E-service Quality Impact on Online Customer's
Perceived Value and Loyalty

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Although the internet is a popular shopping medium for global consumers, research into the issues of online shopping is still scarce. This study attempts to serve as a basis for internet marketing by employing a holistic model to conceptualize e-service quality. The survey results from 444 college students suggest that the three dimensions of e-service quality: interaction quality, environmental quality, and outcome quality, do have significant impacts on online customer's perceived value and loyalty. Both utilitarian and hedonic values are positively related to customer loyalty. This study concludes with discussions of managerial implications and directions for future research.

Keywords: e-service quality, interaction quality, environment quality, outcome quality, utilitarian value, hedonic value, loyalty

Introduction

With the increasing prevalence of the internet, online shopping is now popular globally. According to the results of Nielsen's 2008 consumer report, over 85 percent of the world's online population has made a purchase on the internet and 60 percent of online shoppers say that they buy mostly from the same site. This finding implies that online shoppers tend to be relatively loyal (Shankar, Smith, & Rangaswamy, 2003) and therefore, electronic retailers (e-tailers) should capture the loyalty of online shoppers if they desire to succeed in this prosperous virtual market. Past studies suggest that customer perceived value has a significant influence on customer loyalty (Brodie, Whittome, & Brush, 2009; Carpenter & Fairhurst, 2005; Chiu, Hsieh, Li, & Lee, 2005; Gallarza & Saura, 2006; Gruen, Osmonbekov, & Czaplewski, 2006; Jones, Reynolds, & Arnold, 2006; C. K. Lee, Yoon, & S. K. Lee, 2007). To develop customer loyalty, e-tailers should not only explore the core

values that their customers pursue but also excel in delivering those core values to them (Lee & Overby, 2004; Overby & Lee, 2006).

Previous research in customer perceived value focuses on two types of value: utilitarian and hedonic (Babin, Darden, & Griffin, 1994; Carpenter & Fairhurst, 2005; Chiu et al., 2005; Cottet, Lichtlé, & Plichon, 2006; Dholakia & Uusitalo, 2002; Huang, 2003; Jones et al., 2006; Lee & Overby, 2004; Overby & Lee, 2006; To, Liao, & Lin, 2007; Wolfinbarger & Gilly, 2001). These two types of value are indicated to be the primary motivation of online shopping (Dholakia & Uusitalo, 2002; Lee & Overby, 2004; Wolfinbarger & Gilly, 2001) and are also important determinants of behavioral intentions (Overby & Lee, 2006; To et al., 2007). Despite past studies demonstrate customer perceived value plays a critical role in the internet shopping environment, they mainly concentrate on the off-line context (Lee & Overby, 2004). Due to the rapid growth of electronic commerce in recent years (Dholakia & Uusitalo, 2002; Lee & Overby, 2004; To et al., 2007; Yang, Peterson, & Cai, 2003), there is a call for more empirical studies to investigate the relationship between customer perceived value and behavioral outcomes as well as explore the crucial antecedents of customer perceived value within the online context.

Service quality is one of the crucial antecedents of customer perceived value in the off-line shopping context (Brodie et al., 2008; Choi et al., 2004; Cronin, Brady, & Hult, 2000; Hellier, Geursen, Carr, & Rickard, 2003; Petrick, 2004; Sweeney, Soutar, & Johnson, 1997; Wang, Lo, & Yang, 2004). However, relatively little empirical research investigates the relationship between service quality and customer perceived value in the internet shopping environment. As consumers encounter different shopping experiences in online and offline contexts, such as the physical absence of products (Choi et al., 2004), the lack of some sensory appeals (Eroglu, et al., 2001), and the means of impersonal communication through the website (Yang et al., 2003), the existing concepts of service quality in an offline context may be inadequate in an online context (Demangeot & Broderick, 2007; Wolfinbarger & Gilly, 2003). Consequently, there is a need to gain a better understanding of the impact of electronic service quality (e-service quality) on online customers' perceptions of shopping values and their loyalty. This study aims to fill this research gap by developing a holistic model to explore the impact of e-service quality on online customer's perceived value and loyalty.

Many studies suggest that e-service quality is an important determinant for the success of e-tailers (Ahn, Ryu, & Han, 2007; Bauer, Falk, & Hammerschmidt, 2006; Fassnacht & Koese, 2006; Lee & Lin, 2005; Santos, 2003; Trocchia & Janda, 2003; Xing & Grant, 2006; Zeithaml, 2002), but despite this, research into this issue is still lacking (Trocchia & Janda, 2003) and managing e-service quality has become a critical challenge for e-tailers (Bauer et al., 2006). As Santos (2003) comments "research into service quality issues in e-commerce is still in its infancy", the literature on conceptualizing and measuring the concept of e-service quality is quite diverse and lacks consensus. Hence, this article first looks into the nature of online shopping before exploring its impacts on internet shopping. Differing to off-line shopping, online shopping consists of various sub-processes, such as information search, navigation, online transaction, customer service interactions, delivery and satisfaction with the ordered product (Lee & Lin, 2005; Wolfinbarger & Gilly, 2003). As a result, the conceptualization and measurement of e-service quality should not only include both customer services and information systems (Yang et al., 2003), but also cover all cues and encounters occurring before, during, and after the electronic service delivery (Bauer et al., 2006).

In accord with the works of Brady and Cronin (2001) and Fassnacht and Koese (2006), e-service quality is referable as a hierarchical construct with three dimensions: interaction quality, environment quality, and

outcome quality, and each dimension incorporates two or three sub-dimensions. By employing this hierarchical, multi-dimensional model, this study aims to explore the impact of each dimension of e-service quality, that is, interaction quality, environment quality and outcome quality, on the internet shoppers' perceived utilitarian and hedonic values as well as on their loyalty. The findings of this study will provide e-tailers with valuable insights to help them find the critical components of e-service quality so that they can formulate appropriate marketing strategies to enhance their customers' perceived values and to further capture customers' loyalty. Moreover, this study also makes contributions to the electronic marketing literature by proposing a holistic and comprehensive model to conceptualize and advance our knowledge of e-service quality.

Theoretical Background and Hypothesis

E-service Quality

Service quality is a popular research issue for service marketing academics (Choi et al., 2004; Collier & Bienstock, 2006; Parasuraman, Zeithaml, & Berry, 1988; Park, Robertson, & Wu, 2004; Wang, Lo, & Yang, 2004). Studies concerning service quality split into two approaches, that of conceptualizing and measuring service quality (Brady & Cronin, 2001; Cronin & Taylor, 1992; Parasuraman et al., 1988) and that of examining its effects on consumers' behavioral intentions (Babakus & Yavas, 2008; Brodie et al., 2008; Caruana, Money, & Berthon, 2000; Choi et al., 2004; Cronin et al., 2000; Fullerton, 2005; Park et al., 2004; Petrick, 2004; Wang et al., 2004; Zeithaml, 1988). With the rapid growth of electronic commerce in recent years, researchers have moved into studying the role of service quality in the online shopping context (Lee & Lin, 2005; Park & Kim, 2003; Santos, 2003; Singh, 2002; Trocchia & Janda, 2003; Yang et al., 2003; Zeithaml, 2002). E-service quality, defined as "the consumers' overall evaluation and judgment of the excellence and quality of e-service offerings in the virtual marketplace" (Santos, 2003), has significant impacts on the success of e-tailers (Ahn et al., 2007; Bauer et al., 2006; Fassnacht & Koese, 2006; Lee & Lin, 2005; Santos, 2003; Trocchia & Janda, 2003; Xing & Grant, 2006; Zeithaml, 2002).

Despite e-service quality plays a critical role in electronic retailing, the conceptualization and measurement of it is still diverse and desultory. The reason is that e-service quality originates from the literature of traditional service and internet marketing (Santos, 2003). The lack of consensus concerning the nature or the scope of e-service quality dimensions (Fassnacht & Koese, 2006; Ribbink, van Riel, Liljander, & Streukens, 2004) results in different approaches and outcomes as well as the existence of research gaps (Bauer et al., 2006; Fassnacht & Koese, 2006). Therefore, the literature on e-service quality calls for its more complete and comprehensive understanding and conceptualization.

Due to the unique characteristics of online shopping (Collier & Bienstock, 2006; Lee & Lin, 2005; Wolfinbarger & Gilly, 2003), the conceptualization and measurement of e-service quality encompasses the two facets of customer services and information systems (Yang et al., 2003) and includes all factors related to the process of service delivery (Bauer et al., 2006). Fassnacht and Koese (2006) contend that e-service is a higher-order construct consisting of three dimensions of environment quality, delivery quality, and outcome quality. Their model is akin to that of Brady and Cronin (2001), which conceptualizes service quality as a hierarchical construct with three dimensions including interaction quality, environment quality, and outcome quality. Additionally, Collier and Bienstock (2006) posit that the conceptualization of e-service quality should be based on the way customers judge it and, thus, they develop their model by incorporating the process, outcome, and recovery of a service experience.

This study is in agreement with the contention of Fassnacht and Koese (2006), in that, e-service quality is a hierarchical, multi-dimensional construct which encompasses three dimensions of interaction quality, environment quality, and outcome quality as proposed by Brady and Cronin (2001). Interaction quality refers to the quality in relevant to the process of interaction between service providers and customers and consists of three subdimensions: responsiveness (Lee & Lin, 2005; Ribbink et al., 2004; Yang et al., 2003), ease of use (Collier & Bienstock, 2006; Fassnacht & Koese, 2006; Ribbink et al., 2004), and information quality (Collier & Bienstock, 2006; Fassnacht & Koese, 2006; Park & Kim, 2003). Environment quality pertains to the customer's perceived quality of the appearance of the user interface on the Web site (Fassnacht & Koese, 2006) and encompasses two sub-dimensions: visual appearance (Fassnacht & Koese, 2006; Lee & Lin, 2005; Santos, 2003; Yang et al., 2003) and clarity of layout (Fassnacht & Koese, 2006; Santos, 2003). Outcome quality refers to what customers perceive when service is rendered (Brady & Cronin, 2001) and incorporates three sub-dimensions: order fulfillment (Collier & Bienstock, 2006), reliability (Fassnacht & Koese, 2006; Lee & Lin, 2005; Yang et al., 2003), and emotional benefits (Fassnacht & Koese, 2006; Petrick, 2004).

Customer Perceived Value

Results of previous research indicate that consumers shop either for efficiency (functional objectives) or for fun (experiential objectives) (Arnold & Reynolds, 2003; Babin et al., 1994; Cottet et al., 2006; Dawson, Bloch, & Ridgway, 1990; Dholakia, 1999; Holbrook & Hirschman, 1982; Jones et al., 2006). Babin et al. (1994) regard value as the key outcome variable in a general model of consumption experience which characterizes a subject's experience of interacting with some things or events, and they identify two types of shopping value, namely, utilitarian value and hedonic value. Utilitarian value is relevant to rational and goal-directed shopping behaviors and is attainable from deliberate and efficient product acquisition, while hedonic value is more subjective and personal and arises from fun and the playfulness of the shopping experience rather than fulfillment of the shopping task (Babin et al., 1994; Cottet et al., 2006; Lee & Overby, 2004). Previous studies intensively investigate both utilitarian and hedonic values in conventional retail contexts and suggest that they both have a positive impact on customer satisfaction (Carpenter & Fairhurst, 2005; Cottet et al., 2006; Jones et al., 2006) and customer loyalty (Chiu et al., 2005; Jones et al., 2006).

Wolfinbarger and Gilly (2001) examine the motivation of online shoppers and identify two kinds of online shoppers: goal-oriented (utilitarian) and experiential (hedonic). Goal-oriented customers shop online for the sake of freedom and control and they desire to purchase what they want quickly and efficiently, whereas experiential customers shop online for the sake of fun and desire to be entertained and immersed in the shopping experience. In other words, goal-oriented online shoppers are task-oriented and focus on utilitarian value, while experiential online shoppers are fun-oriented and emphasize on hedonic value. Many other studies also explore these two types of value in virtual markets (Dholakia & Uusitalo, 2002; Kervenoael, Soopramanien, Elms, & Hallsworth, 2006; Lee & Overby, 2004; Overby & Lee, 2006; To et al., 2007).

Besides examining the impact of perceived value on online shopping, previous research investigates the antecedents of customer shopping value as well (Brodie et al., 2008; Choi et al., 2004; Cronin et al., 2000; Hellier et al., 2003; Petrick, 2004; Sweeney et al., 1997; Wang et al., 2004) and the results imply that service quality is one of the crucial antecedents of customer perceived value. When shopping online, customers interact intensively with computers, therefore, the characteristics of information presentation and navigation are critical factors in building electronic trust (Park & Kim, 2006). Most online customers view internet as an important

source of information acquisition (Trocchia & Janda, 2003). Goal-oriented consumers tend to collect necessary product information before generating their purchase intention (Moe, 2003) and they treat the acquisition of information as a means to resolve uncertainty (Huang, 2003). Additionally, prior findings reveal that information availability is positively related to online shoppers' utilitarian motivation (To et al., 2007; Wolfinbarger & Gilly, 2001). Besides information acquisition, consumers also surf a website for entertainment. Huang's (2003) study indicates that interactivity is one of the three broad categories for website attributes and it positively impacts the control, curiosity, and interest components of flow. The results show that Web users have a sense of control when they are engaged in Web activities, such as navigation and searching, and this kind of sense enhances their enjoyment.

H1a: Interaction quality has a positive impact on the utilitarian value for online shoppers.

H1b: Interaction quality has a positive impact on the hedonic value for online shoppers.

Website design refers to the appeal of the user interface design presented to customers (Lee & Lin, 2005). It plays a critical role in online shopping owing to its function of communicating the e-tailer's image to visitors and for making customers surfing experience enjoyable (Yang et al., 2003). Therefore, it influences customers' judgment about a website (Collier & Bienstock, 2006). Website design comprises two facets: visual appearance and clarity of layout. Visual appearance relates to the proper use of colors, graphics, images, animations, and so on (Santos, 2003), while clarity of layout associates with the design structure of the user interface to help users find their way effectively (Fassnacht & Koese, 2006). Past research indicates that online customers visit websites not only for information but also for entertainment and fun (Huang, 2003; Lee & Overby, 2004). By using aesthetic appeal and design, e-tailers are able to create a visual appeal for online shoppers (Lee & Overby, 2004), and such a visual appeal can offer online shoppers immediate pleasure for its own sake (Mathwick, Malhotra, & Rigdon, 2001). The amount of fun, playfulness, and pleasure which online shoppers experience from a website affects their perceptions of hedonic benefits offered by the e-tailer (Carpenter & Fairhurst, 2005; Huang, 2003). The clarity of layout is positively associated with consumers' perception of the quality of a website (Ahn et al., 2007). Simple, clear, and consistent layout allows online customers to skip sections they are not interested in (Santos, 2003) and saves their time in searching and processing information, as well as minimizing their efforts in accomplishing purchasing tasks (Park & Kim, 2006). Therefore, it can enhance online customers' perceptions of utilitarian benefits derived from shopping.

H2a: Environment quality has a positive impact on the utilitarian value for online shoppers.

H2b: Environment quality has a positive impact on the hedonic value for online shoppers.

One of the major reasons for shopping online is convenience (Dholakia & Uusitalo, 2002; Kervenoael et al., 2006; To et al., 2007; Wolfinbarger & Gilly, 2001; Yang et al., 2003). Heinonen (2004) indicates that convenience is a construct related to temporal and spatial aspects of service delivery, which occurs in many cases at the time and location determined by customers. The results from Overby and Lee (2006) reveal that online customers shop on internet mainly for utilitarian reasons such as price savings and convenience. Outcome quality is relevant to timeliness, accuracy, and conditions of orders fulfilled by e-tailors (Collier & Bienstock, 2006). With timely, accurate, and error-free order fulfillment, e-tailers can offer their customers benefits, such as saving time and convenience of shopping without being restricted by store hours or store location (Dholakia & Uusitalo, 2002). Order fulfillment provides online shoppers with the value of time and space and allows shoppers to accomplish their purchasing tasks in a deliberate and efficient manner, therefore, it increases the utilitarian value of online shopping. Moreover, order fulfillment also provides online customers

with the benefits of perceived freedom and fantasy fulfillment, which may indicate a hedonically valuable shopping experience (Babin et al., 1994). Emotional benefit describes the degree to which online service arouses positive feelings (Fassnacht & Koese, 2006). When online customers consider their purchase from an e-tailer to be enjoyable or fun, they receive hedonic benefits because the perceived enjoyment itself is an important hedonic benefit resulting from shopping activities (Babin et al., 1994).

H3a: Outcome quality has a positive impact on the utilitarian value for online shoppers.

H3b: Outcome quality has a positive impact on the hedonic value for online shoppers.

Customer Loyalty

Customer loyalty receives researchers' attention because studies indicate that customer loyalty can help retailers either gain more financial profits (Babakus & Yavas, 2008; Bustos-Reyes & González-Benito, 2008; Evanschitzky & Wunderlich, 2006; Oliver, 1999; Russell-Bennett, McColl-Kennedy, & Coote, 2007) or achieve a sustainable competitive advantage (Bustos-Reyes & González-Benito, 2008; Kwon & Lennon, 2008; Oliver, 1999). Oliver (1999) defines loyalty as "a deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future". Past research suggests that a loyal customer tends to rebuy or repatronize a preferred product/service/retailer (Brodie et al., 2008; Gallarza & Saura, 2006; Gruen et al., 2006; Russell-Bennett et al., 2007) and further makes recommendations to others (Brodie et al., 2008; Gruen et al., 2006; Kwon & Lennon, 2008; Lee et al., 2007). Due to its critical role for financial outcomes, several researchers investigate the antecedents of customer loyalty and the findings indicate that customer perceived values have significant impact on customer loyalty (Brodie et al., 2008; Carpenter & Fairhurst, 2005; Chiu et al., 2005; Gallarza & Saura, 2006; Gruen et al., 2006; Jones et al., 2006; Lee et al., 2007).

H4a: Utilitarian value has a positive impact on online customer loyalty.

H4b: Hedonic value has a positive impact on online customer loyalty.

Method

Data Collection

Data were collected from the students in four universities in Taiwan via a self-administered questionnaire method. College students are selected as samples because several past studies indicate they are appropriate research subjects for online shopping (Ahmad, 2002; Lee & Lin, 2005; Lim & Dubinsky, 2004). A total number of 700 questionnaires were distributed to both undergraduate and graduate students in campuses. After excluding incomplete and non-usable data, the final sample size of this study is 444.

Measures

To test the conceptual model of this study, we employed a self-administered questionnaire to measure online customers' perceptions of service quality and perceived value, as well as the customer's loyalty toward the e-tailers. Conceptualization of the six constructs of the model and items for measuring them were developed drawing on previous research in the marketing literature. A total number of 32 items were employed to capture the latent constructs and all items were measured by using a 7-point Likert-type scale, ranging from 1 (strongly disagree) to 7 (strongly agree). The construct of interaction quality was captured by the three variables: ease of use (Ribbink et al., 2004), responsiveness (Lee & Lin, 2005; Yang et al., 2003), and information quality (Fassnacht & Koese, 2006). Each variable was measured by three items adopted and modified from past studies. The construct of environment quality consisted of two variables, namely, visual appearance and clarity of

layout, and each variable was measured by three items. Measures for visual appearance were drawn from Lee and Overby (2004) and measures for clarity of layout were adopted from Fassnacht and Koese (2006). The construct of outcome quality was measured with three items of order fulfillment (Collier & Bienstock, 2006), three items of reliability (Lee & Lin, 2005), and three items of emotional benefit (Petrick, 2004). Online customer's perceived value was divided into two facets of utilitarian value and hedonic value. Either construct of utilitarian value or hedonic value was captured by three measures developed by Overby and Lee (2006). The construct of customer loyalty was measured with two items developed and modified from Ribbink et al. (2004).

Sample Characteristics

The sample profile of the 444 online customers is as follows. The distribution of gender is skewed toward females (58.1 percent). The majority of age falls in the category of 18 to 21 (66.3 percent) and 22 to 30 years old (26 percent). The disposable income per month under NT$10,000 is close to 86 percent (income in New Taiwan dollars (NT$); exchange rate as of August 29, 2008: US$1 = NT$31.7). Of the respondents, 87 percent are undergraduate students and 12 percent are graduate students.

Results

Measurement Model

The study uses the partial least squares (PLS) method of structural equation modeling (Visual PLS version 1.04) to test the research model owing to the capability of PLS in handling formative constructs in a highly complex predictive model. Unlike reflective indicators, whereby the latent variable causes the observed variables, formative indicators can be viewed as "causing rather than being caused by the latent variable measured by the indicators" (Arnett, Laverie, & Meiers, 2003). The acceptability of the measurement model was assessed by the reliability of individual items, internal consistency between items, and the model's convergent and discriminant validity.

Convergent validity is assessed by: (1) reliability of items; (2) composite reliability (CR) of constructs; and (3) average variance extracted (AVE) (Bagozzi & Yi, 1988; Hu, Whinston, & Zhang, 2004). Examining each item's loading on its corresponding construct assesses the items reliability. Bagozzi and Yi (1998) suggest that, as a rule of thumb, the item loading from CFA should exceed 0.7. In this study, the loading of each item meets this criterion (see Table 1). With regard to internal consistency (reliability of cronbach α), the composite reliability scores for every construct (ranging from 0.70 to 0.94, as shown in Table 1) are well above 0.70, which is the suggested benchmark for acceptable reliability (Bagozzi & Yi, 1998; Fornell & Larcker, 1981). AVE measures the amount of variance that a construct captures from its indicators in relation to the amount due to measurement errors (Chin, 1998), and is recommended to exceed 0.5 (Hu et al., 2004). Table 2 shows that the AVE score for every construct, ranging from 0.62 to 0.88, satisfies this requirement.

Discriminant validity is assessed by examining: (1) factor analysis results; and (2) the relationship between correlations among constructs and the square roots of AVE (Chin, 1998; Fornell & Larcker, 1981). Factor analysis results (see Table 1) show good discriminant validity because all of the measurement items load highly on their own constructs but not highly on other constructs. Another criterion is that the square roots of AVE should be greater than the correlations among the constructs, which indicates that more variance is shared between the construct and its indicators than with other constructs (Fornell & Larcker, 1981). Table 2 shows that the square roots of all the AVE (i.e., the numbers on the diagonal) are greater than the correlations among constructs (i.e., the off-diagonal numbers), indicating satisfactory discriminant validity of all the constructs.

Table 1

Loading Values, CR and Cronbach α of the Model

Interaction quality (formative)			Loading value	CR	Cronbach α
Ease of use	E1	It is easy to get access to this e-tailer's Web site.	0.76	0.89	0.81
	E2	This site is user friendly.			
	E3	Navigation on this site is easy.			
Responsiveness	R1	This e-tailer is willing to quickly solve problems for me.	0.91		
	R2	I think this e-tailer gives prompt service.			
	R3	I believe this e-tailer is always willing to help customers.			
Information quality	I1	This e-tailer provides up-to-date information.	0.87		
	I2	This e-tailer presents information that is easy to understand.			
	I3	This e-tailer provides all the information necessary.			
Environment quality (formative)					
Visual appearance	V1	This e-tailer's site is aesthetically appealing.	0.79	0.86	0.70
	V2	The "look" of this Web site is appealing.			
	V3	This e-tailer's site is visually appealing.			
Clarity of layout	C1	The layout of the Web site enables the user to find important things at first sight.	0.94		
	C2	Everything on this Web site is clearly arranged.			
	C3	The layout of this Web site provides a clear structure.			
Outcome quality (formative)					
Order fulfillment	O1	This e-tailer's orders are protectively packaged when shipped.	0.74	0.83	0.79
	O2	My orders from this e-tailer rarely contain the wrong items.			
	O3	The time between placing and receiving an order is short.			
Reliability	Re1	Transactions with this e-tailer are error-free.	0.63		
	Re2	This e-tailer has adequate security.			
Emotional benefit	E1	Making a purchase from this e-tailer is enjoyable.	0.96		
	E2	Making a purchase from this e-tailer makes me feel good.			
	E3	Making a purchase from this e-tailer gives me happiness.			
Utilitarian value (reflective)					
Utilitarian value	UV1	This e-tailer offers good economic value.	0.87	0.88	0.78
	UV2	Overall, I am happy with this e-tailer's prices.	0.88		
	UV3	When I make a purchase from this e-tailer, I save time.	0.77		
Hedonic value (reflective)					
Hedonic value	HV1	Making a purchasing from this e-tailer truly feels like "an escape".	0.75	0.86	0.76
	HV2	This e-tailer does not just sell products or services—it entertains me.	0.88		
	HV3	Making a purchase from this e-tailer helps me forget about the day's problems.	0.82		
Loyalty (reflective)					
loyalty	L1	I would like to continue doing business with this e-tailer.	0.93	0.94	0.86
	L2	I would like to recommend this e-tailer to others.	0.94		

Structural Model

In PLS analysis, examining the R2 scores (i.e., variance accounted for) of endogenous variables and the structural paths assesses the explanatory power of a structural model. In this study, the model accounts for 28 to 54 percent of the variances (R2 scores) in Figure 1. Thus, the fit of the overall model is good.

Table 2

AVE and Correlation Among Latent Constructs

Construct	AVE	IQ	EQ	OQ	UV	HV	L
Interaction quality (IQ)	0.72	0.85					
Environment quality (EQ)	0.75	0.66	0.87				
Outcome quality (OQ)	0.62	0.70	0.64	0.79			
Utilitarian value (UV)	0.70	0.59	0.54	0.66	0.84		
Hedonic value (HV)	0.67	0.35	0.38	0.44	0.45	0.82	
Loyalty (L)	0.88	0.50	0.45	0.56	0.55	0.40	0.94

Note. Diagonal elements are the square roots of average variance extracted (AVE).
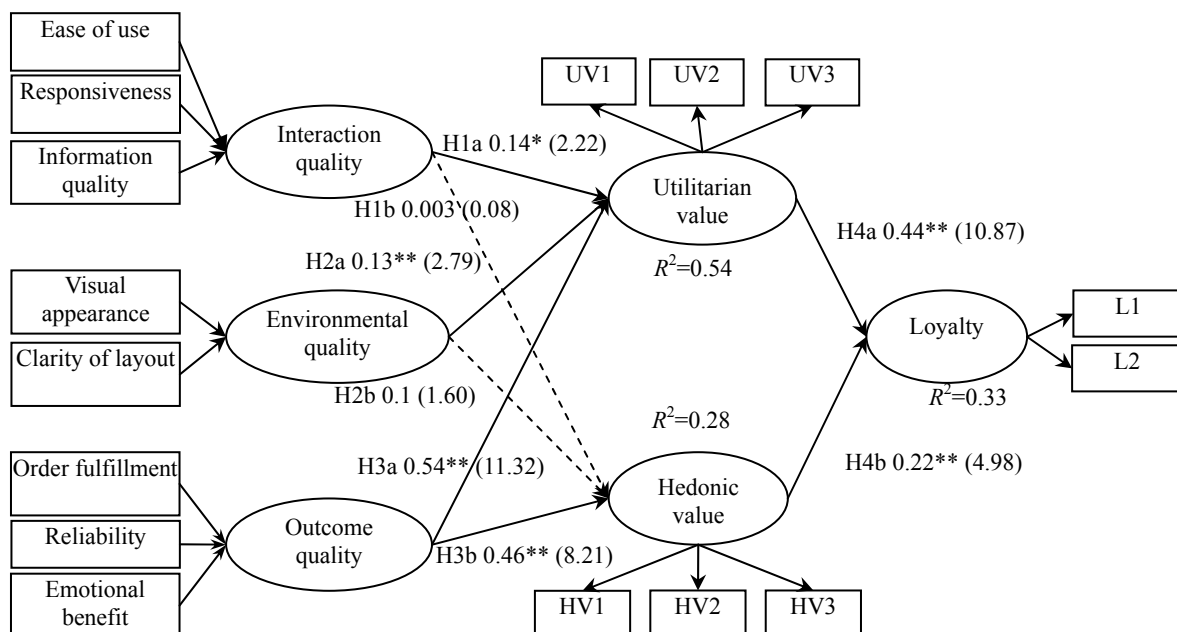

Figure 1. The results of the empirical study. Notes. * significant at 0.05 level; ** significant at 0.01 level, Path coefficients with *t*-values in parentheses.

The PLS analysis results show that all the hypotheses except two are supported, thus the proposed theoretical model in Figure 1 is empirically supported. Interaction quality significantly increases utilitarian value (H1a,β = 0.14, p < 0.05), but not hedonic value (H1b,β = 0.003, p > 0.05). Environmental quality significantly increases utilitarian value (H2a,β = 0.13, p < 0.05), but does not have significant effects on hedonic value (H2b,β = 0.1, p > 0.05). Outcome quality increases utilitarian value (H3a,β = 0.54, p < 0.01) and hedonic value (H3b,β = 0.46, p < 0.01) significantly. Utilitarian value and hedonic value significantly increase loyalty (H4a,β = 0.44, p < 0.01; H4b,β = 0.22, p < 0.01).

Conclusions and Discussions

Despite the internet is a globally popular shopping medium, research into the issue of e-service quality is still deficient (Trocchia & Janda, 2003). This study attempts to fill the research gap by employing a holistic model which conceptualizes e-service quality as a hierarchical multi-dimensional construct to explore the impacts of e-service quality on the internet shoppers' perceived value and loyalty. The results of this study

indicate that e-service quality does play an important role in affecting online shoppers' perceived value, while each dimension of e-service quality has different influences. Among the three dimensions of e-service quality, outcome quality seems to deserve the most attentions of e-tailers because it is positively related to the utilitarian and hedonic values of online customers. Unlike interaction quality and environment quality, which appear to have influences only on utilitarian value, outcome quality can significantly enhance both utilitarian and hedonic values. Moreover, if e-tailers are to increase the hedonic value of their customers, the only means to achieve this objective is through the enhancement of outcome quality rather than interaction quality and environment quality. Additionally, this study shows both utilitarian and hedonic values have positive impacts on online customer's loyalty. Overall, the results of this research are in accordance with past empirical research conducted in physical stores (Brodie et al., 2008; Choi et al., 2004; Cronin et al., 2000; Hellier et al., 2003; Petrick, 2004; Sweeney et al., 1997; Wang et al., 2004). Our findings suggest that service quality is a critical antecedent variable of customers' perceived value no matter in the offline or in the online shopping context.

Managerial Implications

As some researchers find e-service quality is an important influence of the success of electronic companies (Ahn et al., 2007; Bauer et al., 2006; Fassnacht & Koese, 2006; Lee & Lin, 2005; Santos, 2003; Trocchia & Janda, 2003; Xing & Grant, 2006; Zeithaml, 2002), e-tailers have to provide excellent service quality to their customers. This study provides valuable insights for e-tailers to develop appropriate marketing strategies to enhance their customers' perceived values and capture their loyalty. Moreover, our results also indicate that consumers shop online primarily motivated by utilitarian values rather than by hedonic values, which concurs with the findings of previous research (Lee & Overby, 2004; Overby & Lee, 2006; To et al., 2007; Wolfinbarger & Gilly, 2001). To capture and develop customer loyalty, e-tailers can enhance online shoppers' perceived utilitarian value by means of improving interaction quality, environment quality, or outcome quality. E-tailers can increase their customers' perceptions of interaction quality through many methods, such as making website navigation easy, responding quickly to customers' inquiries or requests, and providing timely, accurate, and necessary information. To enhance customers' perceptions of environment quality, e-tailers can endeavor to improve website design to make it aesthetically appealing or ensure it is structurally organized. Enhancing outcome quality is the most significant issue because it can increase both utilitarian and hedonic values, and in this respect, e-tailers can devote attention to improving logistics in order to fulfill orders to customer satisfaction or they can improve customer services to gain their positive reactions.

Limitations and Future Research

As with all empirical studies, this study suffers from limitations. First, this study employs convenience samples, that is, college students, instead of random samples. Though college students are likely suitable for studies in online shopping (Ahmad, 2002; Lee & Lin, 2005; Lim & Dubinsky, 2004), the use of college students may weaken or bias generalizability of the results owing to the homogeneous characteristics of students. Future research can employ randomly selected samples to ensure the generalizability of the findings and to increase the external validity of the research. Second, this study only examines two types of value, namely, utilitarian value and hedonic value. Some studies argue that value can be more complex (Lee & Overby, 2004; Overby & Lee, 2006). Future research can examine other types of value, such as functional value, emotional value, and social value to explore more preferred values sought by online customers.

References

Ahmad, S. (2002). Service failures and customer defection: A closer look at online shopping experiences. *Managing Service Quality, 12*(1), 19-29.

Ahn, T., Ryu, S., & Han, I. (2007). The impact of web quality and playfulness on user acceptance of online retailing. *Information & Management, 44*(3), 263-275.

Arnett, D. B., Laverie, D. A., & Meiers, A. (2003). Developing parsimonious retailer equity indexes using partial least squares analysis: A method and applications. *Journal of Retailing, 79,* 161-170.

Arnold, M. J., & Reynolds, K. E. (2003). Hedonic shopping motivations. *Journal of Retailing, 79,* 77-95.

Babakus, E., & Yavas, U. (2008). Does customer sex influence the relationship between perceived quality and share of wallet? *Journal of Business Research, 61*(9), 974-981.

Babin, B. J., Darden, W. R., & Griffin, M. (1994). Work and/or fun: Measuring hedonic and utilitarian shopping value. *Journal of Consumer Research, 20*(4), 644-656.

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science, 16*(1), 74-94.

Bauer, H. H., Falk, T., & Hammerschmidt, M. (2006). eTransQual: A transaction process-based approach for capturing service quality in online shopping. *Journal of Business Research, 59*(7), 866-875.

Brady, M. K., & Cronin, J. J. (2001). Some new thoughts on conceptualizing perceived service quality: A hierarchical approach. *Journal of Marketing, 65*(3), 34-49.

Brodie, R. J., Whittome, J. R. M., & Brush, G. J. (2009). Investigating the service brand: A customer value perspective. *Journal of Business Research, 62*(3), 345-355.

Bustos-Reyes, C. A., & González-Benito, O. (2008). Store and store format loyalty measures based on budget allocation. *Journal of Business Research, 61*(9), 1015-1025.

Carpenter, J. M., & Fairhurst, A. (2005). Consumer shopping value, satisfaction, and loyalty for retail apparel brands. *Journal of Fashion Marketing and Management, 9*(3), 256-269.

Caruana, A., Money, A. H., & Berthon, P. R. (2000). Service quality and satisfaction—The moderating role of value. *European Journal of Marketing, 34*(11/12), 1338-1350.

Chin, W. W. (1998). Issues and opinion on structural equation modeling. *MIS Quarterly, 22*(1), vii-xvi.

Chiu, H. C., Hsieh, Y. C., Li, Y. C., & Lee, M. (2005). Relationship marketing and consumer switching behavior. *Journal of Business Research, 58*(12), 1681-1689.

Choi, K. S., Cho, W. H., Lee, S., Lee, H., & Kim, C. (2004). The relationships among quality, value, satisfaction, and behavioral intention in health care provider choice: A south Korean study. *Journal of Business Research, 57*(8), 913-921.

Collier, J. E., & Bienstock, C. C. (2006). Measuring service quality in e-retailing. *Journal of Service Research, 8*(3), 260-275.

Cottet, P., Lichtlé, M. C., & Plichon, V. (2006). The role of value in services: A study in a retail environment. *Journal of Consumer Marketing, 23*(4), 219-227.

Cronin, J. J., & Taylor, S. A. (1992). Measuring service quality: A reexamination and extension. *Journal of Marketing, 56*(3), 55-68.

Cronin, J. J., Brady, M. K., & Hult, G. T. M. (2000). Assessing the effects of quality, value, and customer satisfaction on consumer behavioral intentions in service environments. *Journal of Retailing, 76*(2), 193-218.

Dawson, S., Bloch, P. H., & Ridgway, N. M. (1990). Shopping motives, emotional states, and retail outcomes. *Journal of Retailing, 66*(4), 408-427.

Dholakia, R. R. (1999). Going shopping: Key determinants of shopping behaviors and motivations. *International Journal of Retail & Distribution Management, 27*(4), 154-166.

Dholakia, R. R., & Uusitalo, O. (2002). Switching to electronic stores: Consumer characteristics and the perception of shopping benefits. *International Journal of Retail & Distribution Management, 30*(10), 459-469.

Evanschitzky, H., & Wunderlich, M. (2006). An examination of moderator effects in the four-stage loyalty model. *Journal of Service Research, 8*(4), 330-345.

Fassnacht, M., & Koese, I. (2006). Quality of electronic services: Conceptualizing and testing a hierarchical model. *Journal of Service Research, 9*(1), 19-37.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39-45.

Fullerton, G. (2005). The service quality - loyalty relationship in retail services: Does commitment matter? *Journal of Retailing and Consumer Services, 12*(2), 99-111.

Gallarza, M. G., & Saura, G. I. (2006). Value dimensions, perceived value, satisfaction and loyalty: An investigation of university students' travel behavior. *Tourism Management, 27,* 437-452.

Gruen, T. W., Osmonbekov, T., & Czaplewski, A. J. (2006). eWOM: The impact of customer-to-customer online know-how exchange on customer value and loyalty. *Journal of Business Research, 59*(4), 449-456.

Heinonen, K. (2004). Reconceptualizing customer perceived value: The value of time and place. *Managing Service Quality, 14*(2/3), 205-215.

Hellier, P. K., Geursen, G. M., Carr, R. A., & Rickard, J. A. (2003). Customer repurchase intention: A general structural equation model. *European Journal of Marketing, 37*(11/12), 1762-1800.

Holbrook, M. B., & Hirschman, E. C. (1982). The experiential aspects of consumption: Consumer fantasies, feelings, and fun. *Journal of Consumer Research, 9*(2), 132-140.

Hu, X., Lin, Z., Whinston, A. B., & Zhang, H. (2004). Hope or hype on the viability of escrow services as trusted third parties in online auction environments. *Information Systems Research, 15*(3), 236-249.

Huang, M. H. (2003). Designing website attributes to induce experiential encounters. *Managing Service Quality, 14*(2/3), 205-215.

Jones, M. A., Reynolds, K. E., & Arnold, M. J. (2006). Hedonic and utilitarian shopping value: Investigating differential effects on retail outcomes. *Journal of Business Research, 59,* 974-981.

Kervenoael, R. D., Soopramanien, D., Elms, J., & Hallsworth, A. (2006). Exploring value through integrated service solutions: The case of e-grocery shopping. *Managing Service Quality, 16*(2), 185-202.

Kwon, W. S., & Lennon, S. J. (2009). What induces online loyalty? Online versus offline brand images. *Journal of Business Research, 62*(5), 557-564.

Lee, C. K., Yoon, Y. S., & Lee, S. K. (2007). Investigating the relationships among perceived value, satisfaction, and recommendations. *Tourism Management, 28*(1), 204-214.

Lee, E. J., & Overby, J. W. (2004). Creating value for online shoppers: Implications for satisfaction and loyalty. *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior, 17,* 54-67.

Lee, G. G., & Lin, H. F. (2005). Customer perceptions of e-service quality in online shopping. *International Journal of Retail & Distribution Management, 33*(2/3), 161-176.

Lim, H., & Dubinsky, A. F. (2004). Consumers' perceptions of e-shopping characteristics: An expectancy-value approach. *The Journal of Services Marketing, 18*(6/7), 500-513.

Mathwick, C., Malhotra, N., & Rigdon, E. (2001). Experiential value: Conceptualization, measurement and application in the catalog and Internet shopping environment. *Journal of Retailing, 77*(1), 39-56.

Moe, W. W. (2003). Buying, searching or browsing: Differentiating between online shoppers using in-store navigational clickstream. *Journal of Consumer Psychology, 13*(1), 29-39.

Oliver, R. L. (1999). Whence consumer loyalty? *Journal of Marketing, 63,* 33-44.

Overby, J. W., & Lee, E. J. (2006). The effects of utilitarian and hedonic online shopping value on consumer preference and intentions. *Journal of Business Research, 59*(10/11), 1160-1166.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Marketing, 64*(1), 12-40.

Park, C. H., & Kim, Y. G. (2003). Identifying key factors affecting consumer purchase behavior in an online shopping context. *International Journal of Retail & Distribution Management, 31*(1), 16-29.

Park, C. H., & Kim, Y. G. (2006). The effect of information satisfaction and relational benefit on consumers' online shopping site commitments. *Journal of Electronic Commerce in Organizations, 4*(1), 70-90.

Park, J. W., Robertson, R., & Wu, C. L. (2004). The effect of airline service quality on passengers' behavioural intentions: A Korean case study. *Air Transport Management, 10,* 435-439.

Petrick, J. F. (2004). The roles of quality, value, and satisfaction in predicting cruise passengers' behavioral intentions. *Journal of Travel Research, 42*(5), 397-407.

Ribbink, D., van Riel, A. C. R., Liljander, V., & Streukens, S. (2004). Comfort your online customer: Quality, trust and loyalty on the Internet. *Managing Service Quality, 14*(6), 446-456.

Russell-Bennett, R., McColl-Kennedy, J. R., & Coote, L. V. (2007). Involvement, satisfaction, and brand loyalty in a small business services setting. *Journal of Business Research, 60*(12), 1253-1260.

Santos, J. (2003). E-service quality: A model of virtual service quality dimensions. *Managing Service Quality, 13*(3), 233-246.

Shankar, V., Smith, A. K., & Rangaswamy, A. (2003). Customer satisfaction and loyalty in online and offline environments. *International Journal of Research in Marketing, 20*(2), 153-175.

Singh, M. (2002). E-services and their role in B2C e-commerce. *Managing Service Quality, 12*(6), 434-446.

Sweeney, J. C., Soutar, G. N., & Johnson, L. W. (1997). Retail service quality and perceived value: A comparison of two models. *Journal of Retailing and Consumer Service, 4*(1), 39-48.

To, P. L., Liao, C., & Lin, T. H. (2007). Shopping motivations on Internet: A study based on utilitarian and hedonic value. *Technovation, 27,* 774-787.

Trocchia, P. J., & Janda, S. (2003). How do consumers evaluate Internet retail service quality. *The Journal of Services Marketing, 17*(2/3), 243-253.

Wang, Y., Lo, H. P., & Yang, Y. (2004). An integrated framework for service quality, customer value, satisfaction: Evidence from China's telecommunication industry. *Information Systems Frontiers, 6*(4), 325-340.

Wolfinbarger, M., & Gilly, M. C. (2001). Shopping online for freedom, control, and fun. *California Management Review, 43*(2), 34-55.

Wolfinbarger, M., & Gilly, M. C. (2003). eTailQ: Dimensionalizing, measuring and predicting etail quality. *Journal of Retailing, 79*(3), 183-198.

Xing, Y., & Grant, D. B. (2006). Developing a framework for measuring physical distribution service quality of multi-channel and "pure player" Internet retailers. *International Journal of Retail & Distribution Management, 34*(4/5), 278-289.

Yang, Z., Peterson, R. T., & Cai, S. (2003). Services quality dimensions of Internet retailing: An exploratory analysis. *The Journal of Services Marketing, 17*(6/7), 685-698.

Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence. *Journal of Marketing, 52*(7), 2-22.

Zeithaml, V. A. (2002). Service excellence in electronic channels. *Managing Service Quality, 12*(3), 135-138.