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Consumer Electronics E-retailing: Why the Alliance of Vendors' E-service Quality, Trust and Trustworthiness Matters!

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Abstract

This study focuses on the challenges faced by e-retailers in securing sales from the consumer electronics category, by investigating the influence of electronic service quality on consumers' purchase intentions, with trustworthiness and trust acting as mediators. Empirical findings based on 202 respondents who have purchased consumer electronics online, have shown that trustworthiness and trust play a critical role in mediating the impact of e-service quality on a consumer's purchase intentions. This provides a deeper insight for online retailers to focus on fostering consumer trustworthiness and trust towards the websites in order to increase their purchase intentions.

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1. Introduction

The number of consumers who are inclined to try online shopping is increasing, with the Internet becoming an essential platform for businesses today (Gao, 2011). Despite the fact that the number of Malaysians who use e-commerce websites often intend to purchase airline tickets, tour packages, event tickets and apparel online, their intention to purchase consumer electronics online has remained the lowest (Nielsen, 2014 in Marketing Magazine, 2014). It was reported that the personal electronics category had the lowest sales when compared with other categories and this could be due to the least amount of people buying them online (Nielsen & PayPal Analysis, 2011 in Wong,

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2013).

Much of the past literature has emphasised on the importance of electronic service quality (E-Service Quality) in influencing customer's purchase intention (Kim et al., 2006). Whilst some studies were conducted in the context of consumer electronics, they are limited to only consumer loyalty and customer satisfaction (Wu, 2011). Moreover, important factors such as trustworthiness and trust towards websites were not addressed by the researchers. Thus, this research is aimed to investigate the influence of E-Service Quality on Malaysian Gen Y's purchase intention regarding consumer electronics, with trustworthiness and trust acting as mediators in the study. This research provides an insight into the importance of trustworthiness and trust in influencing consumers' intentions to purchase consumer electronics online, which will then allow the online retailers to make improvements on the E-Service Quality dimensions to better retain and attract customers.

2. Literature Review

2.1. *Theory of Reasoned Action and Service Quality*

Theoretically, Fishbein and Ajzen's (1975, 1980) Theory of Reasoned Action (TRA) explains that an individual's behaviour is influenced by his or her intentions to perform the behaviour. The adoption of TRA in this study can be supported by many examples of past literature that have used TRA in the context of online purchasing to predict behavioural intentions, i.e. Serva et al. (2005) and Gao (2011). In this research, TRA is used to predict consumers' purchase intentions regarding consumer electronics online, based on their attitudes towards performing the behaviour (intention to make a purchase). Consumers' attitudes towards having a purchase intention is developed based on their evaluation of the service quality provided by the websites.

Service quality is a vital marketing strategy for providing excellent service that serves as a competitive advantage for firms. Many researchers have developed service quality measurements for electronic context (Yoo and Donthu, 2001; Parasuraman, Zeithaml and Malhotra, 2005). In this research, the E-S-Qual and E-RecS-Qual scales developed by Parasuraman et al. (2005) are adapted as they are regarded as valid and reliable measurements for e-SQ (Kim et al., 2006). The dimensions that are adapted from the scales include a website's efficiency, fulfilment, system availability, privacy, responsiveness and contact. In addition to this, information quality is incorporated into this study's framework when evaluating E-Service Quality.

2.2. *E-Service Quality dimensions, Trustworthiness, Trust and Purchase Intention*

Parasuraman et al. (2005) defined efficiency of a website as 'the ease and speed of accessing and using the site' (p.8). It is stated that a website's ease of navigation, speed of page download, and a design that facilitates search as well as web accessibility are crucial in affecting the trustworthiness of the website (Cheskin and SA, 1999 in Belanger et al., 2002; Lovgren, 2014).

Cheskin and SA (1999) in Belanger et al. (2002) revealed that fulfilment is a critical component of customer experience which will affect their sense of the website's trustworthiness. It is less likely for consumers to perceive a website as trustworthy if it delays a customer's order delivery and does not have the products in stock that the company claims to have.

The reliability of a website in the form of system availability is critical to ensure that the system has a quick error recovery and to ensure that the operations in the website can be carried out correctly (Liu and Arnett, 2000). Sahadev and Purani (2008) stated that if a website keeps crashing and is filled with technical errors, consumers' level of trust towards the website will decrease and this would further affect their intentions to make a purchase on the website.

It is reported that the display of privacy policies is critical in increasing the trustworthiness of a website (Lovgren, 2014; Belanger et al., 2002). Lovgren (2014) further mentioned that it is important for websites to ensure their privacy policies are as transparent as possible, in order to increase their trustworthiness.

Responsiveness of a site is referred to as 'the effective handling of problems and returns through the site' (Parasuraman et al., 2005, p.8). Horton (2015) mentioned that it is important for websites to provide a convenient and smooth returns policy to develop a trustworthy image among consumers.

The ability to contact a website's customer service agent is critical when consumer faces a problem or has any

query (Kim et al., 2006). Thus, websites that provide contact information which includes a company phone number and e-mail can influence consumers' perceptions of the website's trustworthiness (Lovgren, 2014). The availability of a live person to answer consumer queries and problems will improve the website's interactivity.

Information quality is defined as the degree to which a user believes that a website's information has the attributes of content, accuracy, timeliness, usefulness, completeness and understandability (Rozekhi et al., 2014). Horton (2015) agreed that websites offering detailed and sufficient product information increase consumers' perceptions of trustworthiness. Furthermore, websites that provide sufficient information can promote online trust as users feel safer with the availability of product information (Hsu and Wang, 2008).

Based on the above literature, we derived the following hypotheses:

H1x: x of a website positively influences the trustworthiness of e-commerce websites.

H2x: x of a website positively influences consumers' trust towards e-commerce websites.

H3x: x of a website positively influences consumers' purchase intentions towards consumer electronics online.

Where $x = (a)$ Efficiency; (b) fulfilment; (c) system availability; (d) privacy; (e) responsiveness; (f) contact; and (g) information quality

According to Caldwell and Clapham (2003), consumers' choice to trust is predominantly determined by the trustworthiness of the trustee. It is said that customers are likely to develop their trust towards an online entity when they perceive it as being trustworthy (Zhu and Chen, 2012 in Yu et al., 2015). Furthermore, Kharouf et al. (2014) stated that trustworthiness is an antecedent to trust and consumers' probability of building trust will be heightened if the online retailers display trustworthy characteristics. This can be supported by Serva et al. (2005), who proposed that consumers' perception of trustworthiness leads to trust. Thus, we hypothesised that:

H4: Trustworthiness has a positive influence on trust.

Thamizhvanan and Xavier (2013) stated that it is necessary for online trust to be present when it comes to online shopping. Besides that, Gao (2011) mentioned that it is more likely for consumers to have the intention to purchase on a website if they have a high level of trust towards that website. This is supported by Tatnall (2009) who stated that the likelihood of consumers interacting and engaging in actual transactions with a website is higher if consumers trust the website. Hence, we hypothesised that:

H5: Trust has a positive influence on consumers' purchase intentions regarding consumer electronics online.

As trustworthiness and trust are important variables in the e-commerce context, they are investigated as mediators in this study. The mediation role of trustworthiness can be supported by Caldwell and Clapham (2003), Kharouf et al. (2014) and Yu et al. (2015). Wong (2014) also supported the mediating role of trustworthiness between website quality and customer e-loyalty. He further mentioned that trustworthiness will subsequently lead to consumer trust. Furthermore, Kim and Zhang (2014) proposed that trust in a website's competence mediates the relationship between website quality and purchase intentions. Therefore, we hypothesised that:

H6: Trustworthiness mediates E-Service Quality dimensions and consumers' trust towards e-commerce websites.

H7: Trust mediates E-Service Quality dimensions and consumers' purchase intentions regarding consumer electronics online.

Based on the literature presented, the research framework is displayed in Figure 1. The framework is constructed based on the E-S-Qual and E-RecS-Qual scales by Parasuraman et al. (2005) with an addition of Information Quality. Trustworthiness and Trust are included into the framework to investigate their mediating effect between the E-Service Quality dimensions and consumers' purchase intentions.

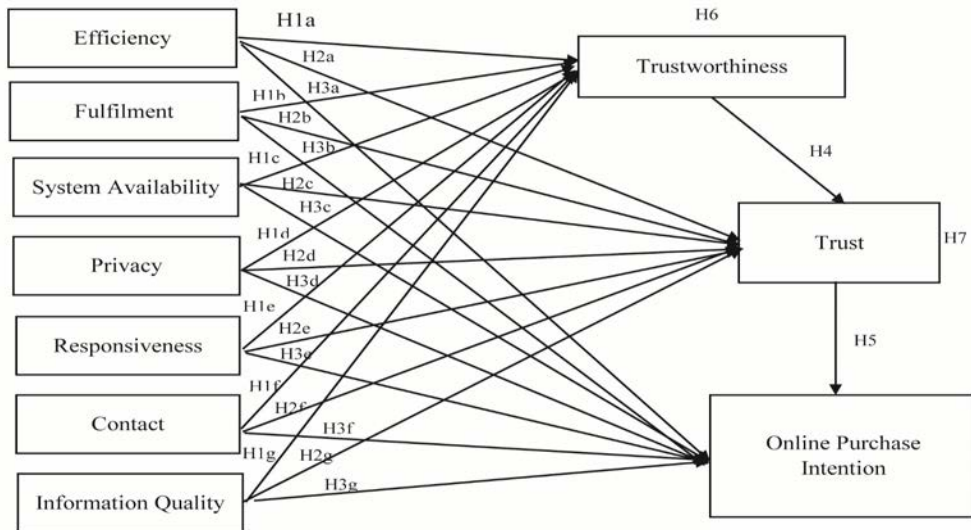


Fig. 1. Research Framework

3. Methodology

We have collected a total of 202 questionnaires via purposive sampling. The questionnaires were distributed to respondents who had purchased consumer electronics from e-commerce websites and were within the age range of 18-34. This age range suggests that the respondents mainly fall under Generation Y, a generation which is perceived to be tech-savvy and often frequents the Internet for online shopping purposes (Valentine and Powers, 2013). The questionnaire for e-service quality was adapted from Parasuraman, Zeithaml and Malhotra (2005), information quality was adapted from Kuan, Bock and Vathanophas (2008); trustworthiness and trust were adapted from Kharouf, Lund and Sekhon (2014); and purchase intention was adapted from Chiu, Wang, Fang and Huang (2014). All questions except the general questions and demographic information were measured using a 7-point Likert scale, ranging from 1=Strongly Disagree to 7=Strongly Agree.

Reliability and validity of the measurements are accessed. Cronbach’s alpha for each variable falls between 0.805 and 0.919. All the variables are reliable as they have Cronbach’s alphas that are greater than the acceptable level of 0.7, which is the threshold set by Nunnally (1978). The assessment of the correlation matrix for possible multicollinearity shows that the correlation of the items ranges between 0.521-0.847, which is within the accepted 0.9 threshold (Hair, 2010), thus the harmful effect of colinearity can be discounted for this study.

4. Results and Findings

As shown in Table 1, only 5 out of the 7 proposed direct relationships between the E-Service Quality dimensions and trustworthiness are significant. These supported dimensions include a website’s efficiency, fulfilment, privacy, responsiveness and contact. The overall R2 value obtained for model 1 is 0.714 and its overall model F is reported at 69.264 with a p-value of 0.000. After determining the significant direct relationships between E-Service Quality and trustworthiness, only the 5 supported hypotheses are further tested for mediation using SPSS macro PROCESS by Hayes (2015). This is because the relationship between the independent variable and the mediating variable needs to be significant in order to test for mediation effect (Baron and Kenny, 1986). It is reported that the mediation role of

trustworthiness between the 5 supported hypotheses (efficiency, fulfilment, privacy, responsiveness and contact) and trust are significant, as zero does not exist between each variable's lower (LLCI) and upper confidence interval (ULCI) as recommended by Loxton (2014).

Table 1. Results of Regression Analysis

	Model 1	Model 2	Model 3	Model 4	Model 5
Variables (E-Service Quality)	TW	TRU	TRU	PI	PI
Direct effects					
Efficiency	0.114*		0.141**		0.076
Fulfilment	0.192***		0.276***		0.335***
System Availability	-0.012		0.038		0.18**
Privacy	0.103**		0.006		0.21
Responsiveness	0.301***		0.328***		0.181***
Contact	0.225***		0.063		0.013
Information Quality	0.03		0.114		0.113
Trustworthiness		0.864***			
Trust				0.766***	
Mediation effects					
Trustworthiness (Efficiency)			0.485		
Trustworthiness (Fulfilment)			0.444		
Trustworthiness (Privacy)			0.489		
Trustworthiness (Responsiveness)			0.432		
Trustworthiness (Contact)			0.515		
Trust (Efficiency)					0.450
Trust (Fulfilment)					0.370
Trust (Responsiveness)					0.429
Overall R²					
E-Service Quality	0.714		0.707		0.545
Trustworthiness		0.717			
Trust				0.511	
Overall model F					
E-Service Quality	69.264***		66.805***		33.233***
Trustworthiness		507.805***			
Trust				208.799***	

Notes: $n=202$. Unstandardised regression coefficients are shown for Direct effects, Overall R² and Overall model F. *significant at the 0.1 level; **significant at the 0.05 level; ***significant at the 0.01 level. Indirect effect values from SPSS macro (PROCESS) are shown for Mediation effects.

In addition to this, Table 1 demonstrates that only 3 out of the 7 proposed direct relationships between the E-Service Quality dimensions and trust are significant. These 3 supported dimensions include a website's efficiency, fulfilment and responsiveness. The overall R² value reported for model 3 is 0.707 and the overall model F obtained is 66.805 with a p-value of 0.000. Likewise, only the 3 supported hypotheses in this model are further tested for mediation effect. Here, the mediation role of trust between the 3 supported hypotheses (efficiency, fulfilment and responsiveness) and consumers' purchase intentions can be easily seen.

As for the direct relationships between the E-Service Quality dimensions and purchase intentions, only 3 out of the 7 proposed hypotheses are supported. These significant hypotheses include a website's fulfilment, system availability and responsiveness. The overall R² value obtained for model 5 is 0.545 and its overall model F is reported at 33.233 with a p-value of 0.000. Besides this, table 3 shows that there is a significant direct relationship between trustworthiness and trust. The overall R² value for model 2 is 0.717 and the overall model F obtained is 507.805 with a p-value of 0.000. The direct relationship between trust and purchase intentions is found to be significant. The overall R² value reported for model 4 is 0.511 and its overall model F is 208.799 with a p-value of 0.000.

5. Discussion

The findings of our study (Table 2) have reinforced the importance and significance of trustworthiness and trust as mediators in influencing the relationship between E-Service Quality dimensions and consumers' purchase intentions. The mediating role of trustworthiness in this study can be supported by Caldwell and Clapham (2003), Kharouf et al. (2014), and Yu et al. (2015), who through their studies have revealed the role of trustworthiness as a

mediator. It can be seen that there are more e-service quality dimensions that are supported from E-Service Quality to Trustworthiness as compared to from E-Service Quality to Trust. This could be due to the fact that trustworthiness is an antecedent to trust (Kharouf et al., 2014). The findings show that website efficiency, fulfilment and responsiveness increase consumers' perception of a website's trustworthiness, which consequently builds their trust towards the website.

Table 2. Summary of Hypothesis Testing

E-Service Quality → Trustworthiness	H1a: S	H1b: S	H1c: NS	H1d: S	H1e: S	H1f: S	H1g: NS
E-Service Quality → Trust	H2a: S	H2b: S	H2c: NS	H2d: NS	H2e: S	H2f: NS	H2g: NS
E-Service Quality → Purchase Intention	H3a: NS	H3b: S	H3c: S	H3d: NS	H3e: S	H3f: NS	H3g: NS
Trustworthiness → Trust	H4: S						
Trust → Purchase Intention	H5: S						
E-Service Quality → Trustworthiness → Trust	H6a: S	H6b: S	H6c: NS	H6d: S	H6e: S	H6f: S	H6g: NS
E-Service Quality → Trust → Purchase Intention	H7a: S	H7b: S	H7c: NS	H7d: NS	H7e: S	H7f: NS	H7g: NS

Note: 1) S: Supported; NS: Not Supported; 2) Where E-Service Quality = (a) Efficiency; (b) fulfilment; (c) system availability; (d) privacy; (e) responsiveness; (f) contact; and (g) information quality

The findings also revealed that a website's privacy and contact only demonstrate a direct relationship with trustworthiness and not trust. This shows that for website privacy and contact, consumers need to develop a perception of trustworthiness first before they can trust the website. Furthermore, if trustworthiness is not developed for both website privacy and contact, consumers will not build trusting beliefs towards the website and will not intend to purchase from the website. Thus, trustworthiness is proven to be a critical mediator in this study as consumers will only build trust towards the website after they have developed a sense that the website is trustworthy (Kharouf et al., 2014; Zhu and Chen, 2012 in Yu et al., 2015). In addition to this, the result implies that website fulfilment and responsiveness can still influence consumers' purchase intentions, even in the absence of trust as a mediator. Furthermore, website efficiency does not influence consumers to purchase from a website if consumer trust is absent in the relationship. Nevertheless, efficiency can affect consumers' purchase intentions through the mediating role of trust (Ganguly et al., 2010).

The findings also revealed that a website's information quality does not influence customers' purchase intentions even with the mediating role of trustworthiness and trust. This contradicts the findings of many past researchers, who demonstrated the significance of information quality on purchase intention (Rozekhi et al., 2014; Ranganathan and Ganapathy, 2002; Kuan et al., 2008). It also opposes Hsu and Wang (2008)'s study that reported websites with sufficient information can promote online trust. The insignificance of this relationship could be caused by consumers who have already searched and gathered enough information about the products they wish to purchase and thus do not have the need to rely heavily on the product information provided by the website. Another reason could be due to the websites providing too much information, leading to information overload (Keller and Staelin, 1987).

6. Conclusion, Limitations and Recommendations

It is especially important for online retailers to understand that a website represents the first point of interaction and also acts as an interface between consumers and online retailers. Thus, it is critical to investigate and gain a deeper understanding of the influence of a website's E-Service Quality on consumers' intentions to purchase consumer electronics online. Not only that, it is essential for online retailers to recognize the important roles that trustworthiness and trust play in influencing consumers' purchase intentions. Results from our study suggest that online retailers should delve deeper into understanding the dimensions of trustworthiness (ability, benevolence and integrity) that can increase consumers' trust towards the website and subsequently, increase the likelihood of consumers to purchase consumer electronics online. Online retailers must take advantage of this research by making improvements to the E-Service Quality dimensions that consumers emphasise most, and by ensuring that they exhibit quality characteristics such as competency in fulfilling promises to customers and being honest and fair in handling customer transactions, as well as acting in the interest of the customers without focusing solely on profits.

Like any other studies, there are some limitations in our research that should be given attention. Firstly, the scope of this study is only limited to the consumer electronics category and there is no definite guarantee that the results obtained can be applied to other online purchase categories such as online airline tickets, online apparel, online bookstores, et cetera. Therefore, future researchers could consider applying this study's framework into another context, as different outcomes could be obtained. Secondly, the sample selected for this research only consists of respondents who fall under the Generation Y cohort. Future researchers could conduct similar research on older consumers, as their purchase behaviour differs from the younger cohort and older consumers may have different perceptions of buying consumer electronics online due to higher purchasing power.

7. References

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