

RELATIVE IMPORTANCE OF TECHNOLOGY ACCEPTANCE DIMENSIONS IN USING OF ELECTRONIC BANKING IN MESHKIN CITY'S PUBLIC BANKS

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ABSTRACT

The main objective of this research is relationship between technology acceptance dimensions and use of electronic banking. Statistical population consists of all the customers of public bank of Meshkin city. According to sample volume method, 384 persons have been selected. The environment research consists of the Melli, Maskan and Sepah bank in Meshkin city. In order to collect data, a 31 items questionnaire was prepared and distributed among the sample members. Eventually, 317 filled-out questionnaires were collected. In order to enhance the questionnaire validity researchers consulted with professional faculty members and its reliability confirmed based on Cronbach's alpha coefficient. To analysis of data we have used descriptive statistics i.e. frequencies, valid percent of demographic characteristics. Spearman correlation test and the relative importance were also used to analyze of hypotheses. Findings show that technology acceptance dimensions are significantly related with use of electronic banking. Also was found among technology acceptance dimensions, Trial ability and Usefulness perceived have the highest relative weight.

Key words: technology acceptance, customer, E-banking, Relative importance

INTRODUCTION

For many people, electronic banking means 24-hour access to cash through an automated teller machine (ATM) or Direct Deposit of paychecks into checking or savings accounts. But electronic banking involves many different types of transactions, rights, responsibilities — and sometimes, fees. Do your research. You may find some electronic banking services more practical for your lifestyle than others [1].

In its very basic form, e-banking can mean the provision of information about a bank and its services via a home page on the World Wide Web (WWW). More sophisticated e-banking services provide customer access to accounts, the ability to move their money between different accounts, and making payments or applying for loans via e-Channels. The term e-banking will be used in this book to describe the latter type of provision of services by an organization to its customers. Such customers may be either an individual or another business [2].

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To understand the electronic distribution of goods and services, the work of Rayport and Sviokla (1994; 1995) is a good starting point. They highlight the differences between the physical market place and the virtual market place, which they describe as an information-defined arena. In the context of e-banking, electronic delivery of services means a customer conducting transactions using online electronic channels such as the Internet? Many banks and other organizations are eager to use this channel to deliver their services because of its relatively lower delivery cost, higher sales and potential for offering greater convenience for customers. But this medium offers many more benefits, which will be discussed in the next section. A large number of organizations from within and outside the financial sector are currently offering e-banking which include delivering services using Wireless Application Protocol (WAP) phones and Interactive Television (iTV).

Many people see the development of e-Banking as a revolutionary development, but, broadly speaking, e-banking could be seen as another step in banking evolution. Just like ATMs, it gives consumers another medium for conducting their banking. The fears that this channel will completely replace existing channels may not be realistic, and experience so far shows that the future is a mixture of “clicks (e-banking) and mortar (branches)”. Although startup costs for an internet banking channel can be high, it can quickly become profitable once a critical mass is achieved [4].

It seems accepting the use e-banking depend upon new technology acceptance. The contribution of new technology to growth can only be realized when and if the new technology is widely diffused and used. Diffusion itself results from a series of individual decisions to begin using the new technology, decisions which are often the result of a comparison of the uncertain benefits of the new invention with the uncertain costs of adopting it [5].

If a new technology is imperfect in its early stage, then the subsequent rate of improvement is an important determinant of adoption of the technology. This results from the fact that the efficiency gain from the new technology is much larger during its enhancement stage than during the initial stage. In some cases, improvement in the technology includes the development of machines to manufacture the new innovation [6]

The theoretical framework of this study was based on the Technology Acceptance Model (TAM), Innovation and Diffusion Theory (IDT), and other extended models which are modifications of these two models. The objective of the TAM is to provide an explanation for the determinants of computer acceptance across a broad range of end-user computing technologies and user populations. TAM consists of perceived ease of use (PEU), perceived usefulness (PU), attitude toward usage (ATU), behavioral intention to use (BI), and actual system use (AU). Davis (1989) defined perceived usefulness as the degree to which a person believes that using a particular system will enhance his or her job performance and perceived ease of use as the degree to which a person believes that using a particular system will involve minimal effort. The amount of effort that is required to use an innovation will have an effect on the adopter's sense of self efficacy with regard to using the innovation. If the individual finds that he or she can comprehend fairly easily how to use an innovation, he or she is more likely to feel confident about using the innovation effectively [7].

Technology Acceptance dimensions:

1- Perceived Ease of Use

According to Davis [8], perceived ease of use was defined as the extent to which an individual thinks that it would be effortless to use a particular system. Perceived ease of use refers to the user's perception of the level of easiness to use the system [9]. The harder the system execution

is, the less likely it is that the system is used as extensively as would be desirable or that it would have started being used in general. Venkatesh and Davis [10] found that perceived ease of use had positive direct effect on user acceptance of information system.

2- Perceived Usefulness

Perceived usefulness is defined as the degree to which a person believes that using a particular system would enhance his/her job performance [8]. The Technology Acceptance Model (TAM) was introduced by Davis in year 1989 [8].

According to the TAM, perceived usefulness is a significant factor that affects user acceptance in information system research [8]. Several researchers have provided evidence of significant effect of perceived usefulness on information system usage (Davis [8]; Pikkarainen, Pikkarainen, Karjaluoto and Pahlila [11]; Wang, Wang, Lin and Tang [12]. Sudarraj and Wu [13] validated that perceived usefulness was a very important factor for determining online banking usage in Canada. Chau and Lai [14] and Eriksson, Kerem and Nilsson [15] also found similar results. Therefore, customers would normally accept online banking systems if they believe the system to be helpful.

3- Relative Advantage

Tornatzky and Klein [16] found relative advantage to be an important factor in determining adoption of innovations. In general, perceived relative advantage of an innovation is positively related to its rate of adoption [17]. For instance, Internet banking services offer convenience as well as advantages to the clients as they are able to access bank account from anywhere and whenever they want. Moreover, these kinds of services ease clients' financial management as they can access their bank account information easily. In view of the advantages that Internet banking services offer, it would thus be expected that individuals who perceive Internet banking as advantages would be likely to adopt the service as well [18].

4- Self-Efficacy

Self-efficacy refers to how confident a person is in oneself [9]. Vainio [9] stated that, some people may be very confident in them just because that is their nature, whereas others are those who are competent in something and should feel confident in doing it, but do not. Self-efficacy of someone could be affected with his/her learning ability including other factors. It is, therefore, suggested that the more the user believes on his ability to use the system, the more likely it is that the user will start using the said system in his/her work.

5- Perceived Credibility

According to Wang, Wang, Lin and Tang [12], perceived credibility consists of two elements: privacy and security. Security refers to the protection of information from unsanctioned intrusions or outflows. A common and widely recognized obstacle to electronic commerce adoption has been the lack of security and privacy over the Internet [19][20][21]. Wang, Wang, Lin and Tang [12] found that perceived credibility had a significant positive effect on intentions to adopt. In addition, Ramayah and Ling [22] found that Internet banking users were very concerned about security and majority of them were using Internet banking for accounts enquiry only due to the credibility concern. Suganthi, Balachandher and Balachandran [3], Daniel [23] and O' Connel [24] found that security concern was important in affecting the acceptance and adoption of new technology or innovation.

6- Trialability

Rogers [17], Agarwal and Prasad [25] stated that potential adopters of new technology, who are allowed to experiment with it, would feel comfortable with it and thus be more likely to adopt it. In addition, according to Tan and Teo [18], if customers were given the chance to try the

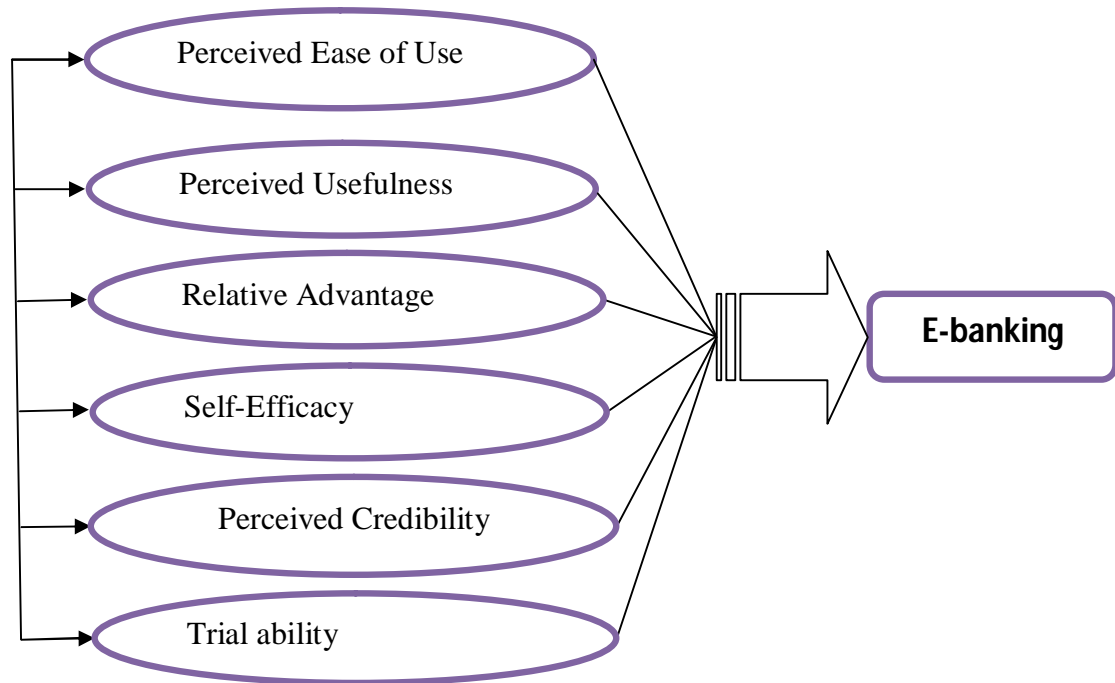
innovation, it would minimize certain unknown fears, especially when customers found that mistakes could be rectified and thus providing a predictable situation.

CONCEPTUAL FRAMEWORK

Based on the conceptual framework, we identified six independent variables that are hypothesized to affect the dependent variable (E-banking). The conceptual framework is based on Technology Acceptance

These variables were analyzed in this study. E-banking would be affected by these variables either positively or negatively based. These independent variables are perceived ease of use, perceived usefulness, relative advantage, self-efficacy, perceived credibility and Trial ability. Fig. 1 shows the research framework for this paper.

Figure 1. Research framework of customers' E-banking



Based on the aforementioned, we examined the factors that influence customers to use the Internet for their banking transactions. In order to address the research issues in this paper, we review existing works on E-banking usage including research methods appropriate for this paper, and then we applied them to the context of Iran.

METHODOLOGY

In this correlation research, data has collected from 317 customers of Meshkin Shahr's public banks by two questionnaires with study of variables. Technology acceptance questionnaire have 31 item and electronic banking have 5 items. All the reliability and validity of measures has examined. Questionnaires reliability was estimated by calculating Cronbach's Alpha via SPSS software that is shown in the table 1.

Table 1. Results of questionnaires reliability

Variables	Cronbach's Alpha
Technology acceptance	0.896
electronic banking	0.801

We used Relative Importance method and Spearman Correlation to analyze the research hypothesis.

Regression analyses are typically conducted to capture people’s decision policy. However, when inter-correlation among predictors exists (as is the case in this study), regression coefficients have long been judged inadequate to indicate the relative importance of a predictor because the impact of one predictor cannot be considered when holding the other predictors constant. Currently, there are two preferred methods for determining a predictor’s relative importance: Budescu’s dominance analysis and Johnson’s (2000, 2001) relative weights. According to Johnson and LeBreton (2004), both indices take a predictor’s direct effect and its effect when combined with other predictors into account, and both yield importance weights that represent the proportionate contribution each predictor makes to R^2 . When they are used for analyzing the same data, both indices produce virtually the same results. Here, we computed Johnson’s relative weights per rater (expressed as proportions of R^2) because they are easier to compute than Budescu’s dominance analysis.

ANALYSIS AND CONCLUSION

1- Descriptive Analysis

The data gathered from questionnaires shows that, 68 percent are male and 32 are female. The responder’s degree is 2 percent PhD, 5 percent M.A, 38 percent BA, and 55 percent DA or under DA have degree. It means that the most of the employees have university degree. (Table 2)

Table2- Responders degree

Valid	Degree	Frequency	Percent
	PhD	5	2
	MA	15	5
	BA	122	38
	DA or Under DA	175	55
	Total	317	100.0

Table 3 shows customers’ age of the responders. According to table 3, from the precedence point of view about 15 percent of responders have less than 20 years’ old, and 45 percent have between 21-30, 31 percent 31-40 and finally 9 percent have more than 41 years of managing experience.

Table 3- customers’ age of the responders

Valid	Frequency	Percent
Under 20	47	15
21-30	143	45
31-40	97	31
More than 41	30	9
Total	317	100.0

Table 4 shows the amount of customer deposits according to responders. According to table 4, from the precedence point of view about 65 percent of responders have less than 170 \$, and 23 percent have between 171-700, and finally 2 percent have more than 701\$ the amount of customer deposits.

Table 4- responders' amount of customer deposits

Valid	Frequency	Percent
Under 170\$	207	65
171-700\$	105	23
More than 701\$	5	2
Total	317	100.0

2- Hypothetical Analysis

Table 5, shows that the correlation coefficients between the independent and dependent variables.

As can be seen in the table 5:

1. There is a significant relationship between perceived ease of use and E-banking with 0.48.
2. There is a significant relationship between perceived usefulness and E-banking with 0.55.
3. There is a significant relationship between relative advantage and E-banking with 0.38.
4. There is a significant relationship between self-efficacy and E-banking with 0.52.
5. There is a significant relationship between perceived credibility and E-banking with 0.48.
6. There is a significant relationship between Trial ability and E-banking with 0.747.

Table 5, correlation coefficients between the independent and dependent variables

Research Variables		E-banking	Perceived Ease of Use	Perceived Usefulness	Relative Advantage	Self-Efficacy	Perceived Credibility	Trial ability
E-banking	Spearman Correlation	1.000						
	Sig	.						
	N	317						
Perceived Ease of Use	Spearman Correlation	.48**	1.000					
	Sig	.000	.					
	N	317	317					
Perceived Usefulness	Spearman Correlation	.55 **	.76**	1.000				
	Sig	.000	.000	.				
	N	317	317	317				
Relative Advantage	Spearman Correlation	.38**	.573**	.520**	1.000			
	Sig	.000	.000	.000	.			
	N	317	317	317	317			
Self-Efficacy	Spearman Correlation	.52**	.428**	.367**	.370**	1.000		
	Sig	.000	.000	.000	.000	.000		

	N	317	317	317	317	317		
Perceived Credibility	Spearman Correlation	.47**	.417**	.42**	.338**	.373**	1.000	
	Sig	.000	.008	.000	.002	.000		
	N	317	317	317	317	317	317	
Trial ability	Spearman Correlation	.747**	.555**	.543**	.741**	.535**	.42**	1.000
	Sig	.000	.000	.002	.000	.008	.000	.000
	N	317	317	317	317	317	317	317

The results of above table shows, that there is a correlation between the independent variables and also they have significant correlation dependent variable. Therefore, in such cases, using a method such as regression to find the net effect of technology acceptance dimensions on the E-banking is not suitable.

Given the correlation between the independent variables, we have calculated the combined effects and weighted share of technology acceptance six dimensions in influencing to E-banking with used of relative importance technique.

Table 6. Technology acceptance dimensions relative importance / weight to influence E-banking with using Johnson model

Social capital dimensions	Net weight of each variable	relative weight of each variable with 100% ($R^2 \div$ Net weight of each variable)	N
Perceived Ease of Use	7%	9.3%	317
Perceived Usefulness	11%	15.3%	317
Relative Advantage	6%	8.6%	317
Self-Efficacy	9%	13.4%	317
Perceived Credibility	8%	10.6%	317
Trial ability	30%	42.9%	317
Total	$R^2 = 71\%$	100%	317

The results show that three dimensions of technology acceptance explained 71 present of E-banking users changes. Trial ability dimension has the highest priority and the Relative Advantage dimension has the lowest priority. Perceived Ease of Use dimension have 9.3 present, Perceived Usefulness dimension have 15.3 present, Relative Advantage dimension have 8.6 present, Self-Efficacy dimension have 13.4 present, Perceived Credibility dimension have 10.6 present and Trial ability dimension have 42.9 present relative weights.

The findings of research show that there is a relationship between technology acceptance dimensions and E-banking. And, also these dimensions have the most relative weight influence on E-banking in comparison other technology acceptance dimensions.

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