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Study the Adoption of Electronic Banking Levels on the basis of Technology Acceptance Model (TAM)

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ABSTRACT

Nowadays, the importance of electronic is ever increasing and the main reason for this should be considered as increasing development of technologies and competition. What is important in electronic banking, is its adoption by customers. This research is dealing with study of electronic banking adoption according to Technology Acceptance Model (TAM) presented by Davis. For this purpose, a questionnaires is distributed between 400 customers and its results is analyzed through Pearson correlation test. The obtained results indicate a significant relationship between customers easy use of electronic banking and perceived usefulness of their attitude toward this technology and its acceptance.
KEY WORDS: electronic banking, electronic banking adoption, technology acceptance

INTRODUCTION

Electronic banking industry is a business in which modern communication medium are used and supply its customer with services and grants them added value and welfare. This interaction between banks and customers is referred to as Electronic banking .The rapid growth of internet development and electronic business lead the banks and financial sectors to encourage their customers toward make use of electronic banking [21]. Availability of a technology and its innovation in itself shouldn't be considered as a warrant for its success and ultimate customers adoption. But what is important in this regard is acceptance of this technology and especially electronic banking technology.

RESEARCH LITERATURE

Technology Acceptance Model(TAM)

Among different models that are presented regarding to innovation acceptance, TAM model by Divis(1989) that is derived from theory of reasoned action (TRA) could gain a great acceptability from information system researchers. In fact ,Technology Acceptance Model is put under repeated examination and evaluation by these researchers and they get to the result that TAM is reliable for prediction of modern system acceptance in different companies[2,5,8,9,16,19,21]. Maybe the main reason of TAM popularity is that this model is of great potential in supporting empirical researches[4]. In addition, as the TRA is a comprehensive theory of human behaviors, so Technology Acceptance Model(TAM) is special to information system application[17].

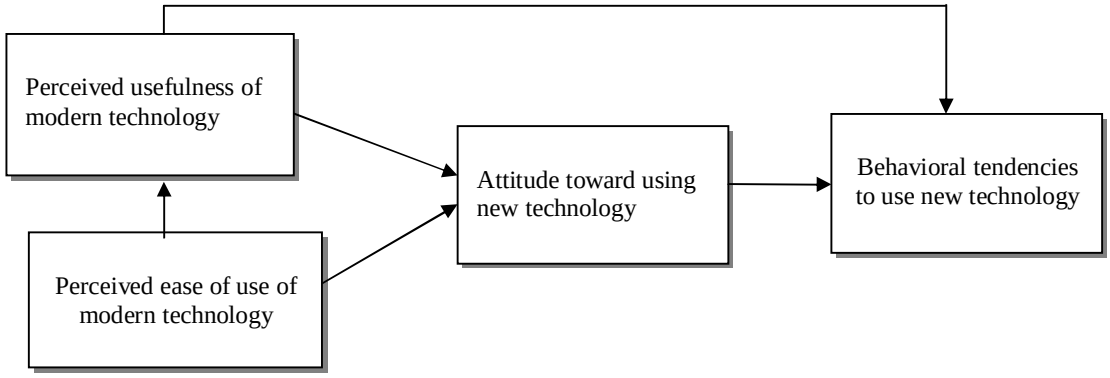

Diagram1: Technology Acceptance Model (TAM).Davis1989

TAM is on the basis of this assumption that modern information systems is gain acceptance by a user through their tendency to use these systems; that is their desire to use these modern systems in turn

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is defined through their attitude toward these kind of systems. This model evaluates users attitude toward technologies through two factors of perceived usefulness of system and also perceived ease of use of system [21,17,10].

Perceived usefulness of a system referred to individuals opinion regarding to this issue ,that make use of a significant system could lead to improve individual performance in that field. As perceived ease of use of modern technologies is related to individuals believe regarding to this matter that using a new system doesn't require hard efforts [10]. In the following figure, Technology Acceptance Model (TAM) and how the mentioned factors affect the users tendency to use modern technology is shown.

As it is mentioned according to this model ,users behavioral tendency to accept and make use of a new technology as electronic banking is influenced by their attitude toward these type of modern systems. In addition, perceived usefulness of a new technology also has a direct influence on their behavioral tendencies and new technology acceptance. User attitude is influenced by the two factors of perceived usefulness and perceived usefulness of modern systems and will evaluate according to these two factors. Finally, according to TAM, perceived easy use of technology could have a direct effect on the it's perceived usefulness. For example, when users could perceive using electronic banking instruments easily and without great effort, in result they could perceive more usefulness of this type of banking and show more tendency for its acceptance.

Electronic Banking Levels

According to the main scope and situation of electronic transfer and also information technology, so banking could be divided into two levels of 1) consumers electronic banking (on customer level)[4] and Interbank electronic banking [5].Since the focus of this research is on the electronic banking on the level of customers, so we will deal with a brief definition for each of these dimensions:

-Bank Cards: All these cards are as Asset Cards[6] and with depositing resource in the Cards correspondent account, this card could be utilized [18].

-Automatic Teller Machine(ATM): These machines carried out such operations as deposit, money transfer from an account into the other, paying money into credit card, print expense statement, pay telephone ,water or gas bill and so on [12,1].

-Electronic Fund Transfer Point of Sales: With using different type of secure identity verification, customers could transfer money from their accounts in a bank or monetary institution to the buyer without any time and space limitation [3]

-Telephone Banking: Through installing. electronic boards of telephone banks on central computers of internal networks and centralized networks ,bank make the automatic response available for customers. Users could enjoy of some facilities with having a telephone device equipped to tone system and get telephone bank code correspondent to their accounts and then communicating with telephone bank. These facilities are as getting information about their account statement and stock account ,pay the bills, cash management, transfer money to other accounts and so on [11].

-Internet Banking: To simply put it, Internet banking is considered as those bank services that are based on the internet without any time and space limitation.[9].Internet banking make it possible for the customers to be provided with extended monetary services with more efficiency and without any need to physical branch instruments and with less expense [7,20].

-Mobile Banking : One of the main advantages of this method comparing to Internet banking is that the communication device with bank(mobile) is accompanied with customers and could enjoy of the least facilities. Another reason is an increased growth of using mobile among users. Today, Mobile based banking make the communication between banking system and mobile possible and with utilizing WAP[11] and SMS[12] protocols ,customers could manage their bank accounts, transfer money ,pay the bill and review account turnover through mobile set [13].

-Home banking: This type of banking ,make it possible to perform bank affairs as get account information and bank services through PCs ,modems ,phone line ,accounting or bank application software [14].

According to research literature when adopting a new technology such as electronic banking , its necessary customers use a unit model and pattern. So, on the basis of Davis model of technology acceptance ,the main question raised here is whether there is any relation between new technology acceptance and accepting levels of electronic banking.

RESEARCH METHOD

According to the purpose ,type of subject and also structure of its hypotheses, so the nature of current research is of application-descriptive .The purpose of this research is to describe understudied phenomenon and conditions [6].

The research method is classified as correlation research method .So, Pearson's correlation coefficient test is used. According to the nature, purposes and understudied variables, so the research hypotheses are formulated as following:

Hypothesis1: There is a relationship between perceived easy use of electronic banking levels and its perceived usefulness.

Hypothesis 2: There is a relationship between perceived easy use of electronic banking levels and customers attitude toward it.

Hypothesis 3: There is a relationship between perceived easy use of electronic banking levels and its acceptance by customers.

Hypothesis 4: There is a relationship between perceived usefulness of electronic banking levels and customers attitude toward using it.

Hypothesis 5: There is a relationship between perceived usefulness of electronic banking levels and its acceptance by customers.

Hypothesis 6: There is a relationship between customers attitude toward using electronic levels and its acceptance.

According to the above hypotheses, the following picture is presented as a conceptual model to relate research variables.

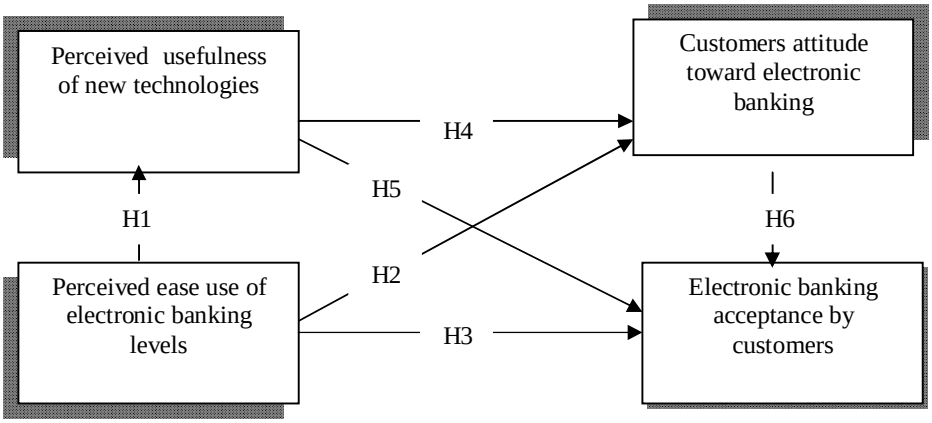

Diagram2: Research conceptual model

According to the research hypotheses, issues and statistic population, so a standard questionnaire in a sequential evaluation level and as Likert scale of five items are used to gather the required information and data for testing hypotheses. The research resource and instruments are confirmed by experts. Expetrs assersion, explorative and confirmative factor analysis(EFA),and KMO index are used to evaluate internal validity(validity); SPSS software and Cronbach's Coefficient Alpha are used to evaluate external validity(reliability).Calculated factor charges for the questionnaire confirmed its high validity. The calculated value for KMO index is 0.903.This is indicated that the present correlations are suitable for factor analysis. The Cronbach's Coefficient Alpha is used to evaluate reliability of the questionnaire including 25 items. Its value calculated as 0.846.The research statistic population includes all customers who use at least 4 choices of electronic banking services. According to the infinity of the population, so Cocheran formula is used to obtain the definite or known sample size. The obtained sample size is 384.Totally,400 questionnaires are distributed ,but finally only 380 questionnaires are put under correct analysis.

DATA ANALYSIS

A. Description of statistic population demographic

The participants are included of 35.8% women and 64.2% men. Their age levels are 6.2% bellow 21year,43.3% between 21-30 years,36.9% between 31-40 and 13.6% are above 41 years. According to education level of these participants ,the most frequency of responses are among those respondents with BA degree as 41%,and for other educational courses as under diploma 3.2%,diploma 28.8% , associate degree 16.7%, and higher than BA 10.3%

B. Test of research hypotheses and conceptual model

According to the considered hypotheses in this research, the obtained data is analyzed through questionnaire and pearson's correlation coefficient.

As you see in table 1,according to a significant level of <0.05 for all tests, so the research hypotheses are put under ultimate confirmation. The obtained value of correlation coefficient for each test indicated a strong relationship between dependent and independent variables.

Table(1): Results Of testing Pearson correlation coefficient in hypotheses

	sig	correlation coefficient	Result
Hypothesis1	0.000	0.728	Confirmed
Hypothesis2	0.000	0.884	Confirmed
Hypothesis3	0.001	0.847	Confirmed
Hypothesis4	0.01	0.849	Confirmed
Hypothesis5	0.000	0.891	Confirmed
Hypothesis6	0.005	0.876	Confirmed

According to the obtained value of determination coefficient ,so the prediction of dependent variable through independent variable is calculated, In analyzing the following figure, the values of determination coefficients are presented.

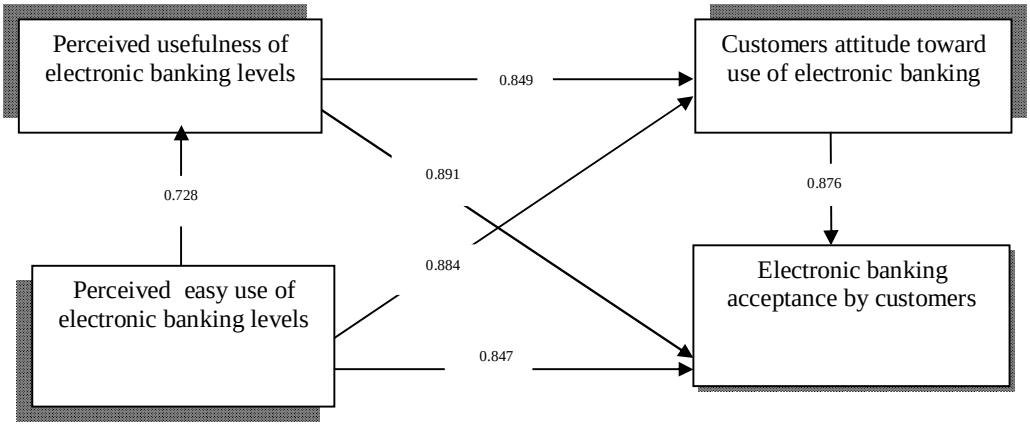

Figure 3: Diagram of determination coefficient predicting dependent variable through independent variable

Conclusion

According to the newly established technology of electronic banking in Iran and also its importance and the effective factors for its acceptance by customers, so this research is seeking to study these factors through Technology Acceptance Model(TAM).In this research regarding to the listed results of hypotheses 1-3 in the table ,it is indicated that easy use of the new technology of electronic banking is related to its perceived usefulness ,customers attitude toward electronic banking, and finally its acceptance. These results indicated that as customer have more perception regarding to the simplicity and rapidity of performing monetary affairs comparing to traditional banking, so they will more realize the advantages and usefulness of electronic banking and accept it. Hypotheses 4 and 5 are dealing with the point of relation between perceived usefulness of electronic banking and customers attitude toward it and ultimate acceptance.

This means as customers are in such believe that using electronic banking systems don't require any hard thought ,and using its services instruments is easy for performing bank operation and also learning the method of using this modern technology is easy, this will lead to more suitable attitude among customers and their tendency to accepting electronic banking. Finally, according to the obtained results of hypothesis 6a relationship between customers attitude toward electronic banking and its acceptance is confirmed. In other words, more positive customers attitude toward this matte in an indication of less resistance to its acceptance.

According to the obtained results, it is suggested that banking services be so varies to increase the customers perceived usefulness and add newer choices to their services. In Internet and Mobile Banking field, more competition advantages could be gained and utilize this instrument as a communication bridge for gaining success and electronic banking acceptance. It could use of encouraging concession that are considered for customers. In perceived easy use of the new technology field ,software application and scientific aspect should be considered and such instrument are incorporated that will lead to performing monetary affairs more easily for users of electronic banking systems. It is also suggested the current research is carried out in more comprehensive and comparative way. The research entire purpose is studied through other behavioral models and their results are compared with each other.

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