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The Relationship between E-Service Quality and User Satisfaction Regarding the Use of Mobile Banking in The Banking Industry

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ABSTRACT

Digital transformation is predominantly used in a business context, but it also impacts the banking industry, which is involved in tackling customer-centric sense of increasingly demanding customers who value speed, cost efficiencies and value-added innovative services. Therefore, the main purpose of this study is to determine the relationship between e-service quality and user satisfaction regarding the use of mobile banking in the banking industry. The scope of this study was the public users who have experienced using mobile banking services such as Bank Islam Internet Banking, CIMBClicks, MayBank2U, iRakyat, MyBSN and others. A total of 146 respondents were included in this study. The data was analysed using partial least square (PLS) techniques through the SmartPLS 3.0 software. The result indicated that there was a positive and significant relationship between e-service quality and user satisfaction in the use of mobile banking services. The most influential factor on user satisfaction was security followed by cost and ease of use, while reliability, responsiveness and usefulness were not significantly influential. Therefore, the researchers highly recommended for the banking industry to plan tremendous approaches and build up suitable actions by focusing on those particular e-service elements that represent significant outcomes that obviously leads to better business performance to the company. The researchers also recommended for future research to be carried out on other industries using different methodologies such as longitudinal method, enlarging the sample size and using the qualitative approach.
Keywords: User Satisfaction; E-Service Quality; Mobile Banking; Online Banking; Banking Industry.

INTRODUCTION

The increasing number of Internet users and the tremendous growth of mobile app by 270% (App Annie, 2015), have caused the banking industry to move forward to provide mobile banking

service to their customers. Based on a survey done by the Malaysian Communications and Multimedia Commission (MCMC), the number of Internet users increased by 80% in 2016. 50% of these Internet users carried out online shopping, which required them to transfer money online. Internet banking provides convenience to customers and encourages customers to conduct transactions more easily and efficiently through the banking website (Goh Mei Ling et al., 2016). On top of that, the Internet banking also helps banks to reduce their operating costs. Despite many benefits from online services, previous studies found that a large number of banks' customers were not willing to use the Internet banking services offered due to the services offered through Internet banking have yet to satisfy their customers (Zhang, Weng & Zhu, 2018; Goh Mei Ling et al., 2016). Customer satisfaction is an important factor to help banks sustain their competitive advantages. Online service quality has an effect on online banking system performance and user satisfaction (Goh, Yeo, Lim, & Tan, 2015). Therefore, this study aimed to determine the relationship of online service quality on user satisfaction towards the use of mobile banking services using the E-SERQUAL research model. The research model focused on six dimensions: Cost, Ease of Use, Reliability, Responsiveness, Security and Usefulness.

LITERATURE REVIEW

Users' satisfaction is important in all types of businesses, as the most effective way to increase and maintain user base is through achieving high user satisfaction (Kim, Meng, Kalinowski & Shin, 2014). The provider must plan to continually improve the user experience of the service. In addition, by tracking user satisfaction, they can find out what users think about the service and which parts of it cause them problems (Measuring, 2017). User satisfaction is also considered as one of the most important and vital variables for long-time business success.

Nowadays the need for continuing activities and maintaining the competitive advantage is gaining attention among users (Mozaheb, Alamolhodaei, & Ardakani, 2015). If the perceived performance matches or even exceeds the users' expectations of services, users are satisfied. If it does not, the users are dissatisfied (Taylor, 2016).

E-SERQUAL RESEARCH MODEL
Cost

Cost is one of the major factors that dominate users' acceptance of innovation. Aliyu, Rosmain, and Takala (2014) stated that the use of new technologies must be reasonably priced relative to the users. Otherwise, the acceptance of the new technology may not be practical from the standpoint of the customers.

Many Internet users are using smart phone compared to other devices such as desktop and laptop computers (Shetty, 2015). Anand, (2015) as cited in Shetty, (2015) said that even though Internet transactions will be dominated by mobile transactions, online banking would continue to be important and is growing at 30-40%. Internet banking offers some of the lowest fees in banking. This can be done because online banking does not have the same level of costs as traditional banks. Therefore, the following hypothesis was constructed.

H1: There is a positive relationship between the cost of E-service quality and user satisfaction towards the use of mobile banking services.

Ease of Use

According to Yoon (2015), ease of use is defined as free of effort using the new technology based on the individual's perception. In other words, perceived ease of use is the system is stress-free and effortless that someone believes with it (Oyeleye, Sanni & Shittu, 2015). The easier it is for a user to interact with a system, the more likely he or she will find it useful.

A considerable amount of prior studies supported the significant effect of perceived ease of use on behavioural intention, either directly or indirectly through perceived usefulness (Nasri & Zarai, 2014). Thus, if there is an ease of use in operation or process then, it is more likely for the customers to accept the online banking services which can be instrumental to the utilisation of technology and contribute to the individual by reducing transfer costs and improving work performance. Therefore, the following hypothesis was constructed.

H2: There is a positive relationship between ease of use of E-service quality and user satisfaction towards the use of mobile banking services.

Reliability

Reliability referred to providing the required service in a precise way and in line with advertised attributes (Camilleri et al., 2014). Iberahim, Taufik, Adzmir and Saharudin (2015) stated that reliability refers to the ability to deliver expected procedure at all times, how the problems faced by customer service are handled by the organisation, performing the right services for the first time, response was promised on a specific time and maintaining error-free record.

Based on online banking services, environment condition and technical reliability are equated to reliable design that is functional (Iberahim et. al, 2015). A proper functionality of the website has been involved due to the technical working are related to reliability (Khan et al., 2014). Therefore, the following hypothesis was constructed.

H3: There is a positive relationship between reliability of E-service quality and user satisfaction towards the use of mobile banking services.

Responsiveness

According to Jun and Cai (2001), cited in Camilleri et al. (2014) responsiveness refers to dealing with problems faced and the service of delivering a prompt response and convenient way to resolve the problem. Responsiveness is associated with the service of representatives for users. It measures the ability of the website to provide a specific time for service accomplishment given to the customers, always has the availability of representative on online for the response of customers' queries or complaints and provides online guarantees (Saqib, Irfanullah, Farhatullah, Naseem & Ahmad, 2014).

Other authors defined responsiveness as the ability for flexible and timely response to customer requirements (Ibrahim et al., 2015). Based on a statement by Jay and Barry (2014) cited in Iberahim et.al, (2015), it is stated that transformation of information technology has brought great changes in the business environment, and no other sector has been affected by advancements in technology as much as banking and financial institutions. Therefore, the following hypothesis was constructed.

H4: There is a positive relationship between responsiveness of E-service quality and user satisfaction towards the use of mobile banking services.

Security
The most challenging issue faced by customers in e-commerce world is privacy and security. Security in the form of keeping customer safe from an invasion of their privacy affects trust and satisfaction. Online service owners need to make guarantees in terms of privacy and security to gain the customers trust. Since security and trust are related, the norm of security violation may lead to losing users (Dixit & Datta, 2017). About three in 10 mobile device owners in Malaysia prefer to visit physical banks rather than conduct banking activities on their mobile phone, and security was by far the biggest reason (Nielsen, 2016).

The main issue that banks face nowadays is privacy. Privacy includes providing security for the customers regarding their personal information. Data should not be shared and credit card information should be kept secure (Firdous, 2017). So it seems that while mobile banking has a reputation for a lack of security or privacy among some owners in Malaysia, many are still doing it. Therefore, the following hypothesis was constructed.

H5: There is a positive relationship between security of E-service quality and user satisfaction towards the use of mobile banking services.

Usefulness
The usefulness of Internet Banking is very crucial to the banking customers (Bashir & Madhavaiah, 2014). Using Internet Banking, the customers can access their personal and business account information while avoiding a trip to the bank. In addition, they can check their balance whenever they need to, even if the bank is closed. Moreover, the customers can pay their bills online as well, which can save both time and money on parking and petrol (Aini, Zalinawati, Norudin & Hayati, 2012). Users can easily use online banking if it is user-friendly, easy to operate and remember, and does not involve too much hassle to operate. The easier to use the technology, more useful it is perceived to be and more likely to be accepted by users (Bashir & Madhavaiah, 2014). Therefore, the following hypothesis was constructed.

H6: There is a positive relationship between useful of E-service quality and user satisfaction towards the use of mobile banking services.

Based on above literature discussion, the following research model was adapted as shown in FIGURE 1.

FIGURE 1: Research Model
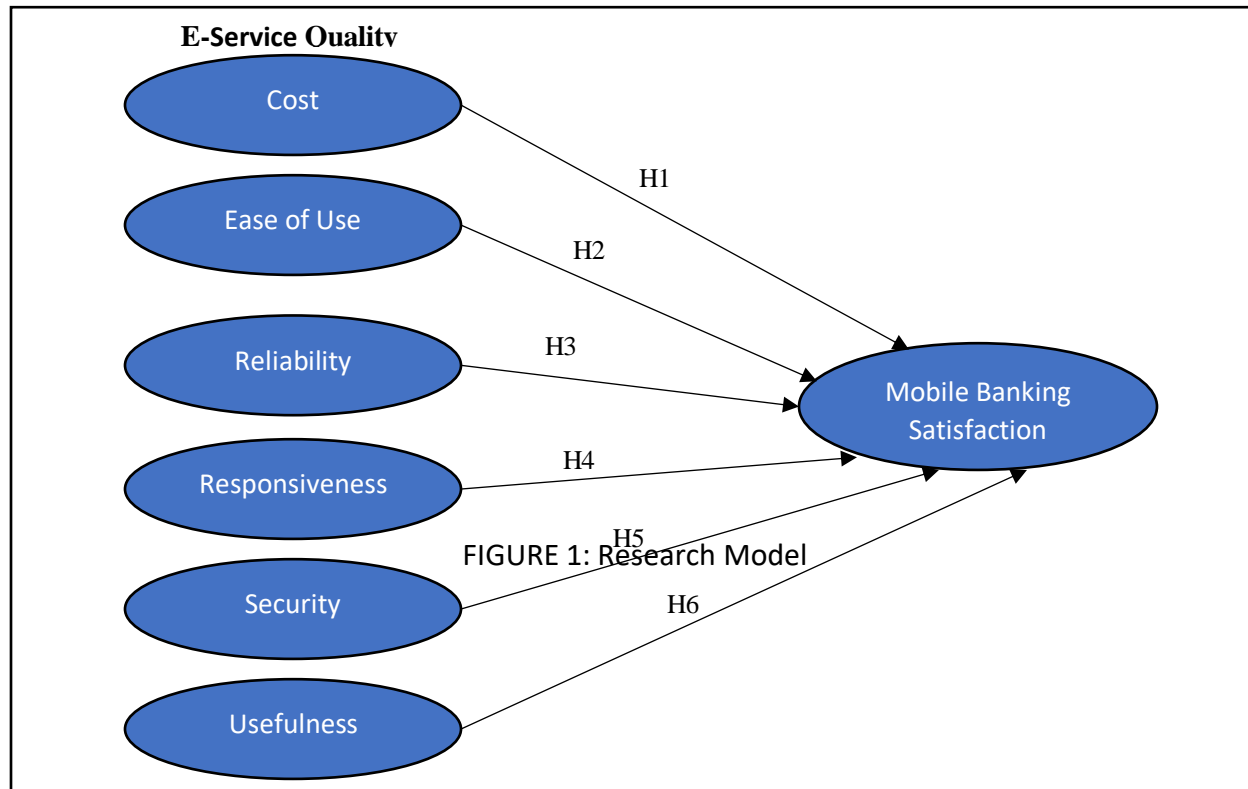
METHODOLOGY

The population of this study are dominantly public users who had experienced using mobile banking services such as Bank Islam IB, CIMBClicks, MayBank2U, iRakyat, MyBSN or others. This study employed the convenience sampling technique to select the respected respondent from the population. The Gpower software was used to determine the minimum sample size required. Since the model had a maximum of six (6) predictors (for the outcome E-SERQUAL Model), with the effect size as small as (0.15) and power needed as 0.95, the minimum sample size required was 146.

All questionnaires were hand delivered to the respondents. A cover letter and appropriate instruction were attached to the questionnaires. The questionnaire was distributed directly to the respondent and was collected right after they responded to the questionnaire.

The questionnaire consisted of three sections, which are:

Section A: Demographic Information

This section requires respondents to indicate their gender, age, education level, status, and income. The respondents can answer the multiple-choice questions by selecting one answer only.

Section B: E-Service Quality
In this section, the items have been adopted from An-Nasir et. al, (2014). It is reported that this survey has six dimensions to be measured, which are reliability, responsiveness, ease of use, cost, usefulness and security.

Section C: User Satisfaction
This section covered the questions related to user satisfaction toward online banking system.

RESULT
The demographic details show that the majority of the participants were male (n = 222) compared to female (n = 220). The majority of these respondents are Malay (n = 275), followed by Chinese (n = 73, Indian (n = 56) and others (n = 38). Most of the respondents have income between RM1000 to RM5000 (n = 282). The result also indicated that many of the respondents used mobile banking once in a month (n = 135). The details of the results are shown in TABLE 1.

TABLE 1: Demographic Details

	Demographic Item	Frequency	Percentage
Gender	Male	222	50.2%
	Female	220	49.8%
Race	Malay	275	62.2%
	Indian	56	12.7%
	Chinese	73	16.5%
	Others	38	8.6%
Income	<RM1000	79	17.9%
	RM1000 - RM5000	282	63.8%
	>RM5000	81	18.3%
Bank Provider	Bank Islam	62	14.0%
	CIMBClicks	149	33.7%
	Maybank 2 U	130	29.4%
	iRakyat	48	10.9%
	MyBSN	31	7.0%
	Others	22	5.0%
Frequency of Use	Daily	46	10.4%
	2-4 times a week	117	26.5%
	Once a week	144	32.6%
	Once in a month	135	30.5%

Confirmatory Factor Analysis (CFA)

The SmartPLS 3.0 software was used to analyse the data of the study. To test the CFA, a bootstrapping method of 500 resamples was used to determine the significance level of the loadings, weights and path coefficient. The CFA began with the assessment of the convergent and discriminant analysis. The results are shown in TABLE 2. The loadings of factor analysis yield the results of items exceeding the recommended value of 0.6. Two sets of convergent analyses were run in order to assess the composite reliability and average variance extracted (AVE) values. The composite reliability (CR) values which is to show the degree to which the items indicated the latent construct, ranged from 0.837 to 0.910. Hence, the composite reliability requirements are met since the values exceeded the recommended value of 0.7. In addition, the average variance extracted was in the range of 0.508 and 0.670. Moreover, this study shows that 37.3% of variance for mobile banking satisfaction is explained by E-Service Quality.

The next procedure was to assess the discriminant validity by examining the correlations between constructs and their square root of the average variance extracted. The results show that the square root of the AVE is greater than the correlation with other constructs as shown in TABLE 3. Thus, the measurement model reflects acceptable convergent and discriminant validity.

TABLE 2: Convergence Reliability and Validity Testing

Item	Outer Loading	Mean	Standard Deviation	Cronbach Alpha	Composite Reliability	Average Variance Extracted	R^2
Cost		3.906	0.665	0.791	0.855	0.541	
COST1	0.714						
COST2	0.739						
COST3	0.725						
COST4	0.771						
COST5	0.729						
Ease of Use		3.869	0.761	0.849	0.892	0.623	
EASE1	0.827						
EASE2	0.763						
EASE3	0.800						
EASE4	0.775						
EASE5	0.780						
Reliability		3.825	0.707	0.804	0.864	0.560	
REAL1	0.770						
REAL2	0.754						
REAL3	0.752						
REAL4	0.716						
REAL5	0.747						
Responsiveness		3.661	0.835	0.858	0.898	0.637	
RESP1	0.806						
RESP2	0.815						
RESP3	0.767						
RESP4	0.802						
RESP5	0.800						
Security		4.034	0.803	0.877	0.910	0.670	
SEC1	0.824						
SEC2	0.868						
SEC3	0.813						
SEC4	0.826						

Item	Outer Loading	Mean	Standard Deviation	Cronbach Alpha	Composite Reliability	Average Variance Extracted	R^2
SEC5	0.758						
Usefulness		4.026	0.599	0.758	0.837	0.508	
USE1	0.763						
USE2	0.733						
USE3	0.707						
USE4	0.672						
USE5	0.683						
Satisfaction		3.922	0.790	0.845	0.890	0.620	**0.373**
SAST1	0.687						
SAST2	0.794						
SAST3	0.820						
SAST4	0.784						
SAST5	0.842						

TABLE 3: Discriminant Validity

Construct	Cost	Ease of Use	Reliability	Responsiveness	Security	Usefulness	Satisfaction
Cost	0.736						
Ease of Use	0.647	0.789					
Reliability	0.681	0.597	0.748				
Responsiveness	0.662	0.733	0.619	0.798			
Security	0.565	0.695	0.498	0.638	0.819		
Usefulness	0.665	0.573	0.607	0.507	0.537	0.712	
Satisfaction	0.479	0.517	0.412	0.431	0.569	0.398	0.787

Hypothesis Testing Results

The result identified that there is a positive and significant relationship between e-service quality and user satisfaction regarding the use of mobile banking services. The most influential factor on user satisfaction is security (β= 0.382, t = 5.636) followed by cost (β= 0.181, t = 3.586) and ease of use (β= 0.172, t = 2.331). However, there is no significant influence among reliability (β= 0.061, t = 1.127), responsiveness (β= -0.088, t = 1.384) and usefulness (β= -0.018, t = 0.388) on user satisfaction. Therefore, H1, H2 and H5 are accepted while H3, H4 and H6 are rejected.

In addition, the Stone-Geisser approach is used to assess whether the predictor variable has a substantive influence on the mobile banking service satisfaction by exploring the effect of f^2. According to Chin (1998), the higher the f^2, the greater the influence of exogenous construct where in this case, mobile banking service satisfaction with the values of 0.02, 0.15 and 0.35 can be respectively regarded as small, medium or large effect respectively. Thus, the results of effect size shows that security, cost and ease of use have smaller effects on user satisfaction towards the use of mobile banking services. The details of the result are as shown in TABLE 4.

TABLE 4: Hypothesis Testing

Hypothesis	Relationship	β	STDEV	t-value	p-value	f^2
H1	Cost -> Satisfaction	0.181	0.050	3.586	*0*	0.019
H2	Ease of Use -> Satisfaction	0.172	0.074	2.331	*0.010*	0.016
H3	Reliability -> Satisfaction	0.061	0.054	1.127	0.130	0.003
H4	Responsiveness -> Satisfaction	-0.088	0.063	1.384	0.083	0.005
H5	Security -> Satisfaction	0.382	0.068	5.636	*0*	*0.107*
H6	Usefulness -> Satisfaction	-0.018	0.047	0.388	0.349	0

CONCLUSION

This study is meant to investigate the relationship between e-service quality and user satisfaction towards the use of mobile banking in banking industry. Based on the data analysis, there is a positive and significant relationship between e-service quality and user satisfaction towards the use of mobile banking services. Vital dimensions of e-service quality, namely security, cost and ease of use, significantly contribute to user satisfaction. Conversely, reliability, responsiveness and usefulness are

not significant predictors on user satisfaction. These dimensions are not significant predictors on user satisfaction in the banking industry due to the great technology approach employed by the companies.

A.   Managerial Implication

Based on the findings, the current study establishes that e-service quality significantly influences user satisfaction towards the use of mobile banking services. Mainly, the elements of e-service quality such as security, cost and ease of use significantly influence user satisfaction. According to their significance, the most influential factor on user satisfaction is security, followed by cost and ease of use. As a result, the management in the banking industry should deliberate heavily in delivering excellent e-service quality particularly through the security element, because the excellent e-service quality that the customer experienced may be able to enhance their satisfaction without ignoring the other dimensions such as cost and ease of use. Gaining user satisfaction will be a valued advantage to counter competitive challenges especially in the era of Industry Revolution 4.0 (IR4.0). In IR4.0, it is accepted that e-service quality is becoming the utmost significant aspect of business accomplishment mainly for the banking service providers to attain competitive edge, and establish user satisfaction as well as user loyalty.

B.   Research Limitations and Future Suggestions

It is recommended for further studies to be carried out in other areas such as hospitality and others to investigate whether there are any similarities in the findings to indicate that e-service quality critically and significantly influences user satisfaction. Furthermore, future research should be conducted using different methodologies such as by utilising the longitudinal method in investigating the relationship between e-service quality and user satisfaction. Additionally, future researchers also can utilise the qualitative approach namely interviews in gathering the research data on the issues of interest. Lastly, future researchers should enlarge the sample size to ensure the generalisability of the findings.

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