

Perceived e-service quality and e-store loyalty: The moderated mediating effect of webpage aesthetics and e-customer satisfaction



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ABSTRACT

As more firms switch their competition from brick and mortar model to an online model, it makes the e-services provided by firms highly competitive. Thus, making customers loyal to the e-store is much more challenging than ever. There are studies that examined the relationship between service quality, customer satisfaction, and firm loyalty. However, little attention has been paid to the e-store context. Based on data collected from Malaysian online buyers, this study examines the relationships among webpage aesthetics, perceived e-service quality, e-customer satisfaction, and e-store royalty. In addition, this study also addresses the moderating effect of webpage aesthetics on the relationship between service quality and customer satisfaction, which needs further exploration. The findings show that perceived e-service quality has an impact on e-customer satisfaction, which in turn, affects the e-store royalty. The findings also reveal that webpage aesthetic enhances the relationship between perceived e-service quality and e-customer satisfaction.

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1. Introduction

Due to the advancement of technology, firms' competition landscape has switched from the brick and mortar model to an online model. More and more firms engage in providing e-services. Thus it makes competition among firms intense. On the other hand, because of the advancement of mobile technology, it provides customers more opportunities to find a competing offer from other e-stores with just a few clicks (Shankar et al., 2003). As a result, making customers loyal to the e-store is much more challenging compared to brick-and-mortar shops (Harris and Goode, 2004). To resolve the issue, satisfying customers and making them loyal to the firm has become the top agenda of e-retailers (Otim and Grover, 2010; Polo et al., 2011). Hence, it is critical for e-retailers to identify the factors which influence the royalty of customers (Cristobal et al., 2007). There are plenty of studies focused on store loyalty (Gronholdt et al., 2000;

Salanova et al., 2005; Bowen and Chen, 2001; Kandampully and Suhartanto, 2000). However, not many of them studied the e-store context.

Research reveals that service quality and customer satisfaction are pivotal to e-store success (Holloway, 2003; Szymanski and Henard, 2001; Oliver, 1997). On the other hand, some scholars do not agree either customer loyalty or retention is the consequence of customer satisfaction. The reason is the increased satisfaction will not lead to a high level of loyalty to one's firm. In other words, dissatisfied customers do often stay with the same retailer (Burnham et al., 2003). Keaveney (1995) did reveal that satisfied customers may not stay loyal to a store. And they will not buy more from a given retailer (Seiders et al., 2005). Hence, the relationship between consumer satisfaction and loyalty is still arguable and not clear (Dagger and David, 2012). As a result, it is vital to understand the relationship between customer satisfaction and e-store loyalty from an e-business context. On the other hand, it has plenty of studies focus on the relationship between service quality and customer satisfaction (Caruana, 2002), little attention has been paid to the e-store context (Chau and Ngai, 2010).

Researchers agreed that aesthetics is one of the key determinants of customers' behavior. Extant studies examined the relationship among the aesthetics, perceived e-service quality, and e-

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customer satisfaction, and e-store loyalty in the developed countries (Wang et al., 2011; Peng et al., 2017), there is a lack of research on the potential impacts of these types of relationships in developing nations. Cultural differences between developed nations and developing nations might lead to different consumer behaviors, and it is evident in Hofstede and Bond (1984). Thus, it is important to explore the effect of aesthetics in a collectivist culture such as Malaysia. In addition, understanding the role of aesthetics in webpage design is also important to outperform the competitors.

Filling the gaps as mentioned above, this study aims to first study the relationship between the perceived e-service quality and e-customer satisfaction. Second, to examine the relationship between e-customer satisfaction and e-store royalty. Third, to test the mediating effect of e-customer satisfaction on the relationship between perceived e-service quality and e-store royalty. Lastly, to explore the moderating effect of webpage aesthetic on the relationship between perceived e-service quality and e-customer satisfaction.

In order to meet the above-mentioned objectives, a review of related literature is first presented. Second, the research framework and the key research hypotheses are developed. Third, the research methodology and data analysis are discussed. Fourth, it follows by the discussion and conclusion of the findings. Lastly, research limitations and future research directions are discussed.

2. Literature review and hypotheses development

To fill the gaps identified in the previous section, a research framework, as shown in Fig. 1, has been developed to address the gaps.

2.1. Perceived e-service quality and e-customer satisfaction

Chau and Ngai (2010) found that extant studies had examined the impact of service quality and customer satisfaction. However, few studies focus on the topic in an e-commerce context. As the importance of e-business is increasing (Yang et al., 2004), it is vital to study the impact of service quality and customer satisfaction in an online business context. There is a different model developed by researchers to explain the customer satisfaction. Oliver's (1980) expectation disconfirmation model tells us that customers are satisfied if the value of the product or service exceeds their expectations. The expectation of customers towards a product or service is the standard they use to measure satisfaction. However, Tse and Wilton (1988) found that perceived performance outweighs the expectation in determining customer satisfaction. In this study, the definition of online customer satisfaction is building on Tse and Wilton (1988) model, which it is defined as "overall contentment

with the online experience, including access to information, a positive navigation experience, and perception of a well-designed website" (Cyr, 2008). E-satisfaction is the customer's impression and evaluation of the attributes owned by the website (Jin and Park, 2006). Lee and Hwan (2005) and Gonzalez et al. (2007) emphasized that customer's perception of service quality as important predictors of satisfaction/dissatisfaction. As a result, satisfying customers may not be sufficient to win the game in the market, what important most is the firm has to enhance customer's perception of overall service quality as these two constructs are highly correlated (Sureshchandar et al., 2002; Sivadas and Baker-Prewitt, 2000; Oh, 1999). When customers have a high level of perceived service quality, they are satisfied and will make a favorable assessment of the firm and share it with others (Sivadas and Baker-Prewitt, 2000). These arguments lead to:

H1: Perceived e-service quality positively affects e-customer satisfaction

2.2. E-customer satisfaction and e-store royalty

The survival and growth of firms are closely correlated to customer loyalty (Kim et al., 2004). Thus, it is important for firms to address the issue. One of the key factors which influence customer loyalty is customer satisfaction (Lee et al., 2001; Kim et al., 2004; Gronholdt et al., 2000; Salanova et al., 2005; Bowen and Chen, 2001; Kandampully and Suhartanto, 2000). Customer satisfaction is defined as the positive intention and positive attitude towards behavior, where behavior includes actions such as repeat purchases and online transactions (Oliver, 1997). If the customers get a higher level of satisfaction toward a store when the stores' performance increases, they tend to make repeat purchases from the same store. Thus, it is said that higher levels of satisfaction relate to higher levels of loyalty (Kim et al., 2004; Caruana, 2002). Therefore, it is postulated as:

H2: E-customer satisfaction positively affects e-store royalty.

H3: E-customer satisfaction mediates the relationship between perceived e-service quality and e-store loyalty.

2.3. Aesthetics

Aesthetics is defined as the "philosophy of beauty" (Dickie, 1997). In the e-store context, aesthetics refer to the combination of webpage various attributes and elements which give the user a beautiful impression (Chang et al., 2014). The e-customers can only complete their transaction in a more effective and efficient way through the quality of online information about the service and products desired. Thus, it is evident that a well-organized, readable, user-friendly web page is essential to the e-customer in making purchasing decisions. According

to Szymanski and Hise (2000), the level of satisfaction of the e-customer increases when they are presented with a well-organized webpage. It is well known that when intrinsic human needs are satisfied, the positive emotions of humans will increase as well (Maslow, 1970). When e-customers are presented with a well-organized, legible, user-friendly webpage, their positive emotions will increase, which ultimately leads to a higher level of satisfaction even if they do not buy from the e-store (Lindgaard and Dudek, 2003). Heijden et al. (2003) found that the attractiveness of online visual will have a positive impact on user enjoyment. Webpage aesthetics will also enhance perceived e-service

quality (Yoo and Donthu, 2001). In addition, webpage aesthetics are also correlated positively with perceived webpage usability. It determines the quality of websites as perceived by users (Lavie and Tractinsky, 2004). It is because a well-organized, legible, and user-friendly will provide the users with a pleasant experience in getting the transaction done in a more efficient way. Based on the argument, it is postulated as:

H4: Aesthetic strengthens the relationship between perceived e-service quality and e-customer satisfaction.

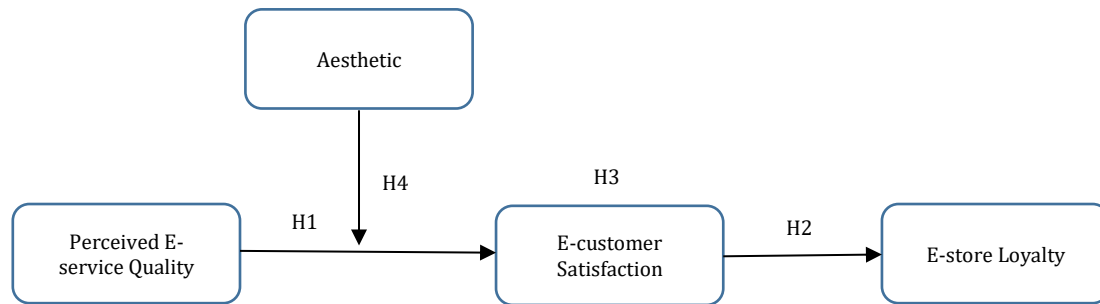


Fig 1: Research framework

3. Methodology

The e-store loyalty of Malaysian online shoppers was of interest in this study. Thus, both the hard copy and online survey form were administered to online shoppers in Malaysia to collect data needed for the study. The survey questionnaire consisted of six parts that capture the data regarding the e-store shoppers' background, aesthetic, perceived e-service quality, e-customer satisfaction, and e-store loyalty.

Items measuring the variables in the model were all adapted from previous studies and were shown in Table 1. Five-point Likert scores ranging from 1 as "Strongly Disagree" to 5 as "Strongly Agree" were used in the questionnaire. The survey questionnaires were sent to the online shopper through both hard copy and online survey forms in Malaysia. A total of 409 usable responses were received.

Table 1: The sources of the items of the model variables

Variables	Items	Sources
Aesthetic (ATC)	The home page of my favorite e-store is well organized.	Wang et al. (2011)
	The home page of my favorite e-store is ordered.	
	The home page of my favorite e-store is legible.	
	The home page of my favorite e-store is fascinating.	
	The home page of my favorite e-store is creative.	
E-customer Satisfaction (SAT)	The home page of my favorite e-store is impressive.	Gao and Bai (2014)
	I am satisfied with the performance of this website.	
	I am pleased with the experience of using this website.	
	This website does a good job of satisfying my needs.	
Perceived E-service Quality (PSQ)	My online transactions are always accurate.	Wang et al. (2011)
	The company quickly resolves the problems I encounter.	
	The company employees properly handle any problems that arise.	
	The organization and structure of online content are easy to follow.	
	The company provides a wide range of product packages.	
E-store Loyalty (LOY)	The company will not misuse my personal information.	Flavián et al. (2006)
	I visit this website more frequently than others of the same category.	
	This is the website where I purchase the majority of the products and services in this Internet category.	
	This is my favorite site for purchasing the products and services in this Internet category.	
	Not counting this website, in the last few months, I have visited very few sites that offer similar products and services.	
	The frequency with which I visit other websites that offer similar products and services is much less.	
	I don't usually purchase products and services from this category from other websites.	

Table 2 summarizes the background of the respondents. SPSS 25 and Process V.3.1 were used in analyzing the data collected. The statistical

techniques used in the study include factor analysis, Cronbach's alpha, correlation, multiple regression, and bootstrap mediating and moderating effect.

Table 2: Background of the respondents

Demographic Variables		Frequency	Percentage (%)
Gender	Male	187	45.70
	Female	222	54.30
Age	Below 24	130	31.80
	25-44	234	57.20
	45 and above	45	11.00
Race	Malay	211	51.60
	Chinese	149	36.40
	Indian	49	12.00
Occupation	Studying	125	30.60
	Unskilled Worker	10	2.40
	Skilled Worker	149	36.40
	Business	67	16.40
	Housewife	32	7.80
	others	26	5.50
Education	Secondary and below	54	13.20
	Diploma	129	29.40
	Bachelor Degree	171	41.80
	Master Degree	44	10.80
	Ph.D	20	4.90

4. Findings

A total of 409 responses who have engaged in one online purchase over the past 12 months were collected (Hasan, 2016). Among them, 222 were female compared to 187 males. The majority of the respondents were aged 24 to 44, which consists of 234. As for the education of the respondents, most of them possess diploma level and above, which make up of 354. Details of respondents' backgrounds are shown in Table 2.

Table 3 shows the factor loading for all constructs items. The factor loading of all the model constructs items is more than 0.4. It shows all the items adapted were valid. While, for the reliability of the constructs, as shown in Table 4, the Cronbach's alpha of all the constructs are all above 0.6 and the corrected item-total correlation are all above 0.30 (Wang and Ahmed, 2004; Jamaluddin et al., 2009). Thus, all the constructs reach the threshold.

Table 3: Factor loading

Item	Component			
	1	2	3	4
ATC1	0.699			
ATC2	0.687			
ATC3	0.634			
ATC5	0.612			
ATC6	0.614			
SAT1		0.865		
SAT2		0.888		
SAT3		0.862		
PSQ1			0.769	
PSQ2			0.869	
PSQ3			0.853	
PSQ4			0.842	
PSQ5			0.807	
PSQ6			0.821	
LOY1				0.815
LOY2				0.813
LOY3				0.836
LOY4				0.802
LOY5				0.780
LOY6				0.640

Table 4: Cronbach's alpha and corrected item-total correlation

Item	Corrected Item-Total Correlation	Cronbach Alpha
ATC1	0.420	0.660
ATC2	0.481	
ATC3	0.458	
ATC5	0.337	
ATC6	0.376	
SAT1	0.694	0.841
SAT2	0.735	
SAT3	0.691	
PSQ1	0.673	
PSQ2	0.799	
PSQ3	0.776	0.907
PSQ4	0.761	
PSQ5	0.720	
PSQ6	0.735	
LOY1	0.714	
LOY2	0.703	
LOY3	0.730	
LOY4	0.689	
LOY5	0.668	
LOY6	0.524	

As for the correlation of the model variables, results show that all the model variables are statistically significantly correlated to each other at $p < 0.01$. The lowest r is 0.461, which is the strength between aesthetic and e-customer satisfaction, while the highest r is 0.652, which is the effect between perceived e-service satisfaction and e-store loyalty. The results also show that the model does not suffer from multicollinearity effect as all the r for independent variables are less than 0.8. The means of all constructs are range from 3.655 to 3.969. It shows that respondents are quite happy with the aesthetic, e-service satisfaction. At the same time, the loyalty level of respondents toward the e-store is high as well. Details of correlation are shown in Table 5.

H1 examines the relationship between Perceived e-service quality and e-customer satisfaction. The result shows that the hypothesis is statistically supported as the 95% confidence level for mean

LLCI and ULCI, 0.477 and 1.243, do not cross the zero. Thus, perceived e-service quality is positively related to e-customer satisfaction. As for H2, the relationship of E-customer satisfaction and e-store royalty is also statistically significant at $p < 0.01$, in which the LLCI and ULCI are 0.118 and 0.271. Hence, it is proven that E-customer satisfaction positively affects e-store royalty. H3, which examines the indirect effect of e-customer satisfaction on the relationship between perceived e-service quality and e-store loyalty, is also statistically supported as the LLCI and ULCI are 0.118 and 0.271. Thus, it is confirmed that Perceived e-served quality will have an impact on e-store loyalty through perceived e-customer satisfaction. H4 the indirect effect of aesthetic on the relationship between perceived e-service quality and e-customer satisfaction is also significant at $p < 0.01$, which the LLCI and ULCI are -0.237 and -0.022. Hence, it is proven that aesthetics will strengthen the relationship between perceived e-service quality and e-customer. Details of the results of the hypotheses are shown in Table 6.

Table 5: Correlation results

	Mean	Std. Deviation	1	2	3	4
ATC	3.655	0.551	1			
SAT	3.696	0.729	.461**	1		
PSQ	3.969	0.728	.571**	.542**	1	
LOY	3.764	0.654	.537**	.507**	.652**	1

** Correlation is significant at the 0.01 level (2-tailed)

Table 6: Direct and indirect effect of model variables (5000 bootstrap sample)

	95% CI for Mean			
	β	SE	LLCI	ULCI
Direct effect				
PSQ->SAT	0.860	0.195	0.477	1.243
SAT->LOY	0.195	0.039	0.118	0.271
Indirect effect				
PSQ x ATC->SAT	-0.129	0.055	-0.237	-0.022
PSQ->SAT->LOY	0.195	0.039	0.118	0.271
PSQ x ATC->SAT->LOY	-0.025	0.017	-0.065	0.001

$p < 0.01$

5. Discussion and conclusions

The aims of this study are to examine the relationships among perceived e-service quality, aesthetics, e-customer satisfaction, and e-store loyalty. The findings show that the relationship between perceived e-service qualities is significantly related to e-customer satisfaction. It is in line with Sureshchandar et al. (2002), Sivadas and Baker-Prewitt (2000), and Oh (1999). It is because customers will be easily satisfied if the value of the product or services exceeds their expectations (Oliver, 1980). The findings also reveal that e-customer satisfaction is positively related to e-store loyalty. The result is consistent with the results of Lee et al. (2001), Kim et al. (2004), Gronholdt et al. (2000), Salanova et al. (2005), Bowen and Chen (2001), and Kandampully and Suhartanto (2000). If the customers get a higher level of satisfaction toward a store when the stores' performance increases, they tend to make repeat purchases from the same store. Thus, it is said that higher levels of

satisfaction relate to higher levels of loyalty (Kim et al., 2004; Caruana, 2002). The findings of the study show that e-customer satisfaction does mediate the relationship between perceived e-service quality and e-store loyalty. In other words, perceived e-service quality can only enhance the level of e-store loyalty through e-customer satisfaction. The moderating effect of webpage aesthetics on the relationship between perceived e-service quality and e-customer satisfaction also supported by the findings. Webpage aesthetics strengthen the impact of perceived e-service quality and e-customer satisfaction. A well organized, legible, and a user-friendly webpage will give a good impression to the customer (Chang et al., 2014). They will have perceived that the webpage is of use to them. On the other hand, when e-customers are presented with a well-organized, legible, user-friendly webpage, their positive emotions will increase, which ultimately leads to a higher level of satisfaction even if they do not buy from the (Lindgaard and Dudek, 2003).

5.1. Theoretical contributions

This study has made several contributions to knowledge. First, it is argued that there are plenty of studies focused on store loyalty (Gronholdt et al., 2000; Salanova et al., 2005; Bowen and Chen, 2001; Kandampully and Suhartanto, 2000). However, not many of them studied the e-store context. This study broadens the knowledge based on e-commerce by examined customer loyalty in an e-commerce context. Second, the relationship between consumer satisfaction and customer loyalty is still arguable and not clear (Dagger and David, 2012). Some studies reveal that customer satisfaction is positively related to customer loyalty. However, in other studies, it reveals that it is not the case (Burnham et al., 2003). This study has reexamined the relationship between customer satisfaction and customer loyalty in an e-commerce context. It provides more insight into the relationship between customer satisfaction and customer loyalty. Lastly, it does have studies focuses on webpage aesthetics (Wang et al., 2011; Peng et al., 2017). However, most of those studies are done in developed countries. Cultural differences between developed nations and developing nations might lead to different consumer behaviors (Hofstede and Bond, 1984). It is important to explore the effect of aesthetics in a collectivist culture such as Malaysia. This study has contributed the broaden the knowledge-based by providing evidence from developing countries.

5.2. Managerial implications

To outperform the competitors, firms have to identify a series of key success factors. Among them, customer satisfaction and customer loyalty play an important role to determine the survival of the firm. Thus, to enhance customer satisfaction and customer loyalty becomes an utmost task to the firm. In the e-business context, the customer has to go through the

online webpage to do the transaction. Thus, webpage aesthetics play an important role in the survival of the firm as well. The firm has the design of a well-organized, legible and user-friendly webpage to enhance the perceived value of the customer to browse the webpage. Only the webpage which provides useful information and it is user-friendly will lead to higher customer satisfaction. Customer loyalty is built on customer satisfaction. Apparently, webpage aesthetics are important to customer loyalty and ultimately determine the success and failure of firms.

5.3. Limitations and future research directions

No study comes with no limitations. The limitations of this study include, first, some of the researchers argued that the webpage aesthetic could be divided into two different dimensions, which are an aesthetic formality and aesthetic appeal (Schenkman and Jönsson, 2000). However, this study only tested aesthetic as the construct. It did not test the impact of aesthetic dimensions, aesthetic formality, and appeal, on perceived e-service quality and e-customer satisfaction. A future study might consider testing the impact of the dimensions of webpage aesthetics on model variables. Second, the findings of the study are based on Malaysian online buyer perception. The findings of the study might not be able to generalize to another context. A future study might examine the model in another context. Third, small data studies might not fully reflect the behavior of the population. It is advised to test the model by using big sample data. Lastly, according to Hasan (2016), there are various types of a webpage, e.g., business webpage and non-business webpage. This study only focuses on the online business website. Getting a better insight into the issue, future researches can test the relationships of the model variables on a non-business website.

Compliance with ethical standards

Conflict of interest

The authors declare that they have no conflict of interest.

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