

A Proposed Model of Customer E-loyalty Measurement in Internet Banking

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Abstract: In recent years, Internet Banking (IB) applications are gaining popularity among retail banking customers. The long term success of these applications is however influenced by customer loyalty because it affects customers' perceptions about banks' innovative ability and customer caring intentions. This study has been developed for a proposed model of e-loyalty measurement for IB in Tejarat bank of Iran. For this purpose, after the comparative studies, both e-satisfaction and e-trust were identified as customer e-loyalty measurement model dimensions. This research is an applied field study and the method employed is descriptive and quantitative. The research sample is composed of 218 internet customers of Iranian Tejarat banks. The required data is gathered through stratified random sampling method using a researcher-made questionnaire with a 0.9406 Cronbach alpha coefficient. Also for the effectiveness of each model dimensions, it was used linear regression. The results introduced both major dimensions satisfaction with coefficient of 0.262 in both indicators of website design and customer service, and e-trust with coefficient of 0.591 in both indicators of fulfillment/ reliability and security/privacy. Finally, with emphasis on the effectiveness of these two dimensions were proposed approaches to improve the E-loyalty.

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1. Introduction

The evolutionary nature of Information technology and the vast application of internet in the last decade, has given a face lift to the banking industry in financial service distribution management (Maenpaa et al., 2008). One crucial instrument for developing E-commerce is the existence of E-Banking systems which can facilitate E-Commerce activities along with the world's fiscal and monetary systems (Durkin et al., 2008). E-banking includes conventional banking using the internet as a tool for giving bank services such as money transfer, bill payment as well as other new services like E-Payment. In today's highly competitive financial services market, it is essential that banks continue to develop their internet banking capabilities by identifying strategies to increase adoption, access, and usage of this low-cost channel (Yousafzai & Yani-de-Soriano, 2011). Most of the banks these days don't need more branches they can serve thousands of customers around the world through the internet. In order to attract customers and their satisfaction in this method, banks need to provide information security in their internet services. E-Banking supports E-Commerce applications such as immediate transactions and stock market activities through the internet (Lee, 2009) and plays an important role in electronic payments (Durkin et al., 2008). Moreover it increases customers' loyalty and satisfaction and

lowers both customers and banks costs by providing adequate information.

Besides all opportunities internet has provided, it also introduced new challenges in the field of competition to the banks and financial institutions all around the world. The internet banking services is seen as a high-risk service that contains several uncontrollable elements, any of which could lead to money and/or privacy loss (Lifen Zhao, 2010). E-Banking needs to deal with lots of problems. Some of them are the lack of technical infrastructure, culture and training, legal and judicial challenges in E-Banking, Lack of E-Customers loyalty, limited bank services, international sanctions, Managerial complications, lack of insurance for electronic payments and security issue (Abtahi and MeraatNia, 2008).

One important issue in E-Banking and E-Commerce is to maintain internet customers by increasing their E-Loyalty. Customers' loyalty is their powerful interest to the organization and directly affects the organization's profitability. Numerous studies have been done on customers' loyalty but most of them are concentrated on conventional banking. E-Loyalty however is an effective, key factor in E-banking success. Since the products offered to the customers of a bank are more or less standardized in nature, banks are feeling an increasing need to differentiate themselves from the

competitors on other criteria that can influence customer satisfaction and loyalty (Ganguli and Roy, 2011). "Floh, and Treiblmaier (2006) found that website quality and service quality of internet banks would have an effect on trust and satisfaction, which, in turn, influence customer loyalty. E-Loyalty can help customer maintenance as well as reducing the costs of attracting new customers and consequently help electronic companies and organizations' profitability". Therefore the lack of E-Loyalty is introduced as one of the important challenges in E-banking. A review on the literature can help us to recognize different dimensions of E- Loyalty.

"De Oliveira (2007) emphasized on the relationship between the quality of services and E-Loyalty in his study and introduced accessibility, user friendliness, privacy and security, Graphical interface, accountability and adequate responsiveness as effective factors in E-Loyalty". "Anderson and Srinivasan (2003) indicate that although E-Satisfaction has an impact on E-loyalty, this relationship is moderated by (a) consumers' individual level factors and (b) firms' business level factors". Among consumer level factors, convenience motivation and purchase size were found to accentuate the impact of E-Satisfaction on E-loyalty. With respect to business level factors, both trust and perceived value, as developed by the company, significantly accentuate the impact of E-satisfaction on E-loyalty. "Xue, and Liang (2005) suggested service quality, trust, switching cost and staff loyalty as the customers' E-Loyalty determining factors". "Clark (2007) has introduced core offering, demographics, the marketplace, share of wallet, elasticity level and satisfaction as the six major factors that play key roles in influencing the loyalty and the commitment of customers". According to "Devaraj et al. (2003) information content, transaction security, responsiveness, customer data recovery, visual attractions, download time, return process speed, ease of navigation, payment options and reputation are the factors which can affect E-loyalty and a business site's success".

In this study we have used the website design and customer service as the indicators of E-Satisfaction and fulfillment/ reliability and security/privacy as the indicators of E-Trust to measure customer E-loyalty for Tejarat bank of Iran. For this purpose after introducing E-Satisfaction and E-Trust and their effective indicators conceptual framework of the study is explained. Then we go through the research method including data gathering method and statistical tests. After that data analysis is done using our model and Finally we go through the concluding remarks.

2. Material and Methods

2.1 E-loyalty

According to "Oliver (1999) customers exhibit loyalty toward a brand or product when they insist on buying them despite other companies' products". So, E-loyalty is customers tendency to visit a certain business site due to the positive experiences they have had or their future expectations (Anderson and Srinivasan, 2003). When business competitions in electronic world started by just a few mouse clicks and customers became able to compare all the available options, E-Loyalty has become a concern for companies (Javad, 2009). E-Loyalty has been measured through various dimensions in different studies. In the present study E-Satisfaction and E-Trust are introduced as two effective dimensions of E-Loyalty.

2.2 E-Satisfaction

E-Satisfaction is defined as the customer's pleasant sense due to his/her positive experience with an electronic business organization. Different studies have shown that customers may need more satisfaction and can easily move toward more convenient financial institutions despite their positive experience with the current bank or financial institutions. Therefore, E-Satisfaction can influence E-Loyalty in electronic business; E-Satisfaction in turn is influenced by website design and customer service (Kim, 2005).

Based on an in-depth review of relevant literature, we can say first that satisfaction in terms of previous interactions is considered a key antecedent of customer loyalty about an online financial services provider (Casaló et al., 2008).

Website design refers to all interactive components of the website with the customer such as user navigation, providing adequate information and customer order processes. Information content, information nature and the type of graphic are the other components of this indicator which can positively affect E-Satisfaction (Kim, 2005). Web site design quality showed positive direct effects on pleasure, arousal, and perceived information quality and on satisfaction (Young and Hyunjo, 2012). Furthermore measuring internet banking service' user satisfaction through Technology Acceptance Model (TAM) shows that factors like website user friendliness, ease of access, and adequate information can also influence E-Satisfaction (Pikkarainen et al., 2004).

Customer service refers to responding to customers in the minimum time possible. A survey including 100 American retailers' websites shows that lack of immediate response specifically for e-mails is a prevalent phenomenon amongst online product sellers (Kim, 2005). Overall customer service satisfaction and technical customer service

satisfaction dimensions fully mediated the relationships between customer service skills and customer loyalty (Amjad et al., 2011). So customer service is an effective indicator on E-Satisfaction.

2.3 E-Trust

E-Trust is defined as the degree of customer security in online transactions (Ribbink et al., 2004). According to “Byoungho et al. (2008) E-Trust is the customers’ belief in an organization’s word which can assure them (i.e. credibility) that the organization would not misuse customers’ vulnerable situation”. Doing business through the internet always involves risk, the most important cause of which is the lack of trust between the organization and the customer.

This happens because they are not physically present at marketplace. In every mutual relationship trust is the first things’ first. As matter of fact, if an organization wants to succeed in providing electronic services, it needs to build trust in its relationship with customers in the first place. The lack of trust can be overcome with a better understanding of factors that can boost customers’ trust for e-banking (Yap et al., 2010). E-Trust itself is affected by the two indicators: fulfillment/ reliability and security/ privacy (Kim, 2005).

Fulfillment/ reliability is defined as receiving appropriate service in a specific time period and providing accurate information for inside website services in a way that fulfills customers’ expectations (Wolfinbarger and Gilly, 2003). One important thing which can result in E-trust is fulfillment/reliability that is receiving the right service at right time (Gummerus et al., 2008). Then different studies imply that fulfillment/reliability can influence E-Trust for an online retailer.

Security/privacy refers to website security in its interactions with customers, credit card payments and encrypting shared data. Guarantying privacy/security plays a crucial role in building E-Trust, since it can reduce customers’ concern about any kind of personal information abuse. Therefore if a degree of security is guaranteed and it can meet customers’ expectations, the customer would share a part of his/her personal information. There is growing concern regarding security issues and the use of information given online in terms of the privacy of personal information and the unintended uses of it (Roca et al., 2009).

Regarding dimensions and indicators mentioned above, our conceptual model is presented in figure 1.

Table 1. The results of KMO and Bartlet Test

KMO	Significance level (Bartlet)	Chi-square statistic	Error
0.896	0.000	3027.475	0.05

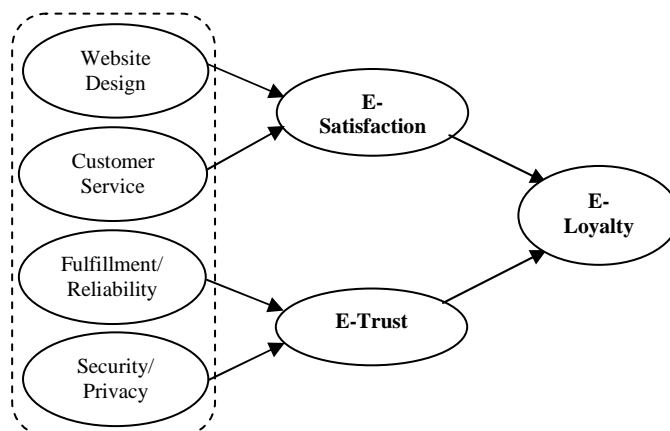


Figure 1. Conceptual Model

2.4 Research Method

This research is an applied field study and the method employed is descriptive and quantitative. Our statistical society includes all internet bank service customers of Iranian Tejarat Bank in the year 2011. The research sample is composed of 218 internet customers of the bank. The required data is gathered through stratified random sampling method using a researcher-made questionnaire with five demographic (gender, marital status, age, education and monthly income) and 25 specialized questions. Bank’s internet customers’ point of view about the factors which can influence E-Loyalty is gathered according to Likert scale using the bank’s website and customer e-mails.

In order to check the questionnaire validity, besides setting the questions according to the theoretical basis we took advantage of the opinions of the supervisor, the advisor and the experts in research and planning office of Tehran Tejarat bank. Moreover, the appropriate sample size, the required number of questions and correlation among them is checked using factor analysis and Kaiser-Meyer-Olkin (KMO) and Bartlet Tests. Table 1 contains the results.

As we can see KMO is greater than 0.05 which shows that the sample size is appropriate. The significance level of Bartlet test is equal to 0.000 which is smaller than 0.05 and approves the correlation among the variables and the factor analysis.

The questionnaire’s reliability is checked using Chronbach’s alpha. The results are represented in table 2.

Table 2. Reliability Coefficients

	Dimension	Chronbach’s alpha
1	E-Satisfaction	0.896
2	E-Trust	0.972
	All the questions	0.9406

As the table shows Chronbach's alpha is greater than 0.7 which means that the questionnaire is reliable enough.

2.5 Data Analysis

In the present study data analysis is done using both descriptive and inferential statistics. First general characteristics of the subjects (gender, marital status, age, education and monthly income) are represented through descriptive statistics and frequencies. The distribution of our sample regarding demographic variables is illustrated in table 3.

Table 3. Sample Distribution Regarding Demographic Variables

Demographic Variable	Stratum	Frequency	Percentage
Gender	Male	131	65
	Female	69	35
Marital Status	Single	109	54.5
	Married	91	45.5
Age	21-25	56	28
	26-30	103	51.5
	31-35	19	9.5
	36-40	12	6
	41-50	10	5
Education	Diploma	14	7
	Post Diploma	18	9
	Bachelor's	65	32.5
	Master's	99	49.5
	Doctoral	4	2
Monthly Salary	<100	21	10.5
	100-300	10	5
	300-500	68	34
	500-700	44	22
	700-1000	32	16
	>1000	25	12.5

As we can see in table 4, for the gender variable the highest percentage belongs to men with 65 per cent, for marital status the highest percentage belongs to singles with 54.5 percent, for the age variable the highest percentage belongs to 26-30 year olds with 51.5 per cent, for education the highest percentage belongs to MA degree graduates with 49.5 per cent, and finally for the monthly income the highest percentage belongs to the people whose income was between 300 to 500 thousand Toomans, with 34 per cent.

In order to test our hypotheses Pearson correlation test and to check the relation between dimensions and indicators linear regression is used. The multiple linear regressions' validity is approved using different tests like Anova test (for linearity), Durbin-Watson test (for auto correlation of error terms), Kolmogorov-Smirnov test (for error terms' normality) and finally Collinearity test. Then the regression equation is extracted from non-standard coefficients. We can use this equation in order to

forecast the dependent variable regarding explanatory variables. Finally according to standard variables the degree of each variable's effectiveness is determined. Table 4 represents the relationship among dimensions, indicators and E-Loyalty.

Table 4. Spearman Correlation Test results for the hypotheses

Hypotheses	coefficient	Error	Result
1. E-Satisfaction has direct positive effect on E-Loyalty.	0.605	0.05	Relationship exists
2. E-Trust has direct significant effect on E-Loyalty.	0.680	0.05	Relationship exists
3. The website design has positive significant effect on E-Satisfaction	0.443	0.05	Relationship exists
4. Customer service has positive significant effect on E-Satisfaction.	0.456	0.05	Relationship exists
5. Fulfillment/Reliability has positive significant effect on E-Trust.	0.554	0.05	Relationship exists
6. Security/Privacy has positive significant effect on E-Trust.	0.566	0.05	Relationship exists

The results show that a significant relationship exists among explanatory and dependent variables.

Table 5 represents the degree to which each dimension and its indicators affect E-Loyalty.

Table 4. Regression results

Hypotheses	t-Statistics	The degree of effectiveness	Result
1. E-Satisfaction has direct positive effect on E-Loyalty.	4.53 7	%26.2	Hypothesis confirmed
2. E-Trust has direct significant effect on E-Loyalty.	10.2 6	%59.1	Hypothesis confirmed
3. The website design has positive significant effect on E-Satisfaction	6.89 4	%41.2	Hypothesis confirmed
4. Customer service has positive significant effect on E-Satisfaction.	6.04 3	%36.1	Hypothesis confirmed
5. Fulfillment/Reliability has positive significant effect on E-Trust.	8.45 5	%44.5	Hypothesis confirmed
6. Security/Privacy has positive significant effect on E-Trust.	8.47 5	%44.6	Hypothesis confirmed

As the table shows, all hypotheses are confirmed. Both E-Satisfaction and E-Trust have positive direct effect on E-Loyalty. In addition E-Trust with 0.591 coefficient and its indicator privacy/security with 0.446 coefficient have the most powerful effects on E-Loyalty.

3. Results

The appearance of electronic trade and market introduced new concepts like E-Satisfaction, E-Trust and E-Loyalty. E-Loyalty is a key element in internet banking success. In the virtual world banks need to be armed with the knowledge and new solutions to increase their customers' satisfaction, trust, security and therefore E-Loyalty. So, both the banks and the society can take advantage of recognizing the effective factors on E-Loyalty, while the lack of knowledge about these factors can bring about big challenges in the banks' way to success. The results of testing hypotheses indicate that E-Satisfaction and E-Trust both have positive significant effect on E-Loyalty.

Regarding that the website design is an effective factor on customers' E-Satisfaction, the system interface can be designed in a way that it can reduce the search costs for the customers and the time needed for processing information in order to increase this indicator's effect. This indicator is aligned with website design quality in Young & Hyunjo's study (2012) and with Critical Success Factors (CSF) in Devaraj et al. study (2003). Customers may be dissatisfied with a company's service, before the organization or institute provides online services. In these cases it would be hard for the company to bring the customers back after providing the service. This finding is aligned with the customer service in Amjad et al. study (2011). Our results suggest that fulfillment/reliability is a key factor in building and retaining E-Trust. In other words, an customers must believe, the service they receive from an electronic organization would not waste their time and money. This indicator in the present study is aligned with reliability and accountability in the studies of De Oliveira (2007). Being sure about your privacy and security is another important determinant of E-Trust. The effect of this indicator on E-Trust can be empowered by reducing customers' concern about the exposure of his private information. This indicator is aligned with security in the studies of Roca et al. (2009) and De Oliveira (2007). The degree to which each dimension and its indicators can affect E-Loyalty is illustrated in figure 2.

4. Discussions

The results of the present study suggest many implications for the managers of different industries, business website designers and internet bankers. Regarding that more than 90 per cent of the

customers have academic education, more than 50 percent of them earn more than 5 and 10 million Rials, and the highest frequency belongs to 20-35 year olds, the banks need to focus on these groups. So, they have to have adequate plans to attract and retain them, provide them with up to date services, and use appropriate promotional and encouraging plans (such as free internet subscription) to improve E-Loyalty.

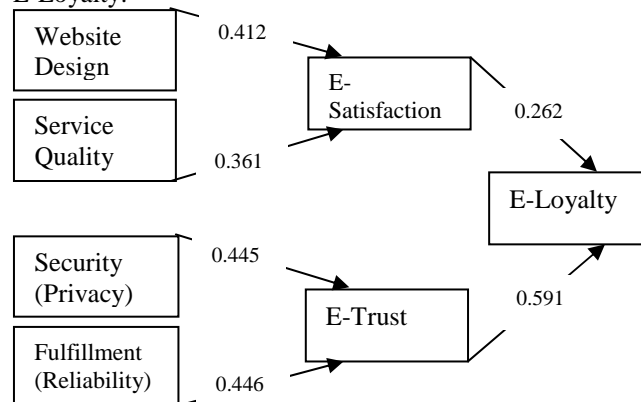


Figure 2. The effect of explanatory variables on the dependent variable

Regarding our variables and hypotheses, promoting the electronic service culture, providing useful information and preparing informative advertisement about the issue, taking user friendliness into accounting in designing internet services and flexibility can improve customer service indicator for Iranian Tejarak Bank. In addition, designing the website in a way that simplifies using the internet banking service for the customers, providing comprehensive, up to date and accurate information about the bank improves the website design indicator.

In order to improve fulfillment/reliability it would be helpful for Iranian Tejarat Bank to provide its customers with enough information about the technology used in internet banking. It can help the bank to assure its customers that the probability of any mistake would be the least possible.

Finally making customers believe that their privacy and personal information are protected as the conventional banking system as well as informing them about the protocols, mechanisms and the degree of security their password have would help Iranian Tejarat Bank to improve security/privacy.

Regarding the restriction of selected research domain as our main limitation we suggest future E-Loyalty researchers to focus on other sectors of the industry. Moreover, considering that customers have different understandings about the products and services of various industries, it is suggested to

classify the process development of E-Loyalty in several industries and evaluate customers' different understandings. Finally, since website design is an important indicator of E-Satisfaction, it is suggested to the future researchers to study more different aspects of this indicator.

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