Customers' Satisfaction on the Quality of E-Commerce

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Received: 25 October 2019 Revised from: 15 November 2019 Accepted : 3 December 2019
Published: 30 December 2019

Abstract

As an important profit driver for business, e-commerce gives various opportunities to small and huge companies to sustain. Customer will visit e-commerce repeatedly when they feel satisfy with e-commerce services. Hence, this study aims to investigate the impacts of service quality on e-commerce context. Information quality, e-service quality, security and usefulness were predicted to have positive relationship with the customers' satisfaction. Using purposive sampling techniques, 388 questionnaires were collected from the customers who had experienced in using Lazada and Shopee e-commerce website. PLS-SEM was used to analyse the collected data and test the proposed research hypotheses. The results indicate that information quality, e-service quality and security have positive relationship with user satisfaction, while usefulness is not significant. This finding could be used as a guideline for the companies to improve their e-commerce services.

Keywords: Information Quality, E-Service Quality, Usefulness, Security, E-Commerce, Customer Satisfaction.

Introduction

Nowadays, people spend more time on the Internet to manage their daily life. With the fast enhancement of information technology, E-Commerce plays a major role in almost all context of life. It reshaped the marketplace from a traditional to modern society. Therefore, the dynamic e-business has developed the advance e-commerce by abridging the process of business (Gajendra and Wang, 2013). E-Commerce can transform businesses from local to international platform as it provides opportunities to export goods and service widely. (Sobihah M., et al., 2015).

The emergence of E-Commerce changes people purchase behaviour from buying at physical premises to online shopping. It also can give more benefit to the e-commerce consumers in dealing with constant task that requires financial transactions. In Malaysia, the percentage of Internet users increased from 76.9% in 2016 to 87.4% in 2018. The percentage of online shoppers among Malaysian Internet users has increased to 53.3% in 2018 from 48.8% in 2016 (Malaysian Communications and Multimedia Commission, 2018). Based on Information and Communication Technology Satellite Account 2018, the trend of e-commerce market in Malaysia shows its inclination when the value added of e-commerce to gross domestic product (GDP) increased to RM115.5 billion in 2018 compared to RM107.1 in 2017. E-commerce become more popular among Malaysian with the effort from the government in providing and enhancing the information facilities in this country.

Previous studies found the evidence that one of the strategies to satisfy and retain the customers is by offering good e-commerce services (Yakov et al, 2005, Fang and Holsapple, 2007). Therefore, this paper attempts to identify the factors affecting the customer satisfaction of the e-commerce website in Malaysia.

Review of The Literature

Information Quality and E-Commerce Customer Satisfaction

Information quality refers to e-commerce content issues and covers the completeness, accuracy, format, and currency aspects of information delivered by e-commerce marketplaces (Wixom and Todd, 2005). It measures the desired characteristics of an e-commerce website (Sharma, 2015). Online information quality of e-commerce websites can be viewed from several perspectives, such as product quality, systems as product, service quality of provider, software product quality, system design, quality of the human-computer interaction, and more (Sharma, 2015). Website quality is seen as a necessary measure for success, when assessing and evaluating website use (Kuo and Chen, 2011). With complete information and feel pleasing in visit a website will make visitors feel satisfaction in the information and create sense to buy obtained after visiting (Jauhari, Kusumawati, and Nuralam, 2019). Satisfaction referred in term of outcome by comparing the prior expectation and the perceived performance for each antecedent factor in order to measure the attitude (satisfaction/pleasing) of the respondents (Taweerat, Settapong, Navneet, & Jesada, 2014). Satisfaction itself not only for goods but also about services, for example from an online store or e-commerce, online store or e-commerce that provides satisfaction information and service on their website about goods they sold will create a feeling purchase intention of online store (Jauhari et al., 2019). If the information provided by the website is reliable and accurate, then this will increase online customer satisfaction and trust which will lead the customer to make the initial purchase. A study conducted by Eid (2011) stated that information quality has high significant effect on e-commerce customer satisfaction. This is supported by the research of Faizan (2016) that found website information quality has effective influence to satisfy. Recent study by Jauhari et al., (2019) shows that consumers feel satisfied toward Lazada because Lazada give the profesional information to consumers. Based on the above argument, the following hypothesis can be developed:

H1: There is a significant relationship between information quality of e-commerce and customer satisfaction

E-Service Quality and E-Commerce Customer Satisfaction

Service quality has received significant attention from both practitioners and academics (Shi et al., 2018). With the rapid development of electronic commerce, an increasing number of scholars have focused on research regarding service quality in the online market. E-service quality is therefore a key determinant of success in the e-commerce environment (Santos, 2003). Piercy (2014) defined online service quality as "comprised the pre-purchase, purchase, and post-purchase activities involved in the evaluation, selection, purchase and fulfillment of goods and/or services where the purchase transaction is performed through a website interface" (p. 748). Vida and Jonas (2011) added that e-service quality is defined by the consumers' feelings about the level of service while browsing the website, placing an order, making a payment, or otherwise interacting with the online. The efficiency of a website can be judged on the basis of satisfaction generated by customers while surfing (Sharma & Aggarwal, 2019). E-service quality measures the overall support delivered by online providers regardless of whether the support is delivered by the information systems (IS)

department, a new organizational unit, or is outsourced to an internet service provider (DeLone and McLean, 2004). Recent studies have enunciated the importance of website quality dimensions to determine the online experience of browser with the website (Yoo, Kim, & Sanders, 2015). Previous studies have emphasized the direct impact of service quality on customer satisfaction, which results in their purchasing intention (Chen and Cheng, 2009). Therefore, there was a requirement for developing measurement for service quality in e-commerce. In order to increase market share in the face of high competition, every aspect of the services offered on websites must be improved. The quality of website service is related to product promotion, an efficient and rewarding shopping experience, and reliable product or service delivery. Sureshchandar Chandrasekharan, and Anantharaman, (2002) also believe that service quality and customer satisfaction go hand in hand and that increase in one can most likely cause increase in the other and because of this link the importance of service quality on the Internet cannot be understated. The results by Alotaibi, Lee, Choi, & Ahn (2005) indicated that there is strong positively significant relationship between ecommerce service quality and customer satisfaction. Studies Eid (2011) supported by Hsu, Chang, and Chen (2012) found out that e-commerce service quality has positive effect on e-commerce customer satisfaction. Hence, the following hypothesis was developed based on the above mentioned arguments and explanations:

H2: There is a significant relationship between e-service quality of e-commerce and customer satisfaction

Usefulness and E-Commerce Customer Satisfaction

Operators of e-commerce websites should not focus only on pricing strategies to enhance competitiveness. It is more important to maintain a high level of quality as well as usefulness. Quality includes a relatively easy to remember web address, well-organized, well-structured, and easy-to-follow catalogues, site navigability, and concise and understandable contents, terms, and conditions. Besides the search engine, a good website user interface should provide other functions which not only draw consumer attention but also simplify the purchasing process. Kim, Jin and Swinney (2009) conceptualized usefulness in terms of whether a website improves productivity, effectiveness, and performance in shopping. Improving the quality of website services to meet customer needs has been the key to success when it comes to e-commerce websites (Kuo and Chen, 2011). However, it is impossible to improve website quality if the needs of internet consumers cannot be understood. In e-commerce research, satisfaction is conceptualized as an affective state (Kim et al., 2009), feelings (Devaraj et al., 2002), pleasantness (Deng & Poole, 2010), and enjoyment (Jiang & Benbasat, 2007b) and is operationalized with emotion-laden adjectives such as “fun” and “interesting”. In order to make a successful e-commerce website, online stores should actively seek ways to improve their websites (Liu and Arnett, 2000; Flores and Volle, 2005). It was also shown that the factors affecting user satisfaction of websites included control, efficiency, and helpfulness, which is indicated by the ease for the user to navigate through the website to find the information they need at a reasonable speed and the offering of assistance for finding information and navigating. Thus, we propose the following hypothesis:

H3: There is a significant relationship between usefulness of e-commerce and customer satisfaction

Security and E-Commerce Customer Satisfaction

Security is basically an important factor usually taken into consideration by online customers. According to Agag (2017), it is the most often mentioned ethical concern regarding marketing on the Internet. Security represents the capability of an e-commerce system to assure the customers that there is no breach of customers' personal information (Himanshu & Anu, 2019) such as information theft, theft of service, and corruption of data (Agag, 2017) while making a transaction. A high level of security provided by an e-commerce website can lead to satisfying intensions which influence satisfaction behavior. Few researchers found that security has a positive relationship with buyer satisfaction; this is empirically confirmed in most of the extant literature (Kim et al., 2009; Eid, 2011; Kim et al., 2011; Soledad Janita, & Javier Miranda, 2013; Ponte et al. 2015; Agag & El-Masry 2016b; Agag 2016). Thus, we propose the following hypothesis:

H4: There is a significant relationship between security of e-commerce and customer satisfaction

Research Methodology

The instruments developed in this survey form with 24 items. The associations among the constructs hypothesized for this conceptual model were adapted from related literature on the topic, as described in Fig. 1 which comprises information quality and e-service quality (Armstrong, et al., 2005), usefulness (Agarwal, & Karahanna, 2000)., security (Flavian & Guinaliu, 2006) and customer satisfaction(Alshibly, 2014).This conceptual model assesses the associations which present a set of four relevant hypotheses for testing. Each construct was subject to measurements with the use of the five-point Likert scale.

Using a purposive sampling approach, the questionnaire was distributed among customers who had experience in using Lazada and Shopee websites. The sample size was calculated using G-Power (Faul, Erdfelder, Lang, & Buchner, 2007). Following (Jacob Cohen, 1992) on the power of 0.95, with an effect size of 0.15, a sample size of 129 is required to test the model with four predictors. To minimize possible complications arising from a small sample size, a total of 388 samples were collected. Survey data was gathered through the personal delivery of self-administered survey forms.

Table I indicates the respondents' demographics, in which 37.4% of the respondents were male, and 62.6% of the respondents were females. Most of the respondent's age 18-25 years old (44.8%) followed by 22.7% of them aged between 26-30 years old. The remaining are 31.-35 years old (14.9%), 36-40 years old (7.5%), and 41-45 years old (6.4%). Most respondents agreed that they frequently visit the online shopping sites with at least 21.9% visit the site daily, and 17% stated they visit the site once a week. Approximately 19.1% of open the sites twice a week, 18.6% visited the site monthly, and the remainder rarely visited the online shopping sites (23.5%). Aimed at their reason for choosing online shopping, the majority of the respondents stated that ease of use plays significant reasons for the frequently visit online shopping sites. Others stated that the speed (9.3%), features (17%), look and feel (9%), and app navigation (10.1%) are among the reasons for online shopping participation.

Table I Demographic Profiles

		Frequency	Percentage (%)
Gender	Male	145	37.4
	Female	243	62.6
Age	18-25 years	174	44.8
	26-30 years	88	22.7
	31-35 years	58	14.9
	36-40 years	29	7.5
	41-45 years	25	6.4
Frequent of visiting online shopping website	Everyday	85	21.9
	Once a week	66	17.0
	Twice a week	74	19.1
	Monthly	72	18.6
	Not Often	91	23.5
The reason of choosing Online Shopping	Ease of use	212	54.6
	Speed	36	9.3
	Features	66	17.0
	Look and Feel	35	9.0
	App Navigation	39	10.1

Data Analysis and Results

This study used PLS-SEM to examine the hypotheses using the SmartPLS 3.0 software (Ringle, Wende, & Becker, 2015). Compared with covariance-based SEM, PLS has no requirement for the multivariate normality of data distributions or large samples (Hair, Risher, Sarstedt, & Ringle, 2019). Thus, it is suitable for the current study. The proposed research model using a two-stage approach in which examined the measurement model, followed by the structural model (Anderson & Gerbing, 1988). The measurement model tested on validity and reliability of the measures. Subsequently, the structural model was examined to test the hypothesized relationship). Moreover, the bootstrapping method (1000 resamples) was utilized (Hair, Hult, Ringle, & Sarstedt, 2017) in order to assess the loadings and path coefficients' significance.

Measurement Model

The measurement model is assessed in terms of convergent validity and discriminant validity. Convergent validity uses three recommended standards to assess the measuring model: all indicator factor loading values should exceed 0.6 (Byrne, 2016); composite reliability (CR) should exceed 0.6 (Bagozzi & Yi, 1988); and the average variance extracted (AVE) of each construct should exceed 0.5 (Fornell & Larcker, 1981). The analysis results showed that the indicator factor loading of each item in the measuring model exceeded 0.6. AVE of constructs ranged from 0.618 to 0.824. CR ranged from 0.865 to 0.953. Therefore, all figures meet the conditions for convergent validity as illustrate in Table 2.

Table 2 Measurement Model

Construct	Items	Loadings	AVE	CR
Customer Satisfaction	CS1	0.835	0.770	0.943
	CS2	0.908		
	CS3	0.870		
	CS4	0.886		
	CS5	0.887		
E-Service Quality	ESQ1	0.902	0.824	0.934
	ESQ2	0.923		
	ESQ3	0.898		
Information Quality	IQ1	0.800	0.715	0.926
	IQ2	0.838		
	IQ3	0.858		
	IQ4	0.867		
	IQ5	0.865		
Security	SEC1	0.814	0.745	0.953
	SEC2	0.851		
	SEC3	0.882		
	SEC4	0.873		
	SEC5	0.889		
	SEC6	0.875		
	SEC7	0.855		
Usefulness	USEF1	0.797	0.618	0.865
	USEF2	0.870		
	USEF3	0.798		
	USEF4	0.666		

Subsequently, the discriminant validity of the model is evaluated by factor loadings and comparisons between the square root of AVEs and the inter-construct correlations. First, the loading of each item on its assigned latent variable should be larger than its loading on other constructs (Fornell & Larcker, 1981). Table 3 showed that the square roots of AVE were all greater than the off-diagonal correlation coefficients in the corresponding rows and columns.

Table 3 Discriminant Validity

	1	*2*	*3*	*4*	*5*
Customer Satisfaction	**0.877**				
E-Service Quality	0.602	**0.908**			
Information Quality	0.575	0.706	**0.846**		
Security	0.608	0.639	0.689	**0.863**	
Usefulness	0.596	0.756	0.76	0.746	**0.786**

Note: Values in the diagonal (bolded) represent the square root of the AVE, whereas the off-diagonals are correlations.

Structural Model

Prior to establishing the measurement model, the analysis then shifted to the structural model evaluation. As seen in Table IV, a collinearity test measuring the variance inflation factor (VIF) values for each of the constructs are examined. A collinearity test is conducted to test the presence of highly correlated constructs. Using the cut-off value by (Hair et al., 2017) the results showed that the inner VIF values of all constructs ranged from 2.607 to

3.624, which is well below the suggested threshold of 5, indicating, multicollinearity is not a concern in this study,

To test the significance level, a bootstrapping method (1000 resamples) are conducted. The PLS results of the full model are presented as Table IV depicts the results of the hypothesized model test, demonstrated with the variance explained (R^2 value) of the dependent variable, path coefficients (beta and significance) and t-value for each of the construct paths. In this study, four direct hypotheses are developed between the constructs. The result shows that e-Service Quality has a positive and significant relationship with customer satisfaction (β= 0.265, t=4.188, p< 0.01), leading support to H1. Information Quality was significantly correlated to user Customer Satisfaction (β=0.123, t=1.894, p<0.05); therefore, H2 is accepted. Security had a positive correlation with Customer Satisfaction (β=0.289, t=4,676, p<0.01), and hence, H3 is accepted. Nevertheless, as for the usefulness, it has an insignificant effect on user satisfaction (β= 0.087, t=1.178); therefore, H4 is unsupported. Overall, the results thus support H1, H2, and H3, while H4 is not supported.

Table IV Hypotheses Testing

Hypothesis	Relationship	Std. Beta	Std. Error	t-value	p-value	Confidence Interval		Decision
						5%	5%	
H1	EServiceQuality -> Customer Satisfaction	0.265	0.063	4.188	p<0.01	0.151	0.362	Supported
H2	Information Quality ->Customer Satisfaction	0.123	0.065	1.894	0.029	0.021	0.23	Supported
H3	Security-> Customer Satisfaction	0.289	0.062	4.676	p<0.01	0.187	0.394	Supported
H4	Usefulness_-> Customer Satisfaction	0.087	0.074	1.178	0.12	-0.032	0.206	Not Supported

The results further revealed how all four exogenous constructs collectively explained the variance in the endogenous construct. As explained by (J Cohen, 1988), the R^2 value ranges from zero to one (e.g., 0.26 substantial, 0.13 moderate, and 0.02 weak) for endogenous latent variables. It can be concluded that the model was able to explain a rather substantial amount (45.8%) of the variance in customer satisfaction. In addition, the predictive relevance of the model is tested. Using the blindfolding procedures, if the Q^2 value is larger than 0, it can be concluded that the model has a predictive relevance towards the endogenous constructs (Hair et al., 2017; Ramayah, Jacky, Chuah, Ting, & Memon, 2018). Overall, the Q^2 value of customer satisfaction are 0.329 indicate the model has sufficient predictive relevance.

Conclusions

The aim of this study is to identify the e-commerce quality factors that affecting Malaysian customer satisfaction. From this study, information quality, e-service quality and security are the three factors that affected the customer satisfaction in Malaysia. The finding is consistent with Eid (2011), Jauhari, Kusumawati, and Nuralam,(2019) and Soledad Janita, & Javier Miranda, (2013) However, from the findings, usefulness is not significant with customer satisfaction.

This study contributes to the research of customer satisfaction in developing countries. It can be used as a guideline for the companies that are using e-commerce platform to improve their service quality.

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