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Thank You, Come Again: Examining the Role of Quality and Trust on eCommerce Repurchase Intentions

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THANK YOU, COME AGAIN:
EXAMINING THE ROLE OF QUALITY AND TRUST ON E-COMMERCE REPURCHASE INTENTIONS

Merci, revenez : étude des rôles de la qualité et de la confiance dans le développement d'intentions de rachat en ligne

Research-in-Progress

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Abstract

As the pertinence of online consumer shopping continues to grow, more and more e-retailers are erecting websites. In this increasingly competitive environment, building customer loyalty and retaining customers is integral to achieving sustained profitability. While one stream of literature has suggested that e-retailers should concentrate on improving quality, another stream has recommended that the focus should be on building trust with customers. This paper represents an early, working attempt to synthesize these parallel streams, investigating how the interplay between three forms of quality (information, system, and service) and trust help to retain customers. Integrating information systems and marketing research, the results of this paper suggest that trust mediates the relationship between each type of quality and both satisfaction and repurchase intentions. Furthermore, of the three types of quality that are examined, service quality engenders the greatest impact on trust, followed by information quality then system quality. The paper concludes with a discussion of this preliminary model as well as directions for the future development of this project.

Keywords: Trust, e-commerce, quality, information quality, system quality, service quality, repurchase intentions

Résumé

Dans un environnement de magasinage en ligne, fidéliser et retenir les clients est crucial pour réaliser une rentabilité durable. Cet article étudie comment l'interaction entre trois formes de qualité (information, système et service) et la confiance aideront à conserver les clients. En Intégrant les recherches en systèmes d'information et en marketing, les résultats de cette étude suggèrent que la confiance véhicule l'effet de chaque type de qualité sur la satisfaction et sur les intentions de rachat.

Introduction

E-commerce has become more and more pertinent over time. Since 2001, online sales have grown at an annual rate of approximately 25% (Maguire 2005). Furthermore, in 2007, $136 billion was spent online, a number that is projected to be over $300 billion by 2010 (Scheleur et al. 2007). While shoppers are spending an increasing amount of money online, e-retailers' operating margins are improving. For example, in 2004, online retailers experienced operating margins of 28%, an increase of 33% from the previous year. The heightened prevalence of online shopping combined with the increased profitability margins has resulted in more and more e-retailers erecting websites. The implication of this is that online shoppers have more alternatives than ever before.

Not only do online shoppers have more alternatives, but they are also utilizing these alternatives, making customer retention a major issue for e-retailers. For example, while the top 400 e-retailers accounted for 58% of all online sales in 2004, the top 500 e-retailers accounted for 63% of all online sales in 2005. These statistics indicate that it took a greater number of retail websites to account for nearly the same percentage of online sales. Moreover, it has been shown that 75% of online shoppers are willing to switch websites (Maguire 2005). Switching occurs because of the lower barriers to entry for e-retailers, the reduced distinctiveness of websites in general, and the reduction in consumers' search costs (i.e. search engines) (Vatanasombut et al. 2004). Although customer defection is occurring and is difficult to mitigate, e-retailers need to focus on this issue due to its significant effects on profitability. To illustrate, while increasing loyalty by 5% can increase profitability by up to 95% in traditional retail, this is estimated to be even higher on the web (Reichheld and Sasser 1990; Reichheld and Schefter 2000).

Extant research has suggested that there are two mechanisms by which e-retailers can enhance customer loyalty. First, e-retailers should focus on quality issues. In information systems (IS), the focus has been on information quality and system quality (DeLone and McLean 2003), asserting that the content and the content-delivery system are both vital to increase repurchase intentions (McKinney et al. 2002). In marketing, the focus has been on service quality, arguing that factors such as reliability, customer service, and fulfillment are strong predictors of loyalty (Parasuraman et al. 2005; Wolfinbarger and Gilly 2003). Second, e-retailers need to gain the trust of shoppers. By concentrating on trust, e-retailers can create barriers to switching and can build long-term relationships with customers (Vatanasombut et al. 2004). In addition, lack of trust will lead customers to dropout from a particular website (Chau et al. 2007).

The purpose of this paper is to synthesize these two parallel streams of literature and create an integrated model. The primary research question of this study is: How do different types of quality and trust affect repurchase intentions? By incorporating the three types of quality mentioned above (i.e. information, system, and service), the model is able to account for multiple phases of the purchasing process (Bauer et al. 2006). Specifically, while information and system quality are pertinent during the pre-purchase phase, service quality reigns post-purchase.

Trust

Trust has been defined as the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other party will perform a particular action important to the trustor (Mayer et al. 1995). In the context of e-commerce, trust has been conceptualized as a set of specific beliefs about another party that positively influence an individual's intention to conduct online transactions (Dinev and Hart 2006). Trust in e-commerce differs conceptually from trust in traditional organizational research due to the fact that many of the extant dimensions of trust were intended for interpersonal or group level relationship, which may not be pertinent in online environments. For example, while availability and accessibility have been shown to be related to interpersonal trust, these variables are less relevant in online settings, as websites are typically available and accessible at all times

(Bhattacherjee 2002). Trust plays a critical role online due to the lack of social cues and the non-interpersonal nature of the communication.

Despite the numerous conceptualizations of trust, most of the e-commerce literature has characterized trust as consisting of the three dimensions of ability, integrity, and benevolence (Bhattacherjee 2002). *Ability* refers to the trustor's perception of the trustee's competencies and knowledge related to the expected behavior (Mayer et al. 1995). In the context of e-commerce, this perception is based on two related beliefs: 1) whether the firm is competent enough to perform the intended behavior; and 2) whether the firm has access to the knowledge required to perform the behavior appropriately. *Integrity* refers to the trustor's perception that the trustee will adhere to a set of principles or rules of exchange acceptable to the trustor during and after the exchange (Mayer et al. 1995). In the context of e-commerce, there are three main components of integrity: 1) conducting online transactions aptly; 2) following customer service policies after a transaction; and 3) using private customer information appropriately (Bhattacherjee 2002). *Benevolence* is the extent to which a trustee is believed to act on the behalf of the trustor, beyond its own profit motive (Mayer et al. 1995). Benevolent vendors act altruistically, which, from the trustor's perspective, reduces uncertainty as well as the inclination to guard against opportunistic behaviors. Although it is difficult for online vendors to act benevolently, they may do so by: 1) demonstrating empathy towards users' concerns and needs; and 2) proactively making good faith efforts to resolve user concerns (Bhattacherjee 2002).

The Impact of Quality on Trust

As mentioned above, researchers in both IS and marketing have investigated quality issues in the context of e-commerce. Specifically, while IS researchers have largely focused on issues related to information and system quality, marketing researchers have concentrated on service quality.

Information Quality

Traditional research on information quality has focused on the information product of the system. Specifically, it is concerned with the relevance, timeliness, and accuracy of the information generated by an information system (DeLone and McLean 1992). Because the end users are business users, information characteristics such as aggregation, formatting, conciseness, and information that support business objectives are critical. In this context, quality information is defined as information that is intrinsically good, contextually appropriate, clearly represented, and accessible (Wang and Strong 1996).

In the context of e-commerce, information quality is the customer perception of the quality of information presented on a website (McKinney et al. 2002). Here, quality information is information that is understandable, reliable, and useful. Because online customers are the end users, information characteristics such as the appropriate use of graphics, price information, and product/service description are critical (Liu and Arnett 2000). Furthermore, it has been shown that the availability and depth of information are important reasons for shopping online (Wolfinbarger and Gilly 2001). Online buyers perceive a benefit in obtaining information directly from a website rather than having to go through salespeople in an offline store (Zeithaml et al. 2002).

Online shoppers need to access an e-retailer's website in order to gather information and conduct transactions. While gathering information, shoppers assess the trustworthiness of the e-retailer (Kim et al. 2004). Previous research has examined whether or not information such as third-party certification, advice, privacy/security statements, and website explanations impact customer trust levels (Bart et al. 2005; Lee and Turban 2001; Schlosser et al. 2006; Wang and Benbasat 2007). Moreover, it has been found that providing rich information content enhances the overall customer experience with the website (John G. Lynch and Ariely 2000). Not only does detailed information allow customers to make better choices, but it is also interpreted to determine the vendor's intentions (Shankar et al. 2003). These arguments suggest the following:

> **H1: Information quality is positively related to trust.**

System Quality

Traditional research on system quality has focused on the desired characteristics of the information system itself (i.e. the processing system). Specifically, it is concerned with whether or not there are bugs in the system, the consistency of the user interface, ease of use, and the quality of the documentation and code (DeLone and McLean

1992). Because the end users are business users, endogenous system characteristics such as resource and hardware utilization, system reliability, response time, and flexibility are critical.

In the context of e-commerce, system quality is the customer perception of a website's performance in information retrieval and delivery (McKinney et al. 2002). Here, a quality system is a system that is accessible and responsive, usable, and navigable. Because online customers are the end users, system characteristics that capture the interaction between the customer and the website are important. Examples of such characteristics include the experiential factors of playfulness and website aesthetics.

Shoppers make inferences about the e-retailer from what they experience at its website. In this way, websites are signaling mechanisms (Kim et al. 2004). Thus, shoppers will determine whether or not a vendor is trustworthy based on the evaluation of its website. One such website characteristic is the associated system quality. A website that has a high perceived level of system quality possesses the requisite institutional controls and proper technology for a successful transaction (Pennington et al. 2003). Prior research has suggested that system quality can be effective in initial trust formation between unknown parties (McKnight et al. 1998). Furthermore, system performance and website functionality have been shown to impact customer attitudes (McKinney et al. 2002; Wolfinbarger and Gilly 2003). These arguments suggest the following:

> **H2: System quality is positively related to trust.**

Service Quality

Traditional service quality has been defined as the extent to which the perceived service level matches customer expectations (Parasuraman et al. 1985). It has been broken down into a technical aspect (i.e. what service is provided) and a functional aspect (i.e. how the service is provided) (Gronroos et al. 2000). The most widely-used scale for service quality, SERVQUAL, consists of the dimensions of tangibles, reliability, responsiveness, assurance, and empathy (Parasuraman et al. 1985). Furthermore, because it deals largely with customer-employee interactions, characteristics such as courtesy, friendliness, and communication are important.

In the context of e-commerce, service quality has been defined as the extent to which a website facilitates efficient and effective shopping, purchasing, and delivery of products and services (Parasuraman et al. 2005; Zeithaml et al. 2002). The most widely-used scale for online service quality, E-S-QUAL, consists of the dimensions of efficiency, availability, fulfillment, and privacy (Parasuraman et al. 2005). It can be broken down into pre- and post-purchase service aspects. Approximately half of its items are borrowed and/or adapted from SERVQUAL (Zeithaml et al. 2002). Some of the newer items are concerned with issues related to customer-website interactions, including security, accessibility, and efficiency. Other scales for online service quality include E-RecS-QUAL (Parasuraman et al. 2005), SITEQUAL (Yoo and Donthu 2001), and eTailQ (Wolfinbarger and Gilly 2003).

Customers assess the quality of an e-retailer based on their transactions with the e-retailer. During these transactions, customers experience the services provided by the e-retailer (Wolfinbarger and Gilly 2003). Trust has been found to be built up when the trustee behaves in a manner that is acceptable and in accordance with the trustor's expectations (Blau 1964). Because customers typically expect quality service from an e-retailer, it is argued that it is a predictor of trust in an e-retailer. Furthermore, research in traditional contexts have found that service quality is a critical prerequisite for establishing and sustaining satisfying relationships with customers (Spreng and Mackoy 1996). These arguments suggest the following:

> **H3: Service quality is positively related to trust.**

Although all three types of quality are hypothesized to have a positive impact on trust, it is argued that each specific type of quality will have differential impacts on trust. It has been posited that customer retention in e-commerce is undermined by the reduced distinctiveness of vendors in online contexts (Vatanasombut et al. 2004). In other words, e-retailers struggle to differentiate themselves from other e-retailers. The reason for this is that websites are easy to imitate and replicate. Specifically, features, functionality, and design are easy to copy. Previous research has suggested that customers are more concerned with information content (i.e. information quality) than the delivery mechanism (i.e. system quality) (Pitt et al. 1995). Moreover, because services are the most personal of the three types of quality, they will have the most impact on customer perceptions. This is supported by previous work, which has found that customer service ratings are the strongest predictors of loyalty (Wolfinbarger and Gilly 2003). These arguments suggest the following:

H4: Service quality will have the greatest positive impact on trust, followed by information quality then system quality.

Impact of Trust

McKnight and colleagues (2002) utilized these three dimensions of trust to propose and validate measures for a multidisciplinary, multidimensional model of trust in e-commerce. Their web trust model includes four high-level trust constructs: disposition to trust, institution-based trust, trusting beliefs, and trusting intentions. *Disposition to trust* is the extent to which a person displays a general propensity to be willing to depend on others across a broad spectrum of situations and persons. *Institution-based trust* is the belief that the needed structural conditions are present to enhance the probability of achieving a successful outcome. In the context of e-commerce, an individual's perceptions of the structural characteristics of the Internet (the institution), such as safety and security, have been shown to influence trusting beliefs and trusting intentions towards a specific vendor. *Trusting beliefs*, often simply referred to as trust, is defined as the trustor's perception that the trustee (i.e. a specific e-vendor) has attributes that are beneficial to him or her. This characterization is consistent with the concept of cognitive trust, which is defined as a trustor's rational expectations that a trustee will have the necessary attributes to be relied upon (Komiak and Benbasat 2004). As mentioned above, three of the most adopted dimensions of trusting beliefs are ability, integrity, and benevolence (Bhattacherjee 2002; Mayer et al. 1995). *Trusting intentions* refers to the extent to which the trustor is securely willing to depend, or intends to depend, on the trustee. It has been found to be a direct antecedent to an individual's *trust-related behaviors*, which are actions that demonstrate dependence on an e-vendor that make one vulnerable to the vendor, or increase one's risk (Mayer et al. 1995; McKnight et al. 2002). Some of the commonly discussed trust-related behaviors in e-commerce include sharing personal information, making a purchase, or acting on information provided by a specific website. In addition to the web trust model, McKnight et al. (2002) also focus on initial trust, as this form of trust may be critical when interacting with an unfamiliar vendor (McKnight et al. 1998). Here, consumers do not yet have credible, meaningful information about the vendor. This is gained only after the trustor has engaged in trust-related behaviors and assessed the trustworthiness of the vendor by observing the consequences of these behaviors.

Previous research has examined the impact of trust on downstream attitudinal variables, such as satisfaction, as well as repurchase intentions (Garbarino and Johnson 1999; Harris and Goode 2004). Trust plays a critical role here because online shoppers may encounter opportunistic behaviors, such as unfair pricing, receiving inaccurate information, violations of their privacy, unauthorized use of their credit card information, and unauthorized tracking of their transactions (Gefen 2000; Reichheld and Schefter 2000). Thus, consumers are more likely to be satisfied with the e-retailer and make an online purchase if they trust a particular e-vendor's buying and payment process, if they feel the website is reliable, and if there are no glaring privacy and security issues (Shankar et al. 2002; Yoon 2002). In addition, trust is believed to reduce uncertainty by mitigating hidden information and hidden action (Pavlou et al. 2007). The implications of this are that online consumers tend to avoid e-retailers whom they do not trust. Past studies suggest that trust impacts intermediate outcomes such as risk perception, attitudes towards the vendor, and loyalty to the vendor (Jarvenpaa and Tractinsky 1999; Reichheld and Schefter 2000). Trust has also been shown to affect more distant, behavioral outcomes such as consumer purchase intentions (Gefen 2000; Yoon 2002). Taken together, this well established body of prior research suggests the following hypotheses, which completes the full nomological model, illustrated in Figure 1.

H5: Trust is positively related to satisfaction.

H6: Trust is positively related to repurchase intentions.

H7: Satisfaction is positively related to repurchase intentions.

Figure 1. Research Model
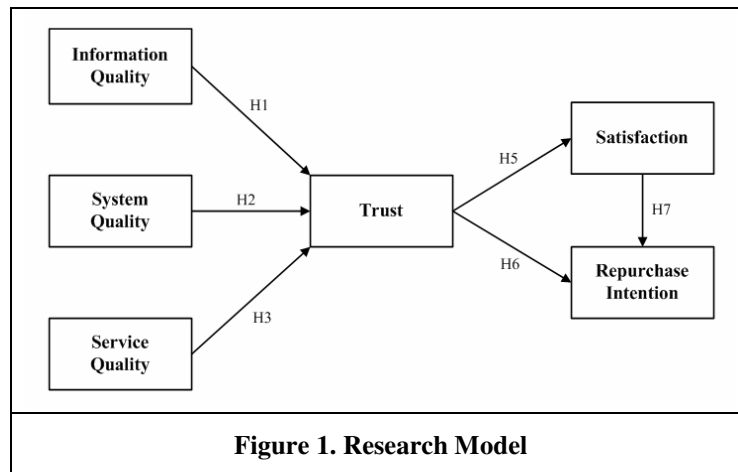
Research Method

An online survey research firm was utilized to administer our questionnaire to a sample of Internet users. The firm contacted potential respondents, who were directed to a website containing our online survey. A screening question determined if they had sufficient online shopping experience, specified as having made at least one purchase in the past three months. Qualified respondents were asked to answer all questions with respect to their last completed online shopping transaction. Responses covered a range of sites that varied in product variety (e.g., apparel, books, CDs, computer software and hardware).

Respondents

5,900 individuals were sent an invitation to participate in the study. Of the 2,343 individuals who accessed the survey site, 2,117 went through the entire survey. Those who left a large number of questions unanswered were removed, as were those who reached the end of the survey in an unreasonably short period of time (based on time estimates in pilot tests), resulting in a final dataset of 758 individuals who made a purchase from an online retailer in the three months prior to the study. Following established procedures for calculating response rates in surveys of online environments (Ridings et al. 2002) produced a response rate of 32.4% of individuals who accessed the survey site, or 12.8% of all individuals who were invited to participate in the study. Respondents ranged in age from 18 to over 55, with an average age in the 41-55 range. Fifty-one percent of respondents were male.

Measures

Constructs in the study were measured using established measures, including information quality (McKinney et al. 2002), system quality (McKinney et al. 2002), service quality (Parasuraman et al. 2005), trust (McKnight et al. 2002), satisfaction (Anderson 2003), and repurchase intentions (Harris and Goode 2004). All items in the instrument were vetted and refined by the authors, and further refined in a pilot study conducted with students in an undergraduate introduction to information systems course. Survey items for measuring the constructs were refined following Dillman's (2000) approach. All attitudinal items were measured on a 7-point Likert scale anchored on "1 = strongly disagree" and "7 = strongly agree". Following Bagozzi and Heatherton (1994), responses to the items were averaged to form composite measures for each of the quality and trust constructs.

The data was employed in a simultaneous test of structural and measurement models using Partial Least Squares (PLS Graph, Version 3.00). The adequacy of the measurement model was assessed using three common tests of convergent validity (Chin 1998; Hulland 1999). First, items loaded on their intended constructs greater than 0.7, indicating that there was more shared variance between a construct and measure than error variance (Carmines and Zeller 1979). Second, the internal consistency of each construct was assessed using composite reliability (Werts et al. 1974); the lowest reliability score was 0.82, well in excess of Nunnally's (1978) 0.7 guideline. Third, the average variance extracted (AVE) (Fornell and Larcker 1981), which measures the average amount of variance that a construct captures from its indicators relative to the amount due to measurement error, was calculated for each scale. All scales exceeded Chin's (1998) guideline of 0.5, meaning that at least 50% of the variance in the indicators was

accounted for by its respective construct. To assess discriminant validity, the correlations of the items with their intended constructs was examined; all items correlated most strongly with their intended construct. The square root of the AVE for each construct exceeded all inter-construct correlations, providing further evidence of discriminant validity. Table 1 provides a summary of the results of these measurement model analyses.

		# of Items	Response Mean	Std. Dev.	Cronbach's Alpha	Internal Consistency	AVE	1	2	3	4	5	6
	Table 1. Convergent and Discriminant Validity												
1	Information Quality	3	5.28	0.80	0.92	0.95	0.86	**0.93**					
2	System Quality	3	5.17	0.81	0.93	0.95	0.79	0.81	**0.89**				
3	Service Quality	3	5.31	0.75	0.83	0.92	0.85	0.72	0.69	**0.92**			
4	Trust	3	5.06	0.96	0.89	0.93	0.82	0.78	0.76	0.83	**0.91**		
5	Satisfaction	5	5.07	1.08	0.97	0.98	0.90	0.68	0.61	0.66	0.74	**0.95**	
6	Intention to Purchase	4	5.07	1.33	0.97	0.98	0.92	0.52	0.50	0.55	0.59	0.60	**0.96**

[1] Diagonal elements are the square root of Average Variance Extracted

Data Analysis and Results

Hypotheses were tested by examining the size and significance[1] of structural paths in the PLS analysis and the percentage of variance explained. These results are reported in Figure 2.

Figure 2. PLS Path Model
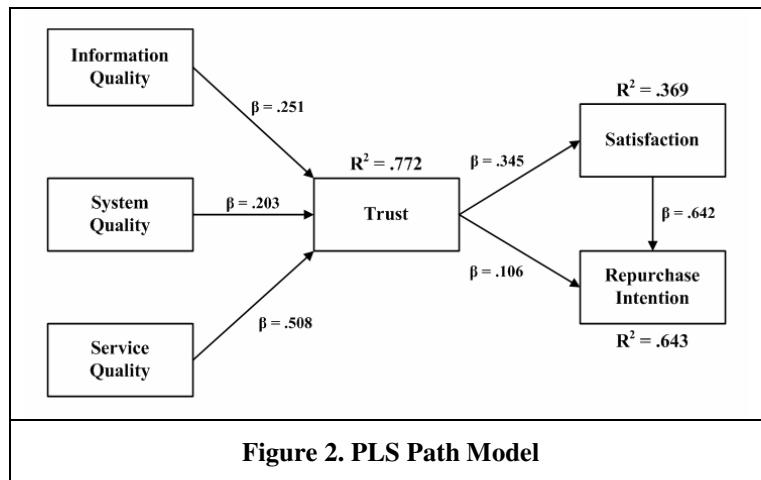
First, the model explained 77.2% of the variance in trust. As hypothesized, information quality (H1, ß = 0.251, p<.05), system quality (H2, ß = 0.203, p<.05), and service quality (H3, ß = 0.508, p<.05) all significantly influenced trust. Second, as hypothesized, service quality had a stronger influence on trust than either information quality or system quality. Third, the model explained 36.9% of the variance in satisfaction. Trust (H5, ß = 0.345, p<.05) significantly influenced satisfaction. Fourth, the model explained 64.3% of the variance in repurchase intentions.

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[1] PLS produces standardized regression coefficients for structural paths. Bootstrapping techniques, a nonparametric approach for estimating the precision of paths, were used to test for significance using 500 re-samples.

Trust (H6, ß = 0.106, p<.05) and satisfaction (H7, ß = 0.642, p<.05) both had positive influences on repurchase intentions.

Discussion

While attracting first-time customers was the initial challenge for e-retailers (McKnight et al. 1998), due to increased competition, the new challenge that e-retailers are faced with is retaining customers (Vatanasombut et al. 2004). Although the extant literature has investigated the pertinence of quality and trust in the context of e-commerce, these two parallel literatures have not yet been integrated. The model developed in this paper integrates these two streams and finds trust to be a mediator between quality and the downstream variables of satisfaction and repurchase intentions. Moreover, while each type of quality is found to have a positive impact on building trust, service quality has the strongest impact on trust, followed by information quality then system quality. Finally, satisfaction plays an integral role in an online consumer's intention to repurchase from a particular website.

This work makes several contributions to research. First, it explicates the role of trust in the context of e-commerce. Specifically, trust is found to mediate the relationship between quality and both satisfaction and repurchase intentions. Second, by incorporating information and system quality with service quality, it synthesizes the IS and marketing literature on quality. Furthermore, by doing this, it examines characteristics related to the website as well as the e-retailer itself. Third, related to this, the quality constructs capture multiple stages of the purchasing process. Fourth, it clarifies the role of satisfaction in the context of e-commerce, suggesting that satisfaction impacts repurchase intentions.

There are also several practical implications that come about from this work. Managers interested in building customer loyalty and increasing repurchase intentions should concentrate on building trust and satisfaction. While trust is a mechanism for building satisfaction, quality is a mechanism for building trust. Although each type of quality has a positive impact on trust, service quality should be the main focus for building trust, followed by information quality then system quality.

Limitations

There are several limitations to this study. First, due to the fact that this study utilized cross-sectional survey data, relationships of causality must be viewed conservatively. Second, because the sample was made up of self-selected respondents, it may not be representative of all online shoppers. Specifically, it is possible that the sample may be biased towards individuals who are more technologically advanced, as the survey was administered online. Thus, issues of generalizability may exist. Third, there is a potential for common method bias, as all of the data came from one group of respondents.

Future Directions for Research

This research presents an early, working attempt at the development of a model of e-commerce repurchase intentions that integrates literature on trust and quality from an information systems and marketing perspective. While the model and analysis presented in this paper represent an important first step, several aspects related to this study need additional development. For example, although this paper adopts a uni-dimensional view of trust, extant research has conceptualized trust as a multi-dimensional construct (McKnight et al. 2002). Thus, future work should examine the impact of the sub-components of trust (i.e. ability, benevolence, and integrity) in order to provide a richer understanding of the role of trust on customer retention. Additionally, as with prior research in this area, future work should examine the effects of moderators, such as the level of involvement with the product, perceived risk, or the level of experience with online shopping (Gefen et al. 2003; Schlosser et al. 2006). Lastly, this paper incorporates three of the four dimensions of the value chain explicated by extant research, namely, service, information, and technology (i.e. system) (Porter and Millar 1985). Future work should investigate the pertinence of the fourth dimension, that is, the actual product.

Conclusion

How can e-retailers retain customers and prevent them from defecting to other websites? This research suggests that e-retailers may be able to build customer loyalty and retain customers by building trust. Trust, in turn, can be built by focusing on information, system, and service quality. Thus, by integrating the quality literature from both IS and marketing with the trust literature, this paper provides e-retailers with a solution to the issue of customer retention.

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