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## The Impacts of Service Quality and Customer Satisfaction on Customer Loyalty in Internet Banking

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### Abstract

This study examined the relationship and the impacts of e-SQ and e-Satisfaction on e-Loyalty in internet banking. The modified version of E-SERVQUAL instrument was used to determine e-SQ for internet banking service of a commercial bank in Malaysia. Questionnaires were collected randomly from 265 internet banking users. The findings indicated that assurance-fulfillment, efficiency-system availability; privacy, contact-responsiveness and website aesthetics and guide constitute e-SQ for the internet banking service. Website aesthetics and Guide, Efficiency-System availability and Contact-Responsiveness of the internet banking e-SQ were positively affected e-Satisfaction. E-Satisfaction was positively significant to e-Loyalty. E-Satisfaction was found to partially mediate the relationship of Website aesthetics and Guide of e-SQ and customer e-Loyalty. The result highlighted that attractiveness and appearance of banks' websites, and the information and guidance provide by the websites are important features to internet banking users. This finding reflected that in internet banking, beside the technical and functionality aspects of banks' websites e-SQ, such as efficiency, fulfilment and system availability, the aesthetic value and proper guidance of the websites are also crucial to ensure quality of e-SQ that will lead to e-Satisfaction and e-Loyalty.

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*Keywords:* Internet Banking, E-SERVQUAL, e-Satisfaction, e-Loyalty

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### 1. Introduction

Internet banking is one of the increasingly important businesses in electronic business worldwide. In Malaysia, there were 4.5 million registered internet banking users by 2008 and the internet banking has a yearly growth rate 40.6% compared to the previous year that shows it is both becoming growing popularity and rapidly becoming one of the most popular services utilized in Malaysians retail banking customers (Yee and Faziharudean, 2010). Building electronic loyalty (e-loyalty) in internet banking is important for banks to ensure high rate of customer retention and reduced cost for recruiting new customers which leads to long-term profitability. To retain customers,

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banks should try to make customers satisfied with their services and offerings, and this can be achieved through delivering high quality of electronic service (e-SQ). Most studies in e-SQ researches indicated that e-SQ is strongly correlated with e-satisfaction and e-SQ is significantly and positively affected e-satisfaction (Fassnacht and Köse, 2007). Subsequently, high e-SQ, with high e-satisfaction will contribute to the customer retention and e-loyalty (Grace and Sun, 2009). Further, the mediating effect of e-satisfaction on the relationship between e-SQ and e-loyalty in internet banking has been central study in services marketing (Caruana, 2002, Yan and Fengjie, 2009). This fact makes it important for the banks in Malaysia to have a clear view on the impacts of their internet banking e-SQ and e-satisfaction on e-loyalty.

## **2. Literature Review**

E-SQ refers to the consumers overall evaluation and judgment of the excellent and quality of electronic service offering in the virtual marketplace (Santos, 2003). A number of scales have been developed to measure the e-SQ in e-commerce environment such as, E-SERVQUAL (Parasuraman, Zeithaml, & Malhotra, 2005), WebQual (Loiacono, Watson, & Goodhue, 2002), and SITEQUAL (Yoo & Donthu, 2001), to name a few. A review on e-SQ, e-Satisfaction and e-Loyalty in internet banking indicated that the relationship between e-SQ, e-satisfaction, e-loyalty should be determined as a way of improving the services and to sustain internet banking service providers competitiveness. Most of the e-SQ studies show that the e-SQ is the antecedents of e-customer satisfaction (Szymanski & Hise, (2000), and it has a significant positively effect on customer satisfaction of the internet banking services (Fassnacht & Köse, 2007). E-loyalty refers to customer's favorable attitude toward an ecommerce website that predisposes the customer to repeat buying behavior and intention to revisit a website or to make a transaction from it in the future (Cyr, Hassanein, Head, & Ivanov, 2007). Loyalty of internet banking users is directly affected by satisfaction and trust in an online bank, which in turn are determined by website quality and e-SQ. Many studies found that e-satisfaction has significant positively impact on e-loyalty (Floh & Treiblmaier, 2006).

While e-service quality dimensions are occasionally considered to be causing e-loyalty directly, satisfaction is conceptualized as a mediator of the relationship between quality and loyalty (Caruana, 2002), and it plays a mediator role in the effect of service quality on service loyalty (Yan & Fengjie, 2009). Therefore, if internet banks can provide the sound e-SQ to increase customer e-satisfaction, it would enhance users to do more businesses with the banks, recommend the sites to others, treat the sites as first choice in doing their internet banking transaction and prefer to use the sites relative to competitors, i.e. e-loyalty (Ribbink, Riel, Liljander, & Streukens, 2004).

## **3. Methodology and Assessment of Instrument**

The e-SQ dimensions of this study was adapted and modified based on E-SERVQUAL scale developed by Parasuraman, Zeithaml, and Malhotra (2005) that can be classified into two scales; E-S-QUAL or core scale, and E-RecS-QUAL or recovery scale. The four dimensions of E-S-QUAL used were efficiency, fulfilment, system availability and privacy with 22 items. For RecS-QUAL, two dimensions used were responsiveness and contact with eight items. Measurement on the compensation dimension of RecS-QUAL was dropped because of difficulty in evaluating this dimension due to lack of enough people encountering problems. Based on the review on e-SQ dimensions for internet banking, the authors added three dimensions –site aesthetics and customization (Wu, Chang, Yang & Chen, 2008) and assurance (Chien-Ta & Wen, 2008) - to cover all potential demands of the Malaysia Internet banking customers. The researchers then discussed with experts (four professors and five bankers) to filter the selected nine dimensions and defined all items for them to match existing services in Malaysia Internet banking. The outcome of this exercise was a conceptual model of eight dimensions with 21 items to measure e-SQ in internet banking. Dimension of customization was dropped because the site customization was not provided. Three items used to measure users e-satisfaction of internet banking, which were adapted based on the construct of e-Satisfaction proposed by Schaupp and Bélanger (2005). For e-loyalty, four items were used (Ribbink, et.al, 2004) as a result of reviews on cognition-affection-behaviour approaches to measure customer loyalty. Primary data of e-SQ, e-satisfaction and e-loyalty was gathered randomly from 265 internet banking users of a commercial bank in Malaysia.

The KMO measurement of sampling adequacy value for e-SQ was 0.768 (Bartlett’s test of Sphericity value of 0.000), which was greater than 0.6, indicating that the proportion of variance in the variables was caused by the underlying factors, allowing the current data to proceed with factor analysis. Using Exploratory Factor analysis (EFA), five dimensions in the initial solution with eigenvalues greater than 1.0 has been extracted with the cumulative percentage of 79.009%. Therefore, the proposed eight dimensions of e-SQ were reloaded and reorganized into five dimensions, namely Assurance-fulfilment, Efficiency-system availability, Privacy, Contact-responsiveness and web aesthetics and guide. Based on results of factor loading  $\geq 0.5$ , one item (e-SQ 7 - website accuracy of fulfilment) was neglected due to its factor loadings was  $< 0.5$ .

The KMO measure of sampling for e-satisfaction and e-loyalty were 0.675 and 0.735 respectively (Bartlett’s test of Sphericity of 0.00). The results of Total Variance Explained indicated that only one dimension in the initial solution with eigenvalues greater than 1.0, i.e. e-satisfaction, has been extracted with the cumulative percentage of 71.543%. Three items of e-satisfaction were accepted based on the results on component matrix with factor loading  $\geq 0.5$ . For e-loyalty, the results of Total Variance Explained indicated that only one dimension, i.e. e-loyalty, in the initial solution with eigenvalues greater than 1.0 has been extracted with the cumulative percentage of 74.454%. The proposed four items of e-loyalty were accepted based on the results on component matrix with factor loading  $\geq 0.5$ .

The reliability of the questionnaires was evaluated by assessing the internal consistency of the items representing each construct of e-SQ, e-satisfaction and e-loyalty using Cronbach’s alpha. The reliability of each construct of e-SQ was more than 0.7 as follows: Assurance-fulfilment = .912; Efficiency-system availability = 0.852; Privacy = 0.783; Contact-responsiveness = .700; and Web aesthetics and guide = .781; overall e-SQ  $> .792$ . The Cronbach’s alpha for e-satisfaction and e-loyalty were .742 and .782.

**4. Result and Analysis**

As illustrated in Table 1, the multiple regression analysis verified that website aesthetics and guide, efficiency-system availability and contact-responsiveness of internet banking e-SQ were positively and significantly associated with e-satisfaction. Since the correlation coefficient value was  $R=0.776$ , the impact of e-SQ towards e-satisfaction can be considered as high. As presented in Table 2, the multiple regression analysis revealed that e-Satisfaction was positively and significantly associated with e-Loyalty. The correlation coefficient value of  $R=0.773$  indicated that the impact of e-satisfaction towards e-loyalty in internet banking is considered as high.

Table 1: Regression result between internet banking e-SQ and e-satisfaction

Parameter	B	Std Error	$\beta$	t	Sig.	VIF
Constant	.358	.180		1.991	0.048	0.000
Website aesthetics and Guide	0.377**	0.046	0.393	8.248	0.000	2.023
Efficiency-System availability	0.318**	0.044	0.352	7.240	0.000	3.052
Contact-Responsiveness	0.216**	0.038	0.257	5.640	0.000	2.502
Privacy	-0.080	0.040	-0.108	-1.992	0.58	1.169
Assurance-Fulfilment	0.067	0.039	0.108	1.699	0.90	2.015
F	130.428	R	0.776	$R^2$	0.601	

Note: \*  $p<0.05$ ; \*\*  $p<0.01$

Table 2: Regression result between e-satisfaction and e-loyalty

Parameter	B	Std Error	$\beta$	t	Sig.	VIF
Constant	.379	.185		2.050	0.041	0.000
e-Satisfaction	.786**	.073	.624	10.749	0.000	1.000
F	275.276	R	0.773	$R^2$	0.597	

Note: \*  $p<0.05$ ; \*\*  $p<0.01$

The hierarchical regression analysis was performed based on the four conditions recommended by Baron and Kenny (1986) and the result is presented in Table 3; in which, (i) when condition i was tested, internet banking e-SQ (the independent variable) had only partially significant impact on e-satisfaction (the mediator variable), with a standardized beta coefficient of .377 (sig = 0.000) on website aesthetics and guide; (ii) Internet banking e-satisfaction had a significant impact on e-loyalty, with a standardized beta coefficient of .786 (sig = 0.000). Thus, the mediator variable of e-satisfaction is significantly associated with the dependent variable of e-loyalty, and condition ii was fulfilled; (iii) the direct impact of e-SQ on e-loyalty of internet banking excluding e-satisfaction was performed (condition iii). As can be seen in Table 3, e-SQ also had partially significant influence on e-loyalty with the standardized beta coefficient of .389 (sig = 0.000) of website aesthetics and guide; and (iv) the impact of e-SQ on e-loyalty when the e-SQ (independent variable) and e-satisfaction (mediator variable) were controlled with the mediating effect of e-satisfaction included was then examined. The result (Table 3) indicated that the impact of e-satisfaction was significantly declined from .786 to .769 (sig = 0.000), thus Baron and Kenny’s fourth condition for mediator effect was met. Thus, it can be concluded that users’ e-satisfaction was only partially mediating the relationship between website aesthetics and guide of e-SQ and e-loyalty.

Table 3: Hierarchical Regression results of e-SQ, e-satisfaction and e-loyalty of internet banking (N=265)

Independent variables	Dependent variable											
	e-Satisfaction			Model 2			e-Loyalty			Model 4		
	Model 1			Coef	t	Sig	Model 3			Coef	t	Sig.
Constant	.358	1.991	.048	.379								
Website aesthetics and Guide	.377	8.248	.000				.389	8.235	.000	.078	5.687	.245
Efficiency-System ava.	.318	7.240	.000				.329	7.189	.051	.053	4.577	.289
Contact-Responsiveness	.216	5.640	.000				.229	5.772	.053	.032	4.217	.312
Privacy	-.080	-1.992	.58				-	-1.413	.793	-	0.874	1.39
Assurance-Fulfilment	.067	1.699	0.90				.053			.015		
							.049	1.452	1.15	-	-.094	1.39
e-Satisfaction				.786	10.749	.000				.769	3.897	.000
<b>R<sup>2</sup></b>	.601			.597			.538			.605		
Adjusted R2	.593			.592			.526			.597		
F-Change	130.42			275.			118.			94.8		
	8			276			342			46		
Sig. F-Change	.000			.000			.000			.000		

5. Discussions

The regression analysis result indicated that when the five e-SQ dimensions used in this study were theorized to simultaneously influence e-satisfaction, website aesthetics and guide, efficiency-system availability and contact-responsiveness were found to have positive and significantly impacts on e-satisfaction. These impacts highlighted that both dimensions of E-S-QUAL (efficiency-system availability) and contact-responsiveness of RecS-QUAL (Parasuraman, et.al, 2005) and additional dimension of website aesthetics and guide (Wu, et.al, 2008) are important features of internet banking e-SQ in predicting users’ e-satisfaction. The findings also proved that e-satisfaction-e-loyalty positive links existed in the context of internet banking, which is consistent with previous research findings (Floh & Treiblmaier, 2006). By focusing on improving banks policy related to users’ information, convenience of internet banking transaction and customer values relative to the cost incurred to use the internet banking service (Schaupp & Bélanger, 2005), users’ satisfaction is likely to be enhanced, and this will lead to increase in e-loyalty.

The hierarchical multiple regression analysis exhibited that the moderator of e-satisfaction partially mediated the relationship between e-SQ and e-loyalty via website aesthetics and guide. Hence, the result is parallel with previous researches (Caruana, 2002, Yan & Fengjie, 2009). This finding reflected that the aesthetic value and proper

guidance of the websites are crucial to ensure quality of e-SQ that will lead to higher e-satisfaction and e-loyalty. Thus, banks should not only focus on improving the technical and functionality aspects of banks' websites e-SQ, such as efficiency, fulfilment and system availability, but must also continuously enhance the visual appealing and attractiveness of the websites as well as updates the information and user guides that are provide in the websites.

This study extended the established link of e-SQ, e-satisfaction and e-loyalty in the context of internet banking. E-SQ dimensions were found to have significant impacts on e-satisfaction, highlighting the improvement of e-SQ will lead to higher e-satisfaction. This study recognized that e-satisfaction had a significant positive effect on e-loyalty as most of the previous studies addressed. However, e-satisfaction was partially mediated the relationship between e-SQ and e-loyalty. This mediating effect involved website aesthetic and guide of e-SQ, indicating elements of graphic, visual, user guidance provide in banks' website is important and they can contribute to loyalty through e-satisfaction.

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