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The Effect of Factors Affecting Customers' Acceptance of Internet Banking Based on Their Initial Trust

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ABSTRACT

Utilization of the information technology in e-banking leads to a decrease in geographical distance and time interval between the bank and the customer. It also yields a reduction in bank service offering costs and money transfers. Therefore, it increases the competition among banks and the quality of services, and ultimately changes the bank sumptuary structure and optimizes the banking industry purpose of the present research is to extract the effective factors on the e-banking acceptance based on the customers' initial trust. After studying the empirical models and previous researches, and extracting the indices from various papers in the direction of the present research purposes, these factors were classified into several general categories, namely the perceived convenience, perceived profitability, perceived security, tendency to trust and the bank fame and reputation. The justifiability and stability of the questionnaire were confirmed using the formal justifiability and the Cronbach's Alpha coefficient, respectively. The developed questionnaire studies a sample comprised of 610 customers of Tehran city banks. Using the descriptive and inferential statistical methods in the LISREL software environment and applying the confirmatory & operative analyzing tests, the structural equations showed that there is a meaningful relationship between the pre-mentioned factors on the e-banking acceptance based on the initial trust. The findings of the present research indicate that the perceived profitability has the highest effect on the e-banking acceptance based on the customers' initial trust.

KEYWORDS: Electronic Banking, Acceptance of Internet Banking, Initial Trust.

1. INTRODUCTION

With the advent of electronic commerce and the exchange of goods and payments via the telecommunication systems, many economic and industrial sectors have been more or less affected by this promising technology. However, the influence of e-commerce has been the most evident in banking than any other industries [1]. Today, the service industry including the banking industry is rapidly changing in the world. Banks have also been affected by the development of international economy and the markets competitiveness. The internet, the main force in this environment, as a new channel for the economic exchanges has provided the organizations with new sources of income and opportunity. The exchange rate through the internet is growing day by day. The companies that do not utilize this technology will soon be eliminated from the scene of the competitive market [2]. With the development of the electronic systems such as the internet, financial institutions and banks have also been affected. The World Wide Web has completely changed the customers' expectations in terms of speed, accuracy, price and services. The geographical distance has lost its meaning. The availability, facility and rapid distribution of services create a competitive advantage for many organizations including the banks. To compete in this complex environment, banks have to provide the customers with the latest and the most compelling services they demand. In this regard, many banks around the world has begun offering electronic services because they know that their survival depends on the speed of offering services and being aware of customers' demands [3]. The present research will first identify the factors influencing the adoption rate of internet banking based on the initial trust. Then, the effect of each factor on the internet banking adoption by the customers will be studied.

2. RESEARCH LITERATURE

Over the last two decades, IT adoption has been the subject of many researches. Hence, various theories took new attitudes towards the acceptance and the use of information technology in the individual and organizational dimensions. The need to design a model to study the determinant factors of the adoption and use of computer was completely felt as a behavior in 1980. Technology Acceptance Model (TAM) was an appropriate response to this need. This model specifically explains the behavior of individuals in relation to the application of computers and various computer–based technologies. In this model, perceived usefulness and ease of use were considered as an effective factor influencing the technology adoption. In his research, Aldawani [4] studied the development stimuli, challenges and customers' expectations of the e-banking qualitatively and delineated their importance from the managers and potential bank customers perspectives. The findings of this research in Kuwait showed that the security, the presence of internet banking laws and regulations, ensuring individuals' privacy, the bank reputation and offering reliable banking services

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were the most important in the eyes of potential customers of banks. Laforet and Li [5] claimed that security is the most important factor in stimulating the use of internet banking among the users in China. In addition to security, the main obstacles to the use of this technology are risk perception, computer skills and the traditional custom of using cash in China. In their research conducted in Indonasia, Aries Susanto et al [6] revealed that factors such as the perceived privacy and the government support had the least impact on the adoption of Internet banking. On the other hand, security and the efficacy of the use had the greatest impact.

2.1. E-banking

Electronic banking is an essential tool for survival and causes a fundamental shift in the banking industry in the whole world. Today, banking services are offered to the customers without the need for their physical presence at the bank in less time and with minimal cost [6]. Schneider [7] regards the electronic banking as offering banking services through a network of public computers. The result is accuracy, speed, eliminating the costs and reducing the unnecessary and repetitive administrative operations.

2.2. Internet Banking

Now, in most countries around the world including the developed and developing ones, the considerable growth of customers choosing to receive electronic banking services forced the banking industry to boost. In addition to the new banks that offer their services to the customers merely through electronic communication, more experienced banks expand their operations along with their current activities or establishing an independent bank with an electronic method. Many banks around the world regard offering the electronic services as a tool for market development, customer service improvement, cost reduction and efficiency enhancement [8]. In fact, banks have turned to the use of Internet to distribute their traditional products in a more efficient way [9].

2.3. The Effective Factors on the Adoption of Internet Banking

Banks make large investments for the development of information systems and adopting a new technology to offer better services. Therefore, understanding the factors that lead to the adoption of these technologies is of great importance [10]. Regarding the factors influencing the adoption of Internet banking that led to the study of the articles in this area, after examining the theoretical models and previous researches and extracting the indices from the articles in line with the aim of this research, these factors were classified in a number of general categories, namely perceived ease, perceived usefulness, perceived security, tendency toward trust, bank reputation, website usability and the initial trust.

2.3.1. Perceived Ease

Perceived ease refers to the degree to which a person believes that learning and knowing how to use and work with a specific system requires little effort in terms of mental attitude [11].

2.3.2. Perceived Usefulness

Perceived usefulness refers to the degree to which a person thinks the use of a special technology promotes his performance [12]. Usefulness is understood when a new service offers more value in terms of economic benefits, comfort and satisfaction compared to the present services [13].

2.3.3. Security

From the customers perspective, the security in internet banking is the ability to protect their data against the information thieves [14]. Lack of security and concern about privacy were identified as the major obstacles to the adoption of technology [15].

2.3.4. Trust

The physical distance between the buyer and the seller as well as the distance between the buyer and the store have turned the trust into an important issue in e-commerce. According to Van [16], trust plays an important role in virtual environments where the internet consumers use computer systems to have interactions under the unpredictable conditions.

2.3.5. Tendency Toward Trust

McNight and Shervani [17] claim that tendency toward trust shows the rate of the individual's tendency to dependence on others in various situations.

2.3.6. Reputation

Eager [18] regards the reputation as the strength and power of electronic services offered by the service agency or the past actions of that institute. Reputation is considered one of the factors contributing to the adoption of internet banking.

2.3.7. The Website Usability

The provision of an attractive environment for customers leads to the attraction of customers and urging them to use the internet banking [19].

3. Conceptual Model and Research Hypotheses

The following conceptual model was designed with regard to the identified factors. This model combines models of researchers such as Davis et al. [12], Kurbit (2003), Pikarayin (2004), Laurent and Lane (2005) and Aries Susanto et al [6] who presented reference models shown in figure 1.

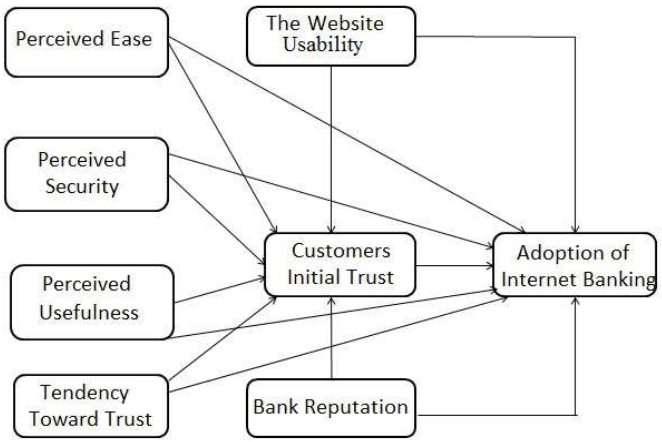


Figure 1. The Research Conceptual Model

3.1. Research Hypothesis

The following hypotheses are presented to be tested based on whatever discussed in the theoretical framework of this research:

Hypothesis 1: The website usability has a meaningful effect on the customers initial trust.
H2: The perceived usefulness has a meaningful effect on the customers initial trust.
Hypothesis 3: The perceived security has a meaningful effect on the customers initial trust.
Hypothesis 4: The perceived ease has a meaningful effect on the customers initial trust.
H5: The tendency toward trust has a meaningful effect on the customers initial trust.
H6: The bank reputation has a meaningful effect on the customers initial trust.
H7: The website usability has a meaningful effect on the adoption of internet banking.
Hypothesis 8: The perceived usefulness has a meaningful effect on the adoption of internet banking.
Hypothesis 9: The perceived security has a meaningful effect on the adoption of internet banking.
Hypothesis 10: The perceived ease has a meaningful effect on the adoption of internet banking.
Hypothesis 11: The tendency toward trust has a meaningful effect on the adoption of internet banking.
Hypothesis 12: The initial trust has a meaningful effect on the adoption of internet banking.
Hypothesis 13: The bank reputation has a meaningful effect on the adoption of internet banking.

4. RESEARCH METHODOLOGY

In this paper, the required information and data are collected using previous researches and the review of the literature. Questionnaire is used as the most important and reliable survey tool. [20]. The statistical population in this study is the clients of Tehran banks. The research variables were formulated in the form of 37 questions in the questionnaire. A total of 1050 questionnaires were distributed in the study and 840 questionnaires were returned in the end. Of these 230 questionnaires were completely removed due to the questions bias and lack of full response. After excluding flawed questionnaires, the information related to 610 questionnaires have been used for statistical analysis. The 'justifiability' is a term that refers to a goal toward which the test is formulated. The concept of justifiability answers the question of to what extent the measurement tool gauges the desired feature .The main condition under which one can formulate a justifiable questionnaire is raising the right questions using phrases with minimum ambiguity. In this study, the factor validity and formal validity were examined as data collection tools. Since the Cronbach alpha is usually a quite good indicator to measure the reliability of measurement tools and internal coordination between its elements, the reliability of the questionnaire used in the study was evaluated using the Cronbach's alpha. Using the SPSS 19 software with Cronbach Alpha, the questionnaire total validity and the set of dependent and independent variables were presented in table 2 as follows. Based on the above table, it is clear that all the selected indicators to measure the structures under study are of adequate reliability. The overall calculated alpha value equals 0.887 that is a significant amount.

4.1. Descriptive Study of the Observations

The descriptive study of the observations shows that men had a higher level of participation such that 56.6 percent of participation was that of men's. In terms of age, the highest percentage of participation (36.9 %) was the 25-34 year olds age group. In terms of education, there were more than 72% undergraduate and higher education students which reflects the high level of respondents' education. Humanities field of study has the most frequency among individuals' fields of study. Students had the highest level of participation. More than 48% of people had over 5 years of experience of using the Internet. More than 56% of people use the Internet at least 45 minutes every day. The majority of respondents use the semi-private or semi-public banks.

4.2. Inferential Analysis of the Results

To access the results of the present research, information needs to be classified, summarized and analyzed. This is done in the form of descriptive and inferential statistical methods. At the descriptive level, the population features are analyzed and described using the statistical characteristics such as frequency, percentage and median. At the inferential level, the statistics are calculated using the sample values. These statistics are further generalized to the population parameters using the estimation or statistical hypothesis testing. In inferential statistics, the following tests were used to prove or disprove the research hypotheses and finding special relationships between the population variables:

1) The Pearson correlation coefficient
2) The study of the measurement model using confirmatory factor analysis
3) Using structural equations modeling to prove or disprove the research hypotheses

4.3. A Study of the Justifiability, Reliability and Correlation Coefficients

In this section, we seek to explore the relationship between several variables. In fact, the above-mentioned hypotheses can be formulated in the following through the study of correlation coefficients among the mentioned variables:

$$\begin{cases} H_0: \rho_{Y,X_1} = 0 \\ H_1: \rho_{Y,X_1} \neq 0 \end{cases}$$

Table 2. The Pearson Correlation Coefficients and The model Justifiability Coefficients

AVE	(7)	(6)	(5)	(4)	(3)	(2)		Hidden Vaniables
0.781							1	Acceptance Of Internet Banking(INT)
0.776						1	0.35**	Initial Trust(TRU)
0.779					1	0.35**	0.37**	Perceived Privacy(PRV)
0.611				1	0.48**	0.41**	0.39**	Website Usability(WEB)
0.661			1	0.52**	0.46**	0.48**	0.38**	Relative Benefits(BEN)
0.782		1	0.36**	0.40**	0.34**	0.44**	0.30**	Perceived Security(SEC)
0.669	1	0.36**	0.40**	0.41**	0.38**	0.41**	0.31**	Perceived Ease of Use(EAS)
0.791	0.39**	0.34**	0.35**	0.29**	0.38**	0.43**	0.28**	Trust Propensity (PRO)

4.4. Validation of Research Model Using the Confirmatory Factor Analysis and Structural Equations

Before entering the hypotheses test and the research conceptual model, ensuring the accuracy of the measurement models for the exogenous and endogenous variables is necessary. This is done by first and second order factor analysis. The confirmatory factor analysis is one of the oldest statistical methods that is used to examine the relationship between latent variables (operating results) and the observed variables (questions) and represents the measurement model.

Table 3. The Results of the Research Variables Measurement Model (Loading Factors)

Result	Sig	T Statistic	Loading Factor	Indices	Hidden Variables	
Meaningful	<0.01	26.08	0.86	web1	Website Features	The Exogenous Vairbles
Meaningful	<0.01	24.89	0.83	web2		
Meaningful	<0.01	24.86	0.83	web3		
Meaningful	<0.01	25.24	0.84	web4		
Meaningful	<0.01	25.92	0.86	web5		
Meaningful	<0.01	8.39	0.34	web6		
Meaningful	<0.01	8.87	0.36	web7		
Meaningful	<0.01	25.81	0.85	ben1	Perceived Usefulness	
Meaningful	<0.01	25.63	0.85	ben2		
Meaningful	<0.01	25.39	0.84	ben3		
Meaningful	<0.01	26.48	0.87	ben4		
Meaningful	<0.01	24.49	0.82	ben5		
Meaningful	<0.01	7.69	0.31	ben6		
Meaningful	<0.01	25.23	0.84	sec1	Perceived Security	
Meaningful	<0.01	25.51	0.31	sec2		
Meaningful	<0.01	24.40	0.84	sec3		
Meaningful	<0.01	25.11	0.85	sec4		
Meaningful	<0.01	24.66	0.85	sec5		
Meaningful	<0.01	21.60	0.84	eas1	Ease of Use	
Meaningful	<0.01	26.07	0.83	eas2		

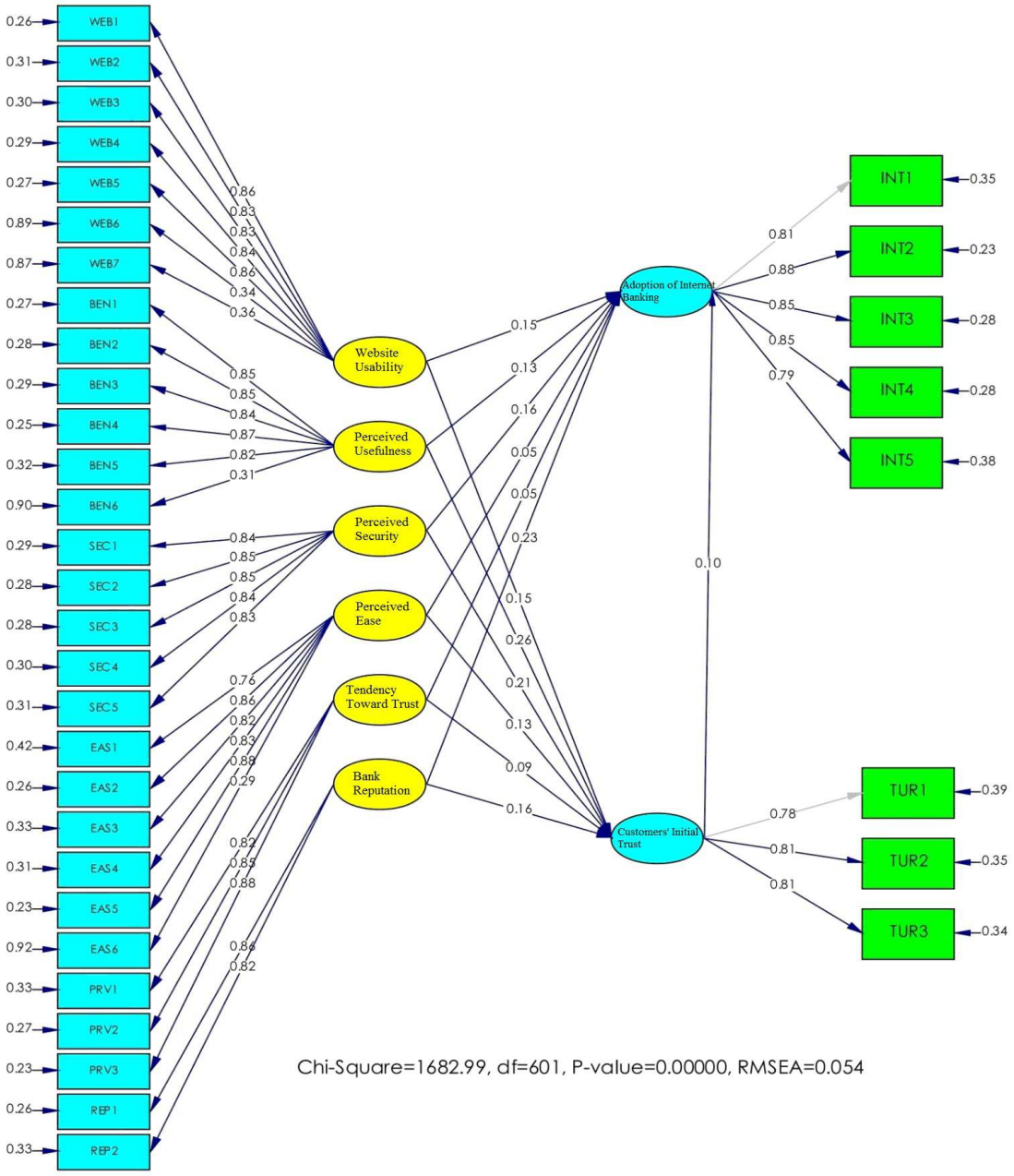
Meaningful	<0.01	24.09	0.76	eas3		
Meaningful	<0.01	24.70	0.86	eas4		
Meaningful	<0.01	26.87	0.82	eas5		
Meaningful	<0.01	7.04	0.83	eas6		
Meaningful	<0.01	23.93	0.88	prv1	Tendency Toward Trust	
Meaningful	<0.01	25.17	0.29	prv2		
Meaningful	<0.01	26.12	0.83	prv3		
Fixed Effect		-	0.85	int1	Adoption of Internet Banking	The Endogenous Variables
Meaningful	<0.01	25.30	0.88	int2		
Meaningful	<0.01	24.11	0.81	int3		
Meaningful	<0.01	24.05	0.88	int4		
Meaningful	<0.01	21.87	0.85	int5		
Fixed Effect		-	0.79	tur1	Customers' Initial Trust	
Meaningful	<0.01	19.37	0.80	tur2		
Meaningful	<0.01	19.58	0.82	tur3		
Meaningful	<0.01	21.91	0.86	rep1	Bank Reputation	The Exogenous Variables
Meaningful	<0.01	15.74	0.82	rep2		

To analyze the structure of the questionnaire and discover the constituent elements of each structure, the confirmatory factor analysis was used. The results of the confirmatory factor analysis of the research variables are summarized in the table 3. All loading factors are higher than 0.6. Also, the calculated t-values for each loading factor of each indicator with its hidden variable or structure were above 1.96. Therefore, we can show the alignment of the questions of questionnaire for the concepts measurement in this valid stage. In fact, the above results show that what has been intended by the researcher to measure using this questionnaire is achieved by this tool. Hence, the relationships between structures or hidden variables are reliable. The index with higher loading factor is of more importance compared to other factors.

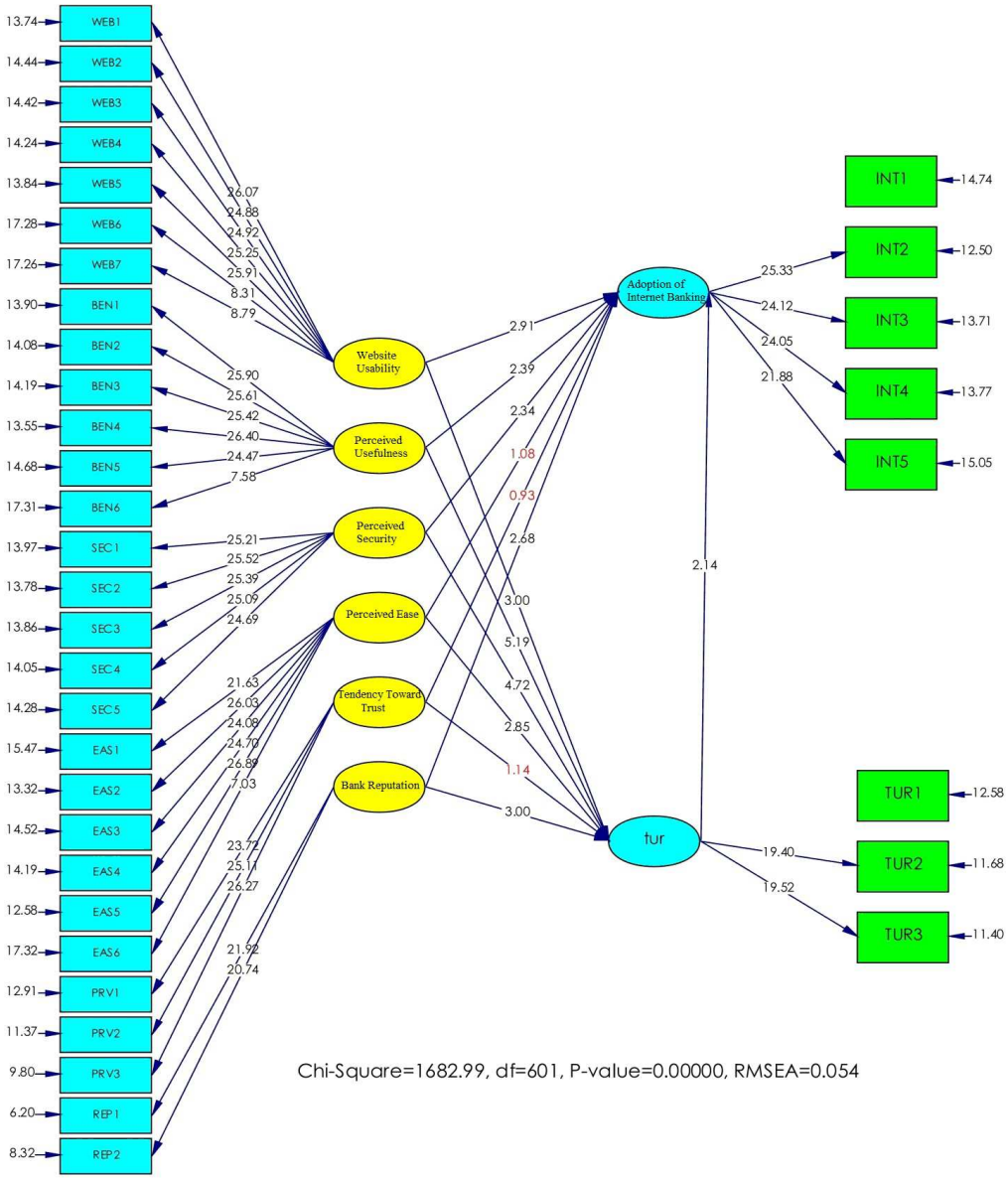
Graph 1 shows the research model in the form of the standard coefficients estimation. All variables of the model are divided into two categories, namely obvious and hidden. In this model, variables such as 'website usability', 'perceived usefulness', 'perceived security', 'ease of use', 'tendency toward trust' (independent) are exogenous and variables such as 'customers' initial trust' (intermediary) and 'adoption of internet banking' (dependent) are endogenous. In this graph, numbers or coefficients are divided into two categories. The first category is called the measurement equations that are indicative of the relationships between the obvious and hidden variables. These equations are the so-called loading factors. The second category is the structural equations that are indicative of the relationships between the hidden and hidden variables and are used to test the hypotheses. These coefficients are the so-called path coefficients.

Graph 2 shows the research model in the meaningful state of coefficients (t-value). In fact, this model examines all the measurement equations (loading factors) and structural equations using the t-test. The above results show that what has been intended by the researcher to measure using the questions of questionnaire is achieved by this tool. Therefore, the relationships between the structures or hidden variables are reliable. To show to what extent the obtained values are consistent with the realities present in the model, the fitness indices should be studied.

In general, in the structural equations model, when the goodness of fit index is above 0.8, the mode is in good condition in terms of this index (26). The reported goodness of fit index equals 93/0.



Graph 1. The Research Model in the State of the Standard Coefficients Estimation



Graph 2. The Research Model in the Meaningful State (t-Value)

4.5. Analysis of Research Hypotheses

In this research, the structural equations modeling by the LISREL software is used to answer the research hypotheses. The results of this method are as follows:

Table 5. Path Coefficients, t-Statistic and th Research Hypothesis Result

Result	Level of Meaningfulness	Coefficient of Determination	t-Statistic	Path Coefficient	Research Hypotheses	
Approved	<0.05	0.25	3	0.15	The Website Usability → Customers' Initial Trust	H1
Approved	<0.05		5.19	0.26	The Perceived Usefulness → Customers' Initial Trust	H2
Approved	<0.05		4.72	0.21	The Perceived Security → Customers' Initial Trust	H3
Approved	<0.05		2.85	0.13	The Perceived Ease → Customers' Initial Trust	H4
Rejected	>0.05		1.14	0.09	Tendency Toward Trust → Customers' Initial Trust	H5
Approved	<0.05		3	0.16	The Bank Reputation → Customers' Initial Trust	H6
Approved	<0.05	0.41	2.91	0.15	Website Usability → Adoption of Internet Banking	H7
Approved	<0.05		2.39	0.13	The Perceived Usefulness → Adoption of Internet Banking	H8
Approved	<0.05		2.34	0.16	The Perceived Security → Adoption of Internet Banking	H9
Rejected	>0.05		1.08	0.05	The Perceived Ease → Adoption of Internet Banking	H10
Rejected	>0.05		1.93	0.05	Tendency Toward Trust → Adoption of Internet Banking	H11
Approved	<0.05		2.14	0.10	Customers' Initial Trust → Adoption of Internet Banking	H12
Approved	<0.05		2.68	0.23	Bank Reputation → Adoption of Internet Banking	H13

|t|>1.96 is significant at P<0.05, |t|>2.58 is significant at P<0.01

After conducting statistical analyses on the research data and studying the findings of the research hypotheses, the research model was obtained as follows which is shown in Figure 2.

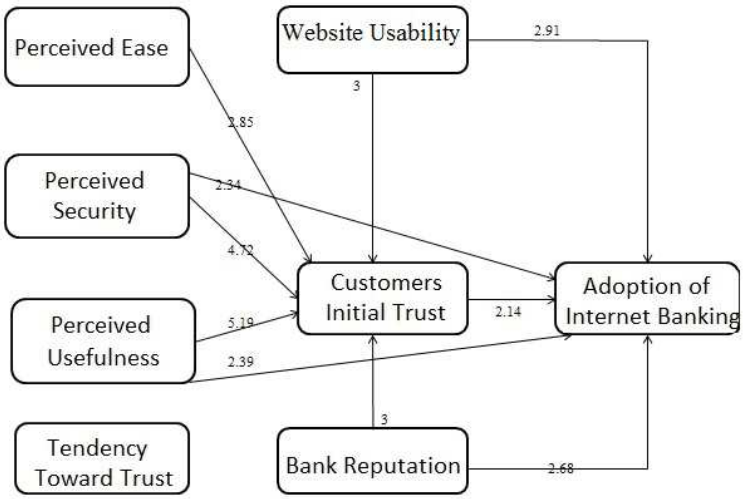


Figure 2. The Research Confirmed Model

5. CONCLUSION

The research data analysis shows that in the first phase, six variables, namely 'perceived ease', 'website usability', 'perceived security', 'perceived usefulness', 'bank reputation' and 'tendency toward trust' could altogether explain 75% of the changes in the customers initial trust. Regarding the path coefficient value, the contribution of these factors in influencing the customers initial trust can be rated. Based on this, the 'perceived usefulness' variable had the greatest effect and the 'tendency toward trust' variable the least. In the second phase, seven variables, namely 'perceived ease', 'website usability', 'perceived security', 'perceived usefulness', 'tendency toward trust', 'customers initial trust' and 'bank reputation' could altogether explain 41% of the changes in the adoption of internet banking. Regarding the path coefficient, the contribution of these factors in the adoption of internet banking can be rated. Based on this, the 'bank reputation' variable had the greatest effect and the 'tendency toward trust' and 'perceived ease' variables the least.

According to the results, it was concluded that the 'usefulness' and the 'bank reputation' were the most important factors in the customers adoption of internet banking. Another main factor influencing the adoption of internet banking is the website usability. To visit and use a website, one needs to know how to open and ease into it. Banks can design the internet banking website in such a way that it opens quickly and easily provides the customers with the information they need. The quality of web design is also effective on the attraction of new customers. Basically, attractive and high-quality websites make the customers stop and stimulate them to see and explore more. One of the problems that the internet banking faces on its way toward development is the major decline in public trust in the ability of the internet bank in fulfilling banking duties. Therefore, the system can take measures such as the use of mass media to inform customers of the services and security measures for Internet banking, paving the way in terms of cultural measures to expand the use of modern internet banking services and building trust in this category of banking services using the appropriate advertising, taking advantage of an operating system with high security level, attracting and retaining quality experts and IT professionals. In the next step, to improve security, we need to consider a mechanism for monitoring the bank computer system so as to inspect the electronic bank by the inspection authorities similar to the traditional way of bank branches inspection. Also, everyday free access to the internet in different hours with the purpose of checking the banking account balance online is effective on the adoption of internet banking. Since the internet banking has been named the 'green banking', through encouraging customers to use this type of banking, we can reduce fuel consumption, traffic and environmental pollution.

REFERENCES

1. Emarketer, (2000). The check is in cyberspace, available at http://www.emarketer.com/ estats/081699_data.html
2. Fraser,J.Fraser.,N.,Mcdonald.F. (2000). The strategic challenge of electronic commerce, supply chain management: an international journal, Vol5 nol,pp7-14
3. Ernst & Young, (1999), E-commerce: customer relationship management, special report technology in financial servies,WWW.e&y.com/report.
4. Aldawani, A. M. (2001). Online banking: a field study of drivers, development challenges, and expectations. International Journal of Information Management, 21, 213–225.

5. Laforet, S. & Li, X. (2006) .Consumers' attitudes towards online and mobile banking in China International Journal of Bank Marketing.442-424 24 ,
6. Aries Susanto, Hwansoo Lee, Hangjung Zo and Andrew P. Ciganek, (2013) User acceptance of Internet banking in Indonesia, Information Development published online 30 January,PP1-14.
7. Schneider, G (2006). Business strategies. Andy Pickering, Boston. Thomson Course Technology
8. Dimitrios Maditinos, Chrisostomos Grigoriadis (2009),"Internet Banking user acceptance: Evidence Greece and Bulgaria", 5th HSSS Conference, Democritus University of Thrace, Xanthi, Greece, 24-27.
9. Liao,Sh.,Pushao,Y.,Wang,h.,Chen,A,(1999), The adoption of virtual banking :an 25Empirical study jnternational journal of Information Management, 19,63-74.
10. Money, W.,Turner., A.,(2004).Application of the Technology Acceptance Model to a knowledge management system ,Proceedings of 36 th Hawaii international Conference System Sciences,pp32-53
11. Wang, Y. S., Wang, Y. M., Lin, H. H., & Tang, T. I. (2003). Determinants of user acceptance of internet banking: An empirical research. International Journal of Bank Marketing, 14(5), 501-519
12. Davis, F.D., Bagozzi, R.P., Warshow P.R., (1989),"user acceptance of computer technology: A comparison of two theoretical models", Management Science,35, 8, 982-113.
13. Rogers E (1995) Diffusion of Innovations. New York: FreePress
14. Hua G.(2009), An experimental investigation of online banking adoption in China. Journal of Internet Banking and Commerce; 14(1): 1-12.
15. Eriksson, K., Kerem, K. and Nilsson, D., (2008). "The adoption of commercial innovations in the former Central and Eastern European markets", International Journal of Bank Marketing, Vol. 26, No. 3, pp. 154-169.
16. Wen I.(2009) Factors affecting the online travel buying decision: a review. International Journal of Contemporary Hospitality Management 2009; 21: 752- 765.
17. Mashaikhi.,A.,Farhangi.,A.,Momeni.,M.,Alidosti.,S,.(2006),. Assessment of key factors influencing the use of information technology in government agencies: the Delphi method. Quarterly .231 -, 191 Faculty of Humanities, Tarbiat Modarres University
18. Egger,F.N.(2003)"From interactions to transactions: desining the trust experience for B2electronic commerce "Phd thesis, Eindhoven university of technology
19. Vazifeh dost,.H,. Niknezhad,. R.,(2007),. Assess the impact of Internet banking on commitment, trust and attractiveness of e-banking services of Bank of New Economics, Journal of Economics and Trade, New No. 10, 11, pp. 112-130
20. Sohail, M. S. & Shanmugham, B. (2003). E-banking and customer preferences in Malaysia: An empirical investigation. Information Sciences 150, 207–217.