. SPSS data
In the first step, the variable of the timeliness of provided services was entered into the regression model that the results of regression analysis showed that the effect of variable of timeliness of services on customer’s satisfaction is positive and significant ($p<0.001$, $R^2=0.461$, $df=1$, $F=98.67$); therefore, the timeliness of services can explain up to 21% of the variance in customer satisfaction ($R^2=0.212$).

In the second step, the variable of the content of services was entered into the regression model that the results of regression analysis showed that the effect of variable of the content of services on customer’s satisfaction is positive and significant ($p<0.001$, $R^2=0.563$, $df=2$, $F=84.68$); therefore, the coefficient of determination of the content of the services variable is $0.317$, i.e., ($R^2=0.317$), and the rate of its growth after entering the second variable is $0.102$, so 10% of the variable of customer’s satisfaction is predicted by content of services, and its $31.7\%$ is predicted through a linear combination of content of services and timeliness of services.

In the third step, the variable of the accuracy of services was entered into the regression model that the results of regression analysis showed that the effect of variable of the accuracy of services on customer’s satisfaction is positive and significant ($p<0.001$, $R^2=0.615$, $df=3$, $F=73.69$); The coefficient of determination of the content of the services variable is $0.378$, i.e., ($R^2=0.378$), and the rate of its development after the arrival of the second variable is $0.052$; therefore, $5\%$ of customer’s satisfaction variable is predicted by the accuracy of services and $37.8\%$ is predicted through the linear combination of three variables of the timeliness of services, content of services and accuracy of services.

In the fourth step, the variable of the ease of use of services was entered into the regression model that the results of regression analysis showed that the effect of variable of the ease of use of services on customer’s satisfaction is positive and significant ($p<0.001$, $R^2=0.672$, $df=4$, $F=75.13$); the coefficient of determination of the ease of use of the services variable is $0.453$, i.e., ($R^2=0.453$), and its growth rate after entering the second variable is $0.052$; therefore, $5\%$ of customer’s satisfaction variable is predicted by the variable of ease of use of services and $45.3\%$ is predicted through the linear combination of four variables of the timeliness of services, content of services, accuracy of services and the ease of use of services.

In the fifth step, the variable of the format of services was entered into the regression model that the results of regression analysis showed that the effect of variable of the format of services on customer’s satisfaction is positive and significant ($p<0.001$, $R^2=0.695$, $df=5$, $F=67.75$), Thus, the coefficient of determination of the format of the services variable is $0.483$, i.e., ($R^2=0.483$), and the rate of its development after the arrival of the second variable is $0.023$; therefore, $2\%$ of customer’s satisfaction variable is predicted by the variable of the format of services and $48.3\%$ is predicted through the linear combination of five variables of the timeliness of services, content of services, the accuracy of services, the ease of use of services and the format of services.

In general, according to these results, the variables of the timeliness of the provided services, the content of services, the accuracy of services, the ease of use of services and the format of services can explain 48.3% of the variance in customer satisfaction.
Table 2 - Summary of regression model, analysis of variance, regression statistical characteristics of timeliness of provided services, content of services, accuracy of services, ease of use of services, the format of services and customer’s satisfaction

<table>
<thead>
<tr>
<th>Index</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>First step: timeliness of provided services, ((R^2=0.212))</td>
<td>54.717</td>
<td>.998</td>
<td>.461</td>
<td>25.051</td>
<td>.000</td>
</tr>
<tr>
<td>Second step: timeliness of provided services, content of services, ((R^2=0.317))</td>
<td>43.232</td>
<td>1.006</td>
<td>.464</td>
<td>16.946</td>
<td>.000</td>
</tr>
<tr>
<td>Third step: timeliness of provided services, content of services, accuracy of services, ((R^2=0.378))</td>
<td>30.325</td>
<td>1.019</td>
<td>.470</td>
<td>11.372</td>
<td>.000</td>
</tr>
<tr>
<td>Fourth step: timeliness of provided services, content of services, accuracy of services, ease of use of services, ((R^2=0.453))</td>
<td>22.297</td>
<td>1.022</td>
<td>.472</td>
<td>12.146</td>
<td>.000</td>
</tr>
<tr>
<td>Fifth step: timeliness of provided services, content of services, accuracy of services, ease of use of services, the format of services, ((R^2=0.483))</td>
<td>14.185</td>
<td>1.011</td>
<td>.467</td>
<td>12.341</td>
<td>.000</td>
</tr>
</tbody>
</table>

10. Discussion and conclusion

According to the obtained statistical results and data analysis, we conclude that the main hypothesis of the research, that is, the effect of electronic services on customers’ satisfaction, is valid. These results are consistent with the results of researches conducted in this field. Because, by studying the background, actions and experiences of the pioneer and developed countries in banking industry, it is specified that the movement toward electronic banking and use of advanced and modern equipments have been able to be effective in absorption, maintenance and satisfaction of customers of bank directly and inevitably. The mentioned results have shown that the sub-hypotheses of the research are also valid with various degrees of effectiveness. According to the results, there are significant differences between the five hypotheses. That is to say, the content of provided services, the accuracy of services, the format of services, the ease of use of the services, and the timeliness of services have the positive influences on customers’ satisfaction.

The study of the first sub-hypothesis about the impact of the content of provided services on customers’ satisfaction showed that the content of provided services with correlation of 31% has a positive effect on customers’ satisfaction. That is despite the extensive propagation and even establishment of modern systems of electronic banking, we should more consider the content of provided services. In the case of failure to fulfill the content of the bank’s services based on predetermined needs of customers and to achieve in the short, medium and long term objectives, we should not expect the attraction of the customers’ satisfaction and admiration of the bank’s services by them.
The study of the second sub-hypothesis about the impact of the accuracy of provided services on customers’ satisfaction showed that the accuracy of services with correlation of 26% has a positive effect on customers’ satisfaction. In the past, the traditional systems, in spite of attempts to do accuracy in receiving, paying, calculating, etc., the mistakes were observed frequently, and it provided the customers’ dissatisfaction. Now, by establishing electronic banking systems, this difficulty has been reduced largely and the banks can be sure about the accuracy of entering and processing of costumers’ financial information and attract the costumers’ satisfaction in this regard.

The study of third sub-hypothesis about the impact of the format of provided services on customers’ satisfaction showed that the format of provided services with correlation of 22% has a positive effect on customers’ satisfaction. Therefore, providing new services in its various forms is an issue that causes customers’ satisfaction.

The study of fourth sub-hypothesis about the impact of the ease of use of provided services on customers’ satisfaction showed that the ease of use of provided services with correlation of 25% is effective in the customers’ satisfaction. Therefore, for the customers (in general), it is very important that they can use the bank’s services easily. Thus, it is obvious that the establishment of the new online banking systems in an easy to use format can play a role in attracting customers and their satisfaction.

The study of fifth sub-hypothesis regarding the effect of the timeliness of the provided services on the customers’ satisfaction showed that the timeliness of the provided services with correlation of 46% is effective in the customers’ satisfaction. Because the services that are provided grandiloquently and garishly with huge and modern propagations not timely not only can they satisfy the costumers, but also cause their dissatisfaction and avoidance of an inefficient system that is not able to eliminate their problems about time. In the lack of timeliness of provided services, they do not any difference with traditional banking systems, because costumers expect to do their banking affairs and problems widely using modern equipments of banking systems during day and night.

Overall, the combination of variables of the timeliness of the provided services, the content of services, the accuracy of services, the ease of use of services and the format of services can better explain the variance of customers’ satisfaction.

Based on the priority according to the table that was obtained from correlation coefficient, first the timeliness of the provided services has the most impact on the satisfaction of key customers, and then the content of services, the accuracy of services, the ease of use of services and the format of services are effective in customers’ satisfaction respectively.

Since, the environment of the research was restricted and many other factors can affect the customers’ satisfaction of electronic banking services; researchers are recommended to study and reduplicate the research in other environment and with other effective variables to obtain valid and generalizable results.

References


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