

## Effects of self-service technology on customer value and customer readiness: The case of banking industry

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### ABSTRACT

The recent development on internet banking has contributed to this industry, significantly. People could do their banking transactions by clicking a bottom and transfer funds, pay bills, etc. In this paper, we present an empirical investigation to find out the effects of different factors on continuous internet banking. The proposed study of this paper has adopted a questionnaire, which was originally developed by Ho and Ko (2008) [Ho, S. H., & Ko, Y. Y. (2008). Effects of self-service technology on customer value and customer readiness: The case of Internet banking. *Internet Research*, 18(4), 427-446.]. We have used Pearson correlation test as well as stepwise regression techniques to verify the effect of different factors and the results of our survey show that four variables of easy implementation, usefulness, cost reduction and self-control positively influence continuous internet banking.

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## 1. Introduction

Service quality plays an important role on the success of business models and there are literally many studies for measuring the relative success of service quality (Cronin Jr & Taylor, 1992; Parasuraman et al., 1994; Anderson & Gerbing, 1988; Davies, et al., 1999; Robinson et al., 1999; Zhang et al., 2008). According to Hensmans et al. (2001), the emergence of electronic commerce raises some concerns about the constructing and leveraging of legitimacy for both practitioners and scholars of strategy. The applications of some existing challenges for the financial services industry, as for some other industries, are only starting to become clear. Hensmans et al. (2001) contributed to these initial insights by developing a conceptual model, which considers which e-strategies ‘bricks’ and ‘clicks’ adopt to improve their competitiveness. They detected four relevant organizational kinds in the emerging online financial services industry and evaluated tied to legitimacy-providing organizations for their potential both as buffers against environmental turbulence and bridges towards changing stakeholder perspectives.

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Waite et al. (2011) compared consumer expectations of bank website functionality for two online task scenarios including information search and transaction. The study implemented task technology fit theory and followed a novel methodological technique by implementing expectation 'fit' based on a set of website attributes. They reported several points of similarity and difference with regard to consumer expectations of website attributes according to task context and made an important and original contribution to both practice and theory. For marketing practitioners, the findings notified how they could 'manage' expectations to facilitate positive website experiences.

Lin and Hsieh (2006) examined how technology readiness (TR) affects customers' perception and adoption of self-service technologies (SSTs) through development of an empirical framework to explore the relationships among TR, perceived service quality, satisfaction and behavioral intentions toward SSTs. Their results indicated that TR could impact perceived SST service quality and behavioral intentions, while perceived SST service quality had a positive effect on customer satisfaction and behavioral intentions toward SSTs.

Chang and Wildt (1994) investigated Price, non-price product information, and purchase intention, together with the intervening variables of perceived price, perceived quality, and perceived value. They reported that objective price influenced perceived price positively and reference price influenced it, negatively. They supported the positive price-perceived quality relationship found in previous studies and demonstrated that the effect of price on perceived quality was lessened in the presence of substantial direct product information. Finally, the results demonstrated that a trade-off between perceived price and perceived quality could lead to perceived value, and perceived value was a primary factor influencing purchase intention.

Eriksson and Nilsson (200) concentrated on buyers' continued implementation of SST. In comparison with new buyer acquisition, continued implementation was a cost-effective market strategy aimed at retaining buyers. They reported that continued implementation of SST was positively influenced by buyers' perceived usefulness. They also reported that continued implementation of SST was negatively influenced by multichannel satisfaction.

Meuter et al. (2003) explored usage patterns and benefits of using SSTs based on a sample of 823 consumers. They also evaluated the impact of individual characteristics, specifically technology anxiety (TA) and particular demographics, on SST usage patterns and satisfaction levels. They reported that respondents with higher levels of TA implement fewer SSTs and TA was a better, more consistent predictor of SST usage. In their survey, TA influenced overall levels of satisfaction, intentions to use the SST again and the likelihood of participating in positive word-of-mouth for those consumers who had an initially satisfying experience.

Bateson (1985) examined consumers' choice process when they were encountered with the choice between a do-it-yourself option and a more traditional service delivery system. They reported that across a number of services there were individuals who would implement the self-service option even if the usual monetary or convenience incentives were withdrawn. Bitner et al. (2002) discussed how implement SSTs, practically. Bobbitt and Dabholkar (2001) presented integration attitudinal theories to understand and to predict implementation of technology-based self-service and discussed their model for an internet based application.

Chan et al. (1998) discussed some issues related to innovative products in Hong Kong industries. Ho and Ko (2008) investigated the effects of self-service technology on customer value and customer readiness for a case of internet banking. McKechnie et al. (2006) applied a technology acceptance model to the online retailing of financial services and discussed important factors influencing it. Wang et al. (2003) discussed the determinants of user acceptance of internet banking in an empirical investigation.

Gerrard and Cunningham (2003) discussed the diffusion of internet banking among Singapore consumers. Chen et al. (2002) presented a comprehensive survey on enticing online consumers in terms of technology acceptance perspective. Parasuraman et al. (1985) presented a novel conceptual model of service quality and its implications for future research. Parasuraman (1990, 2000) presented Technology Readiness Index (TRI) as a multiple-item scale to measure readiness to embrace new technologies. Weinstein (2002) discussed customer retention using a usage segmentation and customer value approach.

### 2. The proposed study

The proposed model of this paper uses a model originally developed by Ho and Ko (2008) for investigating the effects of self-service technology on customer value and customer readiness in a case study of internet banking. Fig. 1 demonstrates details of our survey.

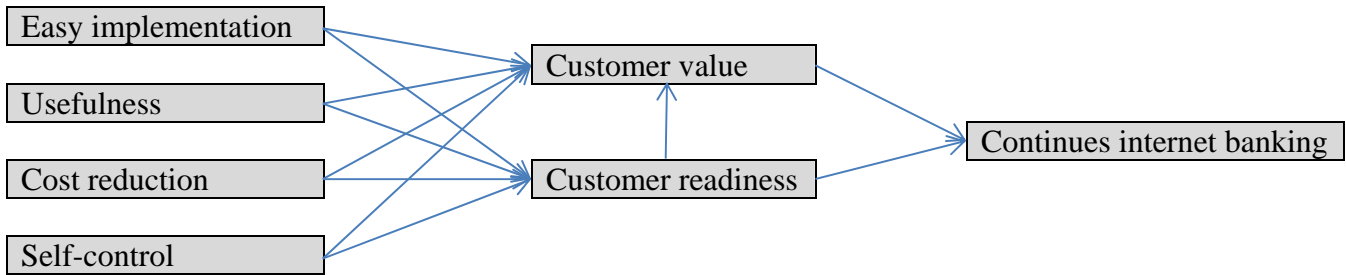


Fig. 1. The proposed study (Ho & Ko, 2002)

The sample size is selected from all population of customers who use banking services from Bank Mellet, an Iranian bank and it is calculated as follows,

$$N = Z_{\alpha/2}^2 \frac{p \times q}{e^2}, \tag{1}$$

where  $N$  is the sample size,  $p = 1 - q$  represents the probability,  $z_{\alpha/2}$  is CDF of normal distribution and finally  $\varepsilon$  is the error term. For our study we assume  $p = 0.5$ ,  $z_{\alpha/2} = 1.96$  and  $e = 0.99$ , the number of sample size is calculated as  $N = 384$ . The questionnaire consists of 34 questions and in order to validate the questionnaire, we have selected a sample of 30 customers and distributed the questionnaire among them. Cronbach alpha was calculated as 0.88, which was well above the minimum level of 0.70 and it validated the overall questionnaire. Next, we have distributed the questionnaire among 400 customers and analyzed the results. The results of the study are analyzed based on Pearson correlation ratios as well as stepwise regression analysis.

### 3. The results

In order to examine different components of our survey, we first present the results of Pearson correlation ratios, which are summarized in Fig. 2 as follows,

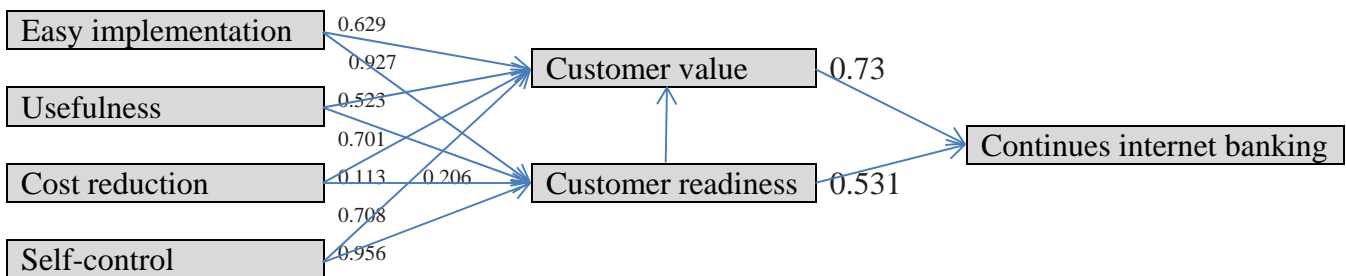


Fig. 2. The results of Pearson correlation ratios

As we can observe from the results of Fig. 2, there are some positive and meaningful relationships between different components of the proposed study. Next, we present some statistical observations on linear regression analysis. Table 1 demonstrates the results of our survey.

**Table 1**

The summary of statistical observations

Model	R	$R^2$	$\bar{R}^2$	Std. Error	Change Statistics				Durbin-Watson	
					$R^2$	F	df1	df2		Sig.
1	.981 <sup>a</sup>	.962	.962	.08552	.962	3614.909	4	383	.000	1.970

The results of Table 1 indicate that there are some positive and meaningful relationship between continuous internet banking as dependent variable and other independent variables. Table 2 summarizes the results of stepwise regression analysis.

**Table 2**

The summary of regression analysis

Model	Independent variables	Non-standard coefficients		Standard coefficients	t	Sig.
		B	Std. Error	Beta		
1	Intercept	3.013	0.063		3.202	0
	Easy implementation	13.305	0.023	0.3	13.025	0
	Usefulness	21.002	0.023	0.2	3.098	0
	Cost reduction	14.002	0.014	0.41	3.153	0
	Self-control	36.698	0.022	0.7	3.205	0

The results of Table 2 clearly specify that four independent variables of easy implementation, usefulness, cost reduction and self-control positively influence continuous internet banking, positively. All t-student values are statistically meaningful when the level of significance is one percent. Therefore, we can confirm that the proposed model presented by Ho and Ko (2008) can be used for the proposed case study of this paper.

#### 4. Conclusion

In this paper, we have presented and empirical investigation to study the impact of different factors on continuous internet banking. The proposed study of this paper has adopted a questionnaire, which was originally developed by Ho and Ko (2008). We have used Pearson correlation test as well as stepwise regression techniques to verify the effect of different factors and the results of our survey show that four variables of easy implementation, usefulness, cost reduction and self-control positively influence continuous internet banking. The results of this survey are consistent with the results of Ho and Ko (2008).

As future study, we recommend interested researchers to build a conceptual framework to compare the results of our findings with traditional SERVQUAL model proposed by Parasuraman (1990, 1994, 2000).

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