Exploring Relationships Between e-Tailing Website Quality and Purchase Intention

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Abstract. Attracting and retaining customers in an online environment is crucial to remain a successful retail business. Although purchase intentions have been recognized as a major factor affected by the website quality, few studies have examined how initial purchase intention affects the continued purchase intention. We want to further investigate the relationship between website quality (system, information, and service) and purchase intention categories with perceived risk as the moderator. We developed a questionnaire and three different websites for a fictional office furniture retail business to aid our investigation. The questionnaire was distributed to university students in a large U.S metropolitan city. We received 256 valid responses. Our empirical results confirmed that information and service quality of the e-tail website positively impact initial purchase intentions, and consequently continued purchase intention. Of the three website quality variables measured, the perceived risk seems to have an adverse effect only on the relationship between system quality and purchase intentions. Based on our findings, e-tailing websites should consider focusing more on website quality factors such as responsiveness, utility, reliability, availability, and the content of the website as well as the service provided such as customization, users feedback and rating, and good tracking of user complaints.

Keywords: Website quality · Purchase intention · Perceived risk · Multiple regression analysis · Survey method

1 Introduction

The widespread access to the Internet has allowed businesses to present information, sell products, and provide relevant services through websites. Many researchers argue that websites are an imperative channel for communication and online shopping [1]. However, businesses struggle to retain customers due to low switching cost and lack of face-to-face communication [2]. Therefore, attracting and retaining customers in an online environment is crucial for remaining a successful business.

Studies have shown that a high-quality website increases the likelihood of retaining customers, as it is known to affect the customer's perceived risk [1, 3]. Therefore, having a high perceived risk effect negatively on purchase frequency, and increases the likelihood of negative customers reviews. Website reviews can impact a customer's choice as well [3]. Thus, website quality should be improved to avoid negative reviews and dissatisfaction [4]. Even though studies have indicated that customers are more hesitant to purchase from online channels due to the various kinds of risks presented by the online environment, the majority of customers utilize websites to get information regarding products and services [5].

This study proposes that perceived risk is a moderator between website quality and purchase intentions. Existing literature has identified the key variables of website quality and purchase intentions [1, 6, 7]. Still, the interrelationships among the above with the moderator - perceived risk have not been explored. It is important to mention that purchase intentions can be subdivided into initial purchase intention and continued purchase intention [8]. Both initial and continued purchase intentions are affected by website quality, which can be categorically divided into perceived system quality, perceived information quality, and perceived service quality [8]. The moderator of perceived risk would clarify the relationship among website quality categories and initial/continued purchase intentions. Consequently, the objective of this study is to empirically investigate the moderating effect of perceived risk on the relationship between website quality and initial/continued purchase intentions, and how initial purchase intention impacts continued purchase intention.

2   Background

2.1   Website Quality

Website quality is characterized by a website's ability to allow users to fulfill their goals and willingness of users to revisit the site [9]. It affects the credibility and reliability of a business, which in turn is directly associated with customers' intention to make an online purchase [7]. Various measurements for website quality have been recognized by other researches including information quality, ease-of-use, usability, aesthetics, trust, and emotional appeal [10]. Lin [6] proposed that website design and interactivity as variables of system quality; informative content and security variables as information quality; and responsiveness, trust, and empathy as service quality variables. Similar to Lin [6], Hsu et al. [11] used three features—information, system, and service quality—to measure website quality. The claim that the website quality should be measured as a multi-dimensional construct is consistent with the findings of users' expectations [4], and satisfaction of online customers [12]. Given the consistency in the literature, we have adopted website quality as a multi-dimensional construct comprising information quality, system quality, and service quality.

System Quality. In the Internet environment, system quality is associated with ease of use, which is a characteristic of system design [13]. Kirakowski et al. [14] defined perceived system quality as the extent to which the user thinks the website is easy, reliable, accessible, and adaptable as well as the interface interaction is consistent.

Therefore, poor system characteristics such as lack of responsiveness, usefulness, and suitability discourage the customer from using an e-commerce website, which in turn leads to declines in sales and demand. In addition, security is another critical issue in the system quality, since many sensitive transactions are conducted over the Internet [12].

Information Quality. Rai et al. [15] illustrated information quality as a degree of perceived value of the output provided from the website; which means that the information on the website has to be accurate, relevant, personalized, well-formatted, and easy to understand to encourage initial purchase intention and to have the user return to the site on a regular basis. Because the information quality of e-commerce websites has an extensive effect on the purchase intention, Ahn et al. [16] indicated that to provide an enjoyable shopping experience for customers and help them make ideal purchasing decisions, it is important that the website provides quality information.

Service Quality. Palmer [17] describes service quality as the extent to which a website is reactive, cooperative, and efficient. Service quality includes overall customer assessments and judgments about the service provided through the website [17]. Zeithaml [18] clarified that to increase the purchase intention rate, establish online loyalty, and guarantee that buyers get satisfying results from e-commerce websites, retailers must move their focus from the aspect of exchanges and transactions to the aspect of service. Website quality is a key component in electronic business because customer's perception of website positively impacts their intentions to use and purchase from the website [19]. The real challenge for the e-business is how to convert the website visitors into buyers when they view the website for the first time [20].

2.2 Purchase Intentions

Purchase intention is defined as customers' intention to buy a product in the future [21]. Purchase intention has been widely studied as it can be used to predict real purchase behavior [21]. There are two kinds of purchase intentions when it comes to e-commerce websites: initial purchase intention and continued purchase intention. These two categories are intimately correlated to the customer conversion and retention rates of e-commerce websites [22]. Customer conversion is characterized as an ability of the website to convert prospective customers into buyers, while customer retention refers to the extent to which the website can engage buyers in purchasing again [23, 24]. Thus, e-businesses need strategic focus and innovative techniques concerning website quality to optimally use their limited resources to increase and expand customer conversion and retention rates.

2.3 Perceived Risk

Perceived risk refers to the degree to which a customer thinks there is potential for unpredictable outcomes resulting from the transaction [5]. The presence of perceived risks is likely to discourage customers from making a purchase regardless of the quality of the website [25]. An uncertain customer is less likely to make an initial purchase or a subsequent purchase. A customer, for instance, may shift loyalty if there is a negative review of the e-commerce website.

3   Related Works

Several researchers have shown website quality affects the customers' purchase intention behavior [4, 7, 26]. Kuan, Bock, and Vathanophas [8] studied the relationship between three website quality categories and two purchase intention categories; and found that system quality has a significant relationship with initial purchase intention whereas service quality has a significant relationship with continued purchase intention. Hsu, Chang and Chen [11] used stimulus, organism, and response framework to identify five quality factors (information quality, system quality, e-service quality, customer perceived flow, and perceived playfulness) that may influence purchase intentions. Their findings indicated that only e-service quality had direct influence. Chang et al. [27] explored the influence of website quality and perceived trust and then on the customer purchase intention with website brand and perceived value as moderators. Their results indicated that the website brand increased hotel purchases and orders, when there was a strong connection among website quality and perceived trust for the users. Their study also showed that relationship among perceived trust and purchase intention is moderated by high perceived service value.

Chang and Chen [2] analyzed the impact of customer interface quality, satisfaction, and switching costs. Their analysis of survey responses indicated that professional communication and interaction positively affected customer feelings. Moreover, their study also revealed interaction, convenience, speed, and personalized interface are critical to attracting traffic and switching costs. Further, their analysis established that switching costs were one of the main factors influencing e-loyalty. Kim and Lennon [1] used web-based surveys to analyze the effect of reputation on consumer purchase intention. They found the reputation and the website quality had a positive impact on consumers' emotion and a negative impact on perceived risk. Masoud [28] analyzed the effects of perceived risks on an online shopping setting in Jordan using focus group interviews with online shoppers. Their findings show that dimensions of perceived risks such as financial risks, products risks, delivery risks, information security risks, and time risks, directly influenced online shopping.

Hsieh and Tsao [5] studied the effects of website (system, information, and service) quality on perceived risk and then on online loyalty. Their results show that both system and information quality did not have as much of a negative effect on perceived risk as service quality had. Also, they found that perceived risk had a negative impact on e-loyalty and that the negative impact would be stronger on customer-to-customer relationships rather than on business-to-customer relationships. Gregg and Walczak [3] investigated the relationship between perceived website quality, trust, and price premiums at various online auctions. The analysis of survey responses indicated that the trust derived from the website quality affects the intention to transact and the price premium significantly. He et al., [29] analyzed the impact of usability features on consumer preferences and repurchase intention on e-commerce. Empirical data from this study showed that e-commerce personalization features enhanced the credibility of the website and increased price tolerance. Bai et al. [7] analyzed the direct effects of information content on satisfaction and purchase intention on website visitors in China. The results indicated that the website quality positively affects customer satisfaction, which leads to purchase intention.

Based on the existing literature, we can note that there are significant gaps in the research carried out to find the relationships between website quality and purchase intentions. Literature has ample evidence for a positive relationship between website quality and purchase intentions in the context of online shopping. However, there is a need to find the impact of website quality on purchase intentions with perceived risk as a moderator, and to measure the influence of the initial purchase intention on continued purchase intention on an e-retailing website.

4   Research Model and Hypothesis Development

Existing research studies posits that if online shoppers perceive high-website quality variables, then they are more likely to initiate the purchase process, which in turn contributes to continued purchase intention. We argue to extend further research efforts on website quality to study the moderating effect of perceived risk on the relationship among website quality and purchase intention variables. Figure 1 shows the research model and hypothesized relationships.
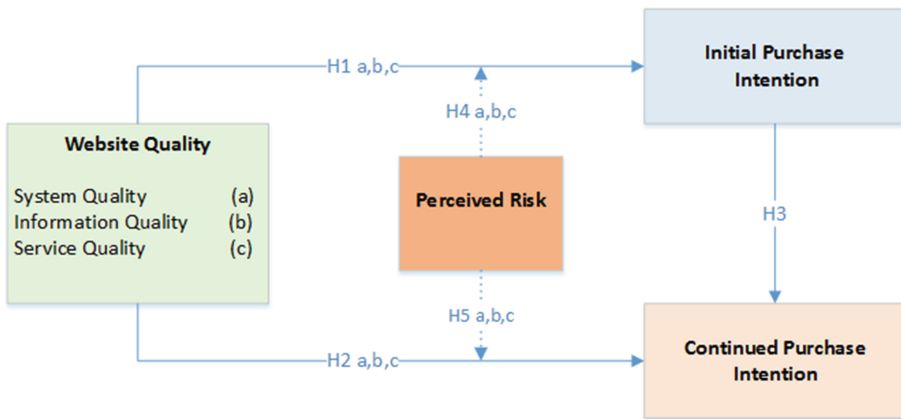

Fig. 1. Research model.

4.1   Relationships Between Website Quality and Purchase Intentions

As mentioned earlier, website quality encompasses system, information, and service quality. System quality is critical to an e-tailing website as the online shoppers would be reluctant to purchase if they experience challenges using the system [1, 8]. Customers rely on the information presented on the website to make their purchasing decisions and complete the transaction. Thus, perceived information quality is known to affect customer's purchase intention [6, 8, 15]. Due to the lack of face-to-face interaction, service quality is vital to the success of an e-retailer [16]. [8, 11, 27] have found the website quality categorized into system, information, and service quality has a significant impact on the purchase intention construct which is further categorized

into initial and continued purchase intentions. Basing on the above arguments, we hypothesize the following:

H1a, b, c: System (a) | information (b) | service (c) quality has a significant positive influence on initial purchase intention on e-tailing websites.

H2a, b, c: System (a) | information (b) | service (c) quality has a significant positive influence on continued purchase intention on e-tailing websites

4.2 The Relationship Between Initial Purchase Intention and Continued Purchase Intention

Gaining customer loyalty is a process that begins with an initial purchase [30]. The initial purchase may be intended or probabilistic. A customer, for example, may purchase an item online because it is needed urgently. Such a purchase is probabilistic. However, a customer may make the initial purchase because the website and the goods on sale have been promoted and packaged to fit his/her needs. Such a purchase is intended. Therefore, the biggest challenge is to ensure that both intended and probabilistic customers come back for their next purchase. Once the organization ensures that the customer makes a continued purchase, loyalty may be achieved [27]. [8] has shown that initial purchase intention is formed based on the features offered by the website. However, none have studied the relationship between initial and continued purchase intention. Given that loyalty towards a website must be achieved over a period of time, it is essential to study the relationship between the first purchase and the continued purchase intentions. Therefore, we hypothesize the following:

H3: Initial purchase intention has a significant positive influence on continued purchase intention

4.3 The Moderating Role of Perceived Risk on the Relationship Between Website Quality and Purchase Intention Variables

A website that reflects high website quality is likely to attract users to make the initial and continued purchases. An organization can create a website of high quality by establishing processes, procedures, responsibilities, and other activities that ensure that the customer receives value when a purchase is made. Although the quality of a website encourages a customer to make a purchase, the possibility of any risk may discourage a customer from making the purchase [25]. Customers are also likely to give little consideration to the quality of the website when they perceive transaction on the website to be risky [7]. In the arena of online shopping, customers are not very knowledgeable of the quality of products or services provided by the website, and because of these customers are looking for informational cues that let them recognize a good quality product from another of lesser quality. Thus, perceived risks scare customers away. Bad website reviews and other risks may increase the alertness of a customer, hence reducing their interest in buying on the website. It is hypothesized that

perceived higher risk is likely to negatively influence the relationship between website quality (system, information, and service) and purchase intention (both initial and continued). We, therefore, hypothesize the following:

H4a, b, c: The relationship between system (a) | information (b) | service (c) quality and initial purchase intention is weaker when customers perceive higher risk levels.

H5a, b, c: The relationship between system (a) | information (b) | service (c) quality and continued purchase intention is weaker when customers perceive higher risk levels

5   Research Methodology

5.1   Survey Development

Based on the research model constructs and previous literature, a survey instrument was created to test the factors of website quality, purchase intentions, and perceived risk. The survey was developed using a seven-point Likert scale for each of the model components ranging from (1) Strongly Disagree to (7) Strongly Agree. The survey questions for each variable have been used in prior research; however, some were modified to suit the context of this research. The sources of the survey constructs are provided in Table 1.

Table 1. Construct sources and number of items used.

Construct name	No. of items	Measurement sources
Website quality		
System quality	4	[6, 11]
Information quality	4	[11]
Service quality	4	[4, 6, 11]
Perceived risk	3	[1]
Purchase intention		
Initial purchase intention	4	[1]
Continued purchase intention	4	[31]

5.2   Experimental Website

Participants of graduate and undergraduate students were asked to browse an experimental office furniture website of a fictional e-retailer to purchase a desk. The survey was designed as one-factorial experiment manipulating three levels of website quality: high, medium, and low following the condition types established by [32] to study online shopping features. Each group of participants was assigned randomly to one quality level of the website. Specifically, each participant in each group was exposed to

a single level of the website to increase the reliability of the responses. Based on the research model, each level of the website was created based on the factors of system, service, and information quality. The three varying quality websites were created based on the characteristics of each level of the website quality as described in Table 2. All the website samples presented the same content regarding the office furniture purchase but differed only in terms of the level of website quality. Figure 2 provides sample screenshots of the three levels of the website.

Table 2. Levels of website quality.

| Factors of website quality	Levels of website quality		
	Low	Medium	High
Information Quality (Sources: from [4, 15])	Minimal information is provided about the product such as name and a picture	In addition to low-level information, brief product description is provided, including overview description, and product dimensions Also, negative reviews provided in the product reviews	In addition to medium level information, the high level of information quality contains comprehensive description of the product specification, and feature descriptions Furthermore, positive reviews provided in the product reviews
Service quality (Source: [17])	Few services provided such as FAQ page, and Tag product. No product reviews Few 404 error on some product pages	In addition to low level of service quality, the number of services provided include: • View reviews from other users • Contact Us page • No 404 error pages	In addition to medium level service, the high level of service quality contains the following: • Slide of product pictures • Writing reviews/feedback for the product and rating it • Product Customization • Share product (Facebook, Twitter) • Add to Wish list • Add to Compare
System quality (Source: [1])	Few system quality features are provided such as consistency of the interface elements, such as logos and icons	In addition to low system quality, the website uses consistent layout in all pages	In addition to the medium level, the website contains overall well-organized user interface including consistent placement of interface elements and site features

A. High Quality Website

B. Medium Quality Website

C. Low Quality Website
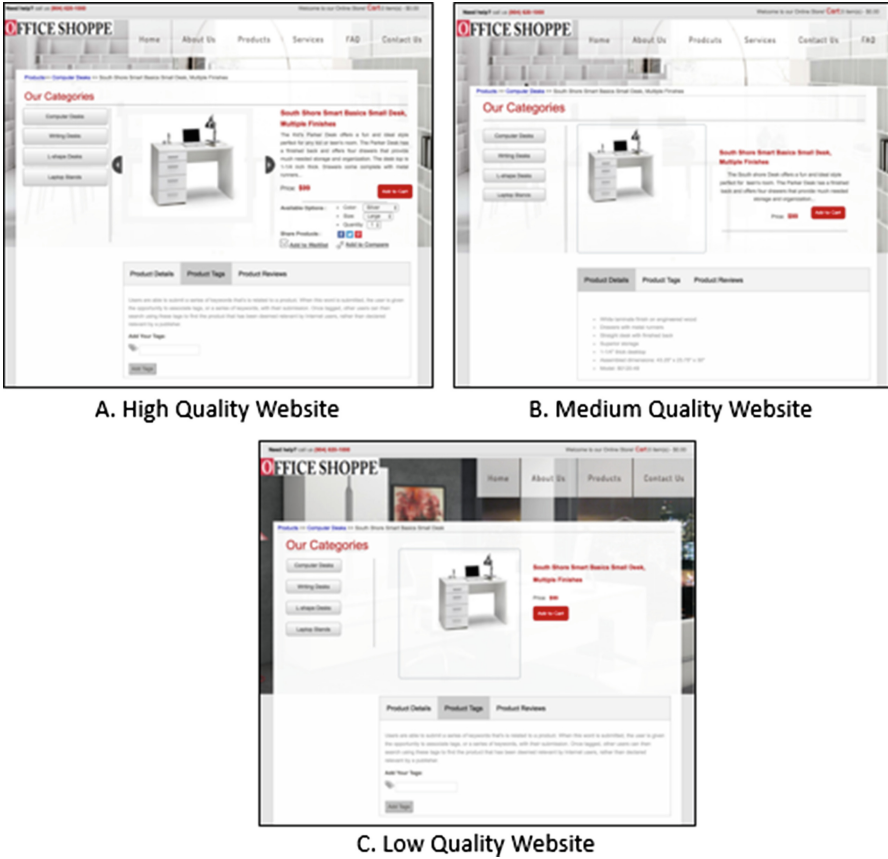
Fig. 2. Office furniture website screenshots.

5.3   Task and Data Collection Procedure

The survey was conducted online, and the participants could access it from any computer with Internet connection. The study was conducted in a medium-sized university in the southeast United States. We requested instructors in the university to post the experimental website link in their Course Management System. After the links were posted, willing volunteers clicked on the survey participation link, which led them to a consent page explaining the purpose of the study as well as the associated tasks for participants. The participants who agreed to take part in the study were directed to one of the three office furniture websites. Participants were requested to navigate the website and to purchase their favorite desk. Once the item had been selected and the decision had been made, the participant proceeded to check out. When the participant selected a desk by clicking on "add to cart" the task was considered complete, and the survey questionnaire was presented to the participant. The survey questionnaire was developed using Qualtrics software [33]. The researchers obtained the university Institutional Review Board permissions to conduct the study.

To ensure that all the items of the survey, as well as task instructions, were well written and understandable, a pretest was conducted prior to sending out the final survey to the actual sample of the study. A group of 30 people reviewed the survey items and instructions to report any ambiguities or difficulties in terms of responding to certain items. Following the pre-test, survey items and instructions were modified based on the feedback received from the reviewers.

6 Data Analysis and Results

6.1 Sample Population and Demographic Profile

A total of 262 responses were received. Of the responses received, 256 were usable survey responses that were analyzed. Statistical analyses were conducted using Statistical Package for Social Science (SPSS) software package. The demographic profile of the respondents is presented in Table 3.

To ensure that the rating of the website quality level was completed at the proper time (once the participant had experience with the website), the manipulation question was only visible to the participants after they reviewed the website. This question was phrased as follows: "After reviewing the Office Shoppe website, how would you rate

Table 3. Demographic information and level of websites usage.

Demographic variable	Sub-items	Frequency	Percent
Gender	Male	149	58.2
	Female	107	41.8
Age	18–25	133	52
	26–35	81	31.6
	36–45	38	14.8
	45+	4	1.6
Times of shopping online	Once a week or more	84	32.8
	2–3 times a month	75	29.3
	Once a month	50	19.5
	Every few months	34	13.3
	Rarely/Never	13	5.1
Rate of the website	Very Good	46	18
	Good	98	38.3
	Above average	11	4.3
	Average	61	23.8
	Below average	30	11.7
	Poor	9	3.5
	Very poor	1	0.4
Responses received	High-quality website	89	34.8
	Medium-quality website	47	18.4
	Low-quality website	120	46.9

the level of the website quality?" Seven options were provided on a scale ranging from "very good" to "very poor" as shown in Table 3. This study assumes that the average of participant responses to the high-quality website sample would be rated and categorized as either "very good", "good", or "above average"; the average of the medium-quality website would be rated and categorized as "average", or "below average"; and the average of the low-quality website would be rated and categorized as "poor" or "very poor". However, the high-quality website sample (n = 89) was rated on average as "good" and the medium (n = 47) and low-quality website samples (n = 120) on average were reviewed as "below average" websites. Therefore, it can be concluded that the expectations regarding the high website quality and medium website quality manipulations were met more than the low-quality website.

6.2   *t*-Tests

We conducted *t*-tests to determine whether there is a significant difference between responses received for high-quality, medium-quality, and low-quality websites for each independent variable. Results indicate that there were significant differences for all four questions relevant to system quality, information quality, and service quality. Average means for each website quality independent variables and website levels are shown in Table 4. We also conducted one-way ANOVA for examining whether there are significant differences between the means of the moderator, perceived risk, and dependent variables, purchase intentions, among the three samples of the website. Results are shown in Table 5 which indicates there were statistical differences between the means of the three samples of the website (p-value < .05). Thus, we conclude that users have different perceptions of the website quality attributes, perceived risk, and purchase intentions. Therefore, we decided to use the entire sample (n = 256) for testing the hypotheses.

Table 4. *t*-tests for independent variables.

Independent variables	Average of means for websites			Sig. (2-tailed)
	High	Medium	Low	
System quality	5.983	4.644	5.184	0.000
Information quality	5.744	4.697	4.087	0.000
Service quality	5.983	4.628	4.01	0.000

Table 5. One-way ANOVA for moderator and dependent variables.

Variables		Average of means for websites			F	Sig. (2-tailed)
		High	Medium	Low		
Moderator	Perceived Risk	3.232	4.794	4.403	25.072	0.000
Dependent Variables	Initial Purchase Intention	4.629	3.787	3.725	10.424	0.000
	Continued Purchase Intention	4.5	3.585	3.558	10.101	0.000

6.3   Reliability Analysis

We performed principal component analysis (PCA) with Varimax rotations on the 12 items for website quality independent variables to assess the internal consistency among survey items. Cronbach's alpha coefficient values are used to measure the reliability of the survey instrument with 0.7 as the minimum acceptable value [34]. Cronbach's alpha was calculated to confirm the reliability of the moderator and dependent variables as well. Table 6 shows the results of PCA with Varimax for independent variables and Table 7 shows Cronbach's alpha values for the moderator and dependent variables. For all items, the Cronbach's value was greater than 0.8, thus indicating good internal consistency.

Factor analysis was performed to determine how well website quality items are related to one another and form factors. As a rule of thumb, a measurement item loads highly if its loading coefficient is above 0.6 and does not load highly if the coefficient is below 0.4 [34]. From Table 6, it can be noted that all factors load highly greater than 0.6 and all coefficient alpha greater than 0.7, these results imply that all three website quality constructs comply with the requirement of high internal consistency. All factors illustrate good internal consistency and factor analysis results, thereby, demonstrating the construct validity.

Table 6.   PCA with Varimax for independent variables.

Independent variables	Scale items	Factor loadings	Cronbach α	Explained variance
System quality	SQ1	0.861	0.844	81.35%
	SQ2	0.906		
	SQ3	0.906		
	SQ4	0.932		
Information quality	IQ1	0.907	0.801	82.78%
	IQ2	0.929		
	IQ3	0.875		
	IQ4	0.927		
Service quality	SVQ1	0.825	0.833	79.45%
	SVQ2	0.926		
	SVQ3	0.895		
	SVQ4	0.916		

Table 7.   Cronbach estimates for moderator and dependent variables.

	Variables	# Items	Cronbach α
Moderator	Perceived risk	3	0.879
Dependent variables	Initial Purchase Intention	4	0.932
	Continued Purchase Intention	4	0.941

6.4   Testing Hypotheses: Multiple Regression Analysis

Hypotheses H1 through H5 was evaluated using multiple regression analysis. In this study, multiple regression determined the relative importance and significance of the relationships between website quality, purchase intentions, and perceived risk as a moderator. Multicollinearity among independent variables was detected by examining the Variance Inflation Factor (VIF) in all three samples. A VIF value of above 10 was used as a cut-off threshold, showing multicollinearity problems among independent variables in multiple regression models. The VIF values among all independent variables measuring website quality are shown in Table 8. Since all the VIF values among multiple independent variables within an acceptable range, there is no multicollinearity issue in this study.

Table 8. Collinearity statistics.

Construct	System quality	Information quality	Service quality
Variance Inflation Factor (VIF)	2.792	3.782	3.763

To test H1a, b, c, and H2 a, b, c, multiple regression analysis was used. The three factors of website quality were used as independent variables or predictors, and initial purchase intention was a dependent variable for H1 while continued purchase intention was a dependent variable for H2. Regards to H1, the results show that there are significant positive relationships between two factors of website quality (information quality (Beta = .210, $p > .05$) and service quality (Beta = . 486, $p < . 001$)) and initial purchase intention ($F = 56.625$, Adj. $R2 = .396$, $p < .001$). Therefore, H1b and H1c are supported (See Fig. 2 and Table 9). Results for H2 shows significant positive relationships between website quality factors (information quality (Beta = .250, $p < .05$) and service quality (Beta = .496, $p < .001$)) and continued purchase intention ($F = 54.424$, Adj. $R2 = .386$, $p < .001$). Therefore, H2b and H2c are supported (See Fig. 2 and Table 9).

To test H3, linear regression was used. Initial purchase intention was used as an independent variable or predictor, while continued purchase intention was used as the dependent variable. The result shows there is a significant positive relationship between the above factors. Specifically, initial purchase intention is positively related to continued purchase intention ($F = 788.605$, Adj. $R2 = 0.755$, Beta = .929, $p < .001$). Therefore, H3 is supported (See Fig. 2 and Table 10).

For examining H4a, b, c, and H5a, b, c, multiple regression analysis was used. The three factors of website quality including system quality, information quality, and service quality were used as independent variables or predictors, and initial purchase intention was a dependent variable for H4 while continued purchase intention was the dependent variable for H5, whereas the perceived risk was a moderator between the above relationships. As hypotheses proposed a negative moderating effect of perceived risk on the relationship between website quality factors and initial purchase intention. The results show that a significant relationship was found only among system quality, initial purchase intention, and the moderator of perceived risk ($F = 7.137$, Adj.

R2 = .067, p < .001). To be specific, perceived risk negatively moderated the effect of system quality and initial purchase intention (Beta = –.027, p < 001). However, in terms of service quality, a positive relationship was found; the relationship between service quality and initial purchase intention were stronger when perceived risk was high, to be specific, (Beta = .022, p < .05). That is, perceived risk positively moderated the effect of service quality on initial purchase intention, contrary to H4c. Therefore, only H4a is supported (See Fig. 2 and Table 11). Results for H5 is similar to H4, a significant relationship was found only between system quality, continued purchase intention (Beta = –.028, p < 000), and the moderator of perceived risk (F = 6.089, Adj. R2 = .056, p < .01). Unpredictably, regarding service quality, a positive relationship was found; the relationship between service quality and continued purchase intention were stronger when perceived risk was high. That is, perceived risk positively moderated the effect of service quality on continued purchase intention, contrary to hypothesis 5c. Analysis for information quality did not reveal any statistically significant results for H4b as well as H5b. Therefore, only H5a is supported (See Fig. 2 and Table 11) (Fig. 3).
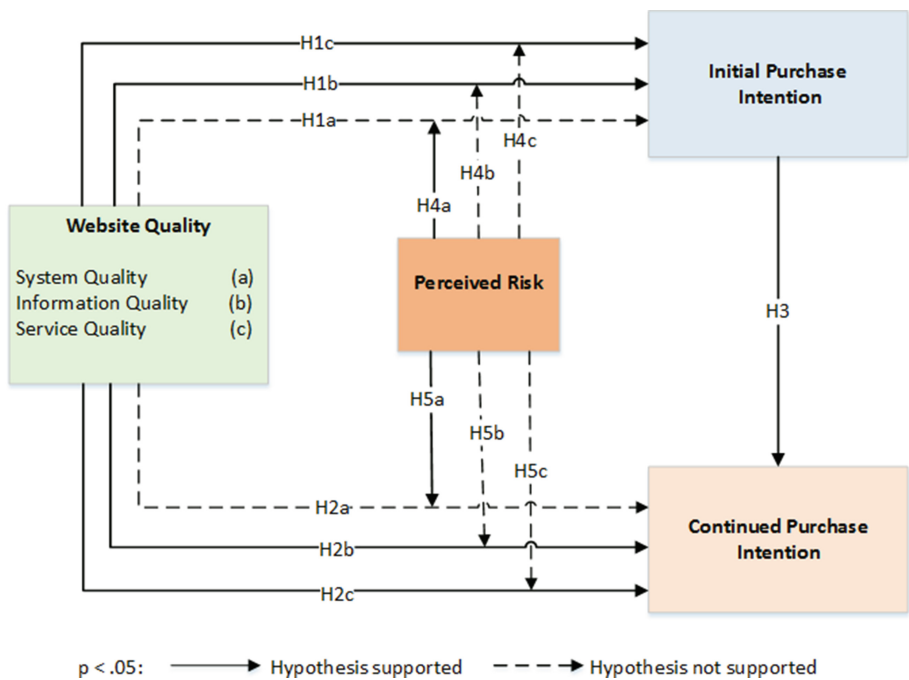

Fig. 3. Research model with hypotheses results.

Table 9. Multiple regression between website quality and purchase intentions.

Predictor	Outcome	
	Initial purchase intention	Continued purchase intention
System quality	n/s	n/s
Information quality	0.210*	0.250*
Service quality	0.486***	0.496**
F	56.625	54.424
Adj. R^2	0.396	0.386
Sig.	0.000	.000

***$p < .001$, **$p < .01$, *$p < .05$, n/s: not significant

Table 10. Linear regression between initial and continued purchase intentions.

Predictor	Outcome
	Continued purchase intention
Initial Purchase Intention	0.929***
F	788.605
Adj. R^2	0.755
Sig.	.000

***$p < .001$

Table 11. Multiple regression between website quality and perceived risk on purchase intentions.

Predictor	Outcome	
	Initial purchase intention	Continued purchase intention
System Quality * Perceived Risk	−.027***	−.028***
Information Quality * Perceived Risk	n/s	n/s
Service Quality * Perceived Risk	.022	0.020*
F	7.137	6.089
Adj. R^2	0.067	0.182
Sig.	.000	.001

***$p < .001$, **$p < .01$, *$p < .05$, n/s: not significant

7   Discussion and Conclusion

In this paper, we argue that the quality of a website is a vital aspect in influencing consumers purchase intentions which can be used to determine and influence their perceived risk. This study assumed that the system quality of a website positively influences initial and continued purchase intentions (H1a, H2a). Conversely, this hypothesis was not supported because the obtained results did not demonstrate

statistical significance. This study did, however, support the hypothesis that system quality negatively influences the purchase intentions through moderator—perceived risk (H4a, H5a). System design that meets the aspects of utility, suitability, reliability, and availability will influence the customers initial and continued purchase intentions.

A good display of the content in the interface of the website enhances the security perception of the customers, which positively influences their purchase intentions. This study provided support for the hypotheses that information on a website positively influences initial and continued purchase intentions (H1b, H2b). Therefore, to maintain a competitive advantage and raise customer purchase intention, e-tailing websites must continuously improve the information quality of their site to attract new customers and retain existing ones. We also assumed that the perceived risk of the website would negatively influence the purchase intentions of the customer (H4b, H5b). However, these hypotheses were not supported, as the relationship among the above factors were statistically insignificant.

The quality of service influences the perceived value, which the customer receives during the purchasing process [27]. In compliance with the results of this study, the relationship between website service quality and purchase intentions (initial and continued) was statistically significant. Thus, this study results supported the relationships between the website service quality and purchase intentions (initial and continued) (H1c, H2c). Additionally, we hypothesized that service quality of a website negatively influences initial and continued purchase intentions of the customer if the user perceives high risk (H4c, H5c). However, our study findings did not find support for this negative relationship. These findings differ from those of some previous studies [5], which suggested that perceived risk and website service quality may negatively interact with each other in driving purchase intentions. Maybe the moderating effect of perceived risk on the service quality and purchase intentions link is affected by market competition and structure. That is, a dissatisfied customer with the perceived risk of service provided unlikely to perceive risk when there are only a few alternative providers. Therefore, the perceived risk might positively moderate the effect of service quality on purchase decisions.

This study supported the hypothesis that initial purchase influenced by safety and guarantee from website quality which stimulates on the continued purchase intention (H3), which implied that gaining customer satisfaction in the initial purchase could improve customer intention to return and vice-versa. Therefore, factors such as safety and guarantee measures that the website has in place will contribute immensely in increasing user retention level.

There are several limitations in this study that needs to be brought to the forefront. First, website quality is a multi-faceted construct. However, this study involved only three dimensions in measuring the website quality. There are other various website quality factors (such as usability, security, reliability, performance, portability, accessibility, and conformance to web standards) that may bring different results. Future studies should consider including some of the other website quality attributes that were not included in this study. Second, this study adopted perceived risk as the only moderator. Further studies need to be conducted to examine the effects of variables such as switching costs, reputation, payment methods, and after sale risks. Third, this study used purchase intentions as a proxy for actual customer purchasing behavior.

While information systems researchers predominantly agree that purchase intention is a valid proxy for actual purchase, consumer behavior researchers argue for studies on the actual purchase behaviors. Finally, even though there is racial and ethnic diversity in this sample study, the sampling of only college students does not yield a representative sample of all of the general population of online shoppers. In addition, since this study only considered an office furniture purchase, it is not possible to generalize analytical outcomes to other e-commerce websites. Further research can be conducted to examine a variety of online retailers, products, and services. Furthermore, this study was investigated using a traditional website; future researchers may want to consider broadening this perspective and employing a mobile platform that can be launched from a participant's phone or tablet.

In conclusion, our study examined the influence of website quality factors and the moderator of perceived risk on purchase intentions (initial and continued). Our empirical results confirmed that website quality positively affected initial intention, and consequently continued purchase intention. While building and boosting customer retention in the e-business sectors is difficult; it requires lots of effort to distinguish themselves from their competitors through the website quality features. Therefore, based on our findings, e-tailers should consider focusing more on website quality factors as a marketing strategy, mainly improving responsiveness, utility, reliability, availability, and the content of the website as well as the service provided such as customization, users feedback and rating, and appropriately addressing user complaints.

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