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Factors influencing Internet shopping value and customer repurchase intention

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ABSTRACT

This research empirically examines the effect of various Internet shopping site qualities on the utilitarian and hedonic values of Internet shopping. The influence of the perceived level of Internet shopping value on customer satisfaction and repurchase intention is also investigated. We perform structural equation analysis with a sample of 293 observations consisting of two different income groups (workforce and student). Our results show that while system and service qualities are critical factors affecting utilitarian shopping value, information and service qualities are the factors most closely associated with hedonic shopping value. These findings suggest that service quality plays a significant role in increasing both utilitarian and hedonic shopping values. Our results also show that the impact of quality factors on Internet shopping values and subsequent repurchase intention differs across the two income groups.

1. Introduction

The Internet sector has grown exponentially in the past decade, increasing its diffusive power and cross-industry impact. The Korean Internet shopping market amounted to USD 65 billion in 2009 (fifth largest among OECD nations), accounting for 5.95% of the Korean GDP; this proportion is larger than those of major Korean industries, such as electronics (5.71%) and automobiles (4.93%).[5] The rapid growth of the Korean Internet shopping industry is due to relative ease of use; shoppers can browse in a variety of online stores with no time or space restriction and fulfill their consumption behaviors without being present in the physical marketplace (Brown and Jayakody 2009, Chen and Cheng 2009, Lee et al. 2003, Sen et al. 2006). As the number of Korean Internet users increases, the volume, product types, and services offered in the e-commerce domain are expanding (Brown and Jayakody 2009, Chen and Cheng 2009).

The increasing number of Korean Internet shopping sites has created intense market competition, leading to very low profitability and survival rates for Internet shopping businesses despite increased sales (Brown and Jayakody 2009, Eastman et al. 2009, Park 2010).[6] For instance, InterPark, Korea's largest Internet shopping company in terms of sales, has achieved only marginal profitability in the 10 years since its establishment (Park 2010). This intense competition means that the survival of Internet shopping businesses depends on innovation and the provision of interactive, cost-efficient, and convenient services, as well as enticing new customers and maintaining existing customer bases (Overby and Lee 2006, Pavlou et al. 2007).

Recent extensive survey research reveals that the success of Korean Internet shopping businesses is determined primarily by consumer repurchase and loyalty (Park 2010). Unlike Internet consumers in China and other emerging economies, however, Korean consumers are well known for fickle consumption patterns and lack of e-commerce loyalty, both of which pose major challenges to Internet shopping businesses (Park 2010). Korea is currently

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[5] The size of the B2C Internet shopping market only is about USD 20 billion (STATISTICS KOREA: http://www.kostat.go.kr).

[6] In the fourth quarter of 2007, the number of B2C firms increased to 4388 (a 24.1% increase from the previous year), and their revenues increased to USD 800 million (a 31.4% increase from the previous year).

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one of the leading nations with a well-established e-commerce environment and advanced IT infrastructure (Hwang et al. 2006), but rapid e-commerce growth will soon occur in other nations with similar consumption patterns. Thus, understanding how to maximize Korean online consumers' repurchase intention is critical to the success of Korean companies and can help firms develop a general reference model for Internet shopping business success.

Numerous studies have attempted to identify factors leading to Internet shopping business success, emphasizing customer value creation (Francis and White 2004), web-based customer management (Santouridis et al. 2009), e-business service quality improvement (Boshoff 2007, Brown and Jayakody 2009), customer retention (Khalifa and Liu 2007), e-business strategy (Brunn et al. 2002, Hernandez et al. 2009), and website quality (Kim and Lee 2005; Kuan et al. 2008). However, researchers have paid little attention to the integration of these factors into a comprehensive model (Wang 2008). Such an integrated approach is also lacking in the studies of Korean Internet shoppers. Joo (2007) investigated the relationship between Korean Internet customer value and repurchase intention using personalized, emotion-, and trust-based variables. Atchariyachanvanich et al. (2008) examined why Korean Internet consumers continued Internet purchasing, focusing on consumer benefits. Hahn and Kim (2009) investigated how Korean consumer trust and confidence influence Internet shopping intention. Kim et al. (2008) identified critical determinants of Korean online customer satisfaction. Although these studies generally characterized Korean Internet shoppers, they failed to suggest a comprehensive model for Internet shopping business success by linking customer satisfaction and retention using existing information systems and marketing literature (Hellier et al. 2003).

This study attempts to address these limitations by investigating the consumption behavior of Korean Internet shoppers. Two previous research findings motivated this study: more than two-thirds of Internet shoppers who have filled an e-shopping cart ultimately exit the website with no purchase (Overby and Lee 2006), and only 10% of Internet shoppers ever purchase a product online (Francis and White 2004). To examine why most Internet shoppers browse rather than buy and how they can be motivated to purchase, we posit that Korean Internet shopping business success depends largely on the ability to obtain repeat purchases from web-browsing customers (Molla and Licker 2001). We propose and validate an Internet shopping business model explaining consumers' motivations for making a final decision to purchase, based on existing e-commerce success and marketing literature.

2. Model constructs and hypotheses

Maintaining long-term customer loyalty is a key determinant of Internet shopping business success (Chen and Cheng 2009, Chiou and Pan 2009, Kuan et al. 2008, Liu and Xiao 2008, Zeithaml et al. 2002). Previous research (Hellier et al. 2003, Tsai and Huang 2007) found that repeated customer purchasing due to long-term loyalty is positively related to a company's increased profitability and growth (Molla and Licker 2001). Thus, the present study considers "customer repurchase intention," which reflects loyalty, as a construct for estimating the success of Internet shopping businesses rather than "intention to use," a construct employed by previous studies (Kuan et al. 2008, Lu and Su 2009, Nicolaou and McKnight 2006, Wang 2008) and based on DeLone and McLean's e-commerce success model (2003, 2004). Given the increased pervasiveness and popularity of Internet shopping, the latter construct fails to capture the true nature of Internet shopping business success.

Previous studies suggest that perceived service usefulness, online shopping satisfaction, and past online shopping experience are central factors influencing Internet consumers' repurchase intention (Chen et al. 2009, Tsai and Huang 2007). Other studies have focused on the quality of specific websites (Ganguly et al. 2009) or the usability of the e-commerce system (Kim et al. 2002, Rhee et al. 2009, Schaupp et al. 2009). To propose a comprehensive model for the successful Internet shopping businesses, we took the following steps.

First, we adopted the *quality → value → satisfaction → loyalty* chain, which has been widely examined in offline marketing settings (Hellier et al. 2003, Wang 2008), as the mechanism of Internet shopping business success. By positing that business success depends on customer satisfaction and loyalty, this mechanism recognizes the interaction among product/service quality, customer-perceived value, and customer satisfaction. In this model, quality and value are antecedents, and satisfaction and loyalty are outcomes.

This model demonstrates that although product/service quality is essential to creating customer loyalty and purchase intention, it is not always sufficient to lock customers into a (re)purchase. Customers do not always buy the highest-quality product or service; other things being equal, a customer's purchasing behavior is influenced by his or her feelings about whether the cost and value of the offering are fair, appropriate, or deserved (Francis and White 2004, Gupta and Kim 2009). A customer's purchase intention depends on his or her positive evaluation of the overall net value of a product or service.

We articulate the model further by drawing partially on the e-commerce success model proposed by DeLone and McLean (2003, 2004), which suggests that e-commerce success is determined by six variables: system, information, and service quality; usage, user satisfaction, and net benefit. The model proposes that a customer's attitude (e.g., satisfaction) and subsequent behavior (e.g., actual purchase or purchase intention) depend on his or her beliefs about information, system, and service quality.

The DeLone and McLean model is closely related to the *quality → value → satisfaction → loyalty* mechanism and is useful for the specification of the quality measure. The model also suggests that customer loyalty is represented by "customer repurchase intention" and that net benefit can be measured by customer retention or repurchase intention (Ahn et al. 2004, Hellier et al. 2003). Based on these two models, we propose the research model outlined in Fig. 1.

Our model specifies the *quality → value → customer satisfaction → repurchase intention* chain as a logical basis for successful Internet shopping business, and considers the underlying motivation of Internet shoppers as a critical factor for success (Chen and Cheng 2009). Perceived value is known to be the primary motivation for Internet shopping, strongly affecting online and offline repurchase intention (Francis and White 2004, Yang and Lee 2010). Although multidimensional, value is largely defined as an assessment of utility, which is based on customers' evaluation of what they receive relative to what they give (Francis and White 2004, Zeithaml et al. 2002).

This study focuses on two pervasive and dichotomous values that strongly motivate customers' purchasing behavior: utilitarian and hedonic values (Babin et al. 1994, Hirschman and Holbrook 1982, Hoffman and Novak 1996, Mathwick et al. 2002). These values have received extensive attention in recent Internet shopping studies, but few scholars have examined their relationships with other factors for Internet shopping business success (Bridges and Florsheim 2008, Chiagouris and Ray 2010).

Thus, we examine how quality and customer-perceived value influence customer satisfaction and repurchase intention by raising the following research questions:

- Do system, information, and service qualities affect hedonic and utilitarian shopping values?

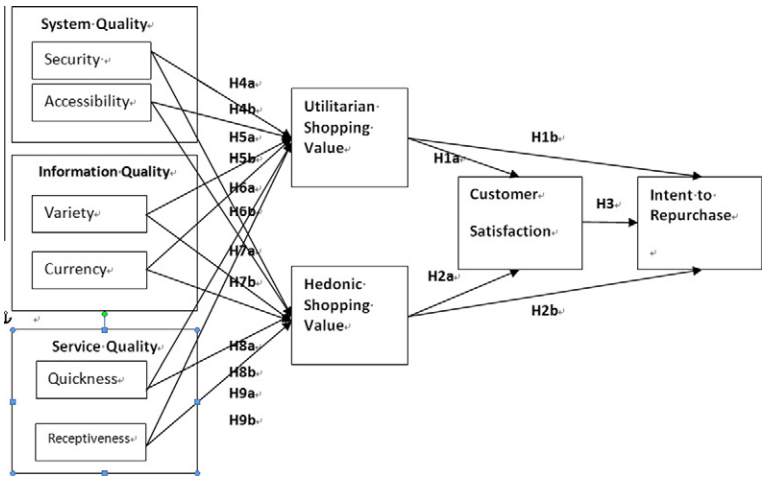

Fig. 1. Research model.

- Do hedonic and utilitarian shopping values affect customer satisfaction and repurchase intention?
- Does customer satisfaction affect repurchase intention?

2.1. Internet shopping value

Internet shopping value, a strong determinant of a consumer's motivation to shop online (Gupta and Kim 2009, To et al. 2007), can be classified into two broad psychological categories: utilitarian shopping value, the degree to which consumers feel their shopping goals have been accomplished, and hedonic shopping value, the fun and excitement of the shopping experience (Bridges and Florsheim 2008, Overby and Lee 2006, To et al. 2007). Hedonic shopping value may be the most important factor in online customer satisfaction (Gupta and Kim 2009, Kuan et al. 2008, Shang et al. 2005). Utilitarian shopping value, characterized as mission-critical, rational, decision-effective, and goal-oriented, also affects consumer satisfaction (Szymanski and Hise 2000, To et al. 2007).

Utilitarian Internet shoppers prefer to focus primarily on task-specific functions, such as product/service evaluations and price-comparison features, prior to actual purchase (Overby and Lee 2006). They are most likely to be motivated to shop and finalize online purchases when websites are informative, widely selective, convenient, and time-saving (Sorce et al. 2005, Wolfinbarger and Gilly 2001). In contrast, hedonic shoppers seek websites that provide not only transaction security, privacy, interactive control, and quick access to a large amount of information (Ramaswami et al. 2000–2001, Sorce et al. 2005), but also intrinsic experiences based on sensual stimulation, emotional value, and aesthetics, enhancing the pleasure and entertainment of online shopping (To et al. 2007). These shoppers are often motivated to purchase simply because they are involved with a certain product class or a hobby-related site (Bridges and Florsheim 2008, Gupta and Kim 2009, Overby and Lee 2006). As the number of hedonic shoppers increases, the provision of hedonic value has become an important source of revenue for online businesses (Sorce et al. 2005).

Babin et al. (1994) argued that both hedonic and utilitarian values are active determinants of consumption behavior, which results not only from a consumer's intention to purchase, but also from his or her conscious pursuit of fun and play. These values have become increasingly crucial for Internet shopping because they can motivate consumers to visit Internet shopping sites and fundamentally affect repeated purchases (Babin et al. 1994, Bridges and Florsheim 2008, Chandon et al. 2000, Chiagouris and Ray 2010, Childers et al. 2001, Hirschman and Holbrook 1982, To et al. 2007). A customer's perception of hedonic and utilitarian values is a central component of customer satisfaction and loyalty; satisfied customers are likely to repurchase. Improving customer satisfaction is essential for increasing customer revisits, repurchases, and recommendations of products to others (To et al. 2007).

Although motivations for Internet shopping vary, they can be broadly classified as goal-oriented (utilitarian) or fun-seeking (hedonic). Internet shopping business success requires the provision of both values because they are highly related to the likelihood of customer satisfaction and purchase (Kuan et al. 2008, Shang et al. 2005, Sorce et al. 2005, Wolfinbarger and Gilly 2001). Therefore, we propose that consumers' perception of utilitarian and hedonic shopping values influence their satisfaction and repurchase intention and that customer satisfaction is crucial for repurchase intention (Gupta and Kim 2009, To et al. 2007).

H1a: Utilitarian shopping value is positively (+) associated with customer satisfaction.
H1b: Utilitarian shopping value is positively (+) associated with customer repurchase intention.
H2a: Hedonic shopping value is positively (+) associated with customer satisfaction.
H2b: Hedonic shopping value is positively (+) associated with customer repurchase intention.
H3: Customer satisfaction is positively (+) associated with customer repurchase intention.

2.2. System quality

System quality refers to the level of user satisfaction with the technical and functional aspects of an Internet shopping website (Ahn et al. 2007, Schaupp et al. 2009). According to Delone and McLean (2003), system quality is dependent on various factors, including usability, availability, reliability, adaptability, and the response time of the system. In particular, a consumer's intention to use the Internet for purchase is largely dependent on the ease of use and trustworthiness of the shopping system (Brown and Jayakody 2009). In the Internet shopping environment, system quality must support the consumer's purchasing activity by providing security and accessibility, in addition to speed and a variety of other convenience features (Doll et al. 2004, Chan and Teo 2007, Schaupp et al. 2009). If these factors are not guaranteed, consumers are not likely to use the Internet shopping website. The present study focuses on two key aspects of system quality that consumers value most: security and accessibility.

Consumers must provide personal information for the processing and completion of transactions during Internet shopping. This information can be readily viewed by Internet shopping systems. With minimal effort, the data collected can be analyzed and utilized for a variety of purposes (Ranganathan and Ganapathy 2002, Shergil and Chen 2005), and this ultimately exposes consumers to increased risk (Ranganathan and Ganapathy 2002, Boshoff 2007, Chan and Teo 2007). Thus, consumers tend to regard system security as one of the most important factors relevant to Internet shopping (Hui and Wan 2007, Pavlou et al. 2007). Accessibility is another critical component of system quality. Accessibility refers to the provision of stable and precise operation with responsiveness and convenience (Doll et al. 2004, Schaupp et al. 2009). A high level of accessibility can sustain customer interest, leading to more time spent browsing a site, enhancement of the customer's experience and eventually, increased likelihood of consumer purchase (Kuan et al. 2008).

According to previous studies (Liang and Huang 1998, Palmer 2002, Zhou et al. 2009), both security and accessibility (access convenience, ease of use and reliability) strongly influence customer enthusiasm and website utilization. Both enthusiasm and utilization are dramatically decreased if customers feel that their privacy is violated (Kuan et al. 2008). Furthermore, the accessibility of Internet shopping sites affects utilitarian and hedonic shopping values. Because Internet shoppers are generally impatient about waiting for data access (Liu and Xiao 2008), hedonic and utilitarian shopping values are likely to increase when there is prompt access to Internet shopping sites and increased security of personal information (Overby and Lee 2006, Bridges and Florsheim 2008, Lu and Su 2009).

We hypothesize that security and accessibility of Internet shopping sites affect both hedonic and utilitarian shopping values. We propose the following hypotheses:

H4a: Security is positively (+) associated with utilitarian shopping value.
H4b: Security is positively (+) associated with hedonic shopping value.
H5a: Accessibility is positively (+) associated with utilitarian shopping value.
H5b: Accessibility is positively (+) associated with hedonic shopping value.

2.3. Information quality

Information quality refers to the level of user satisfaction with the information content provided by an Internet shopping website (Schaupp et al. 2009). Information quality is perceived by Internet shoppers as an indication of the value of the outputs produced by a website (Lin 2007). The greatest advantage of shopping on the Internet, as opposed to traditional shopping, is shoppers' ability to receive the most up-to-date, accurate, and useful information to compare products or services in the most convenient and efficient way (Lin 2007). DeLone and McLean (2003, 2004) suggest that various aspects of information quality, such as completeness, usefulness, adequacy, and accuracy, are the main determinants of customer satisfaction. In the Internet shopping environment, however, customers cannot achieve both utilitarian and hedonic goals unless the website provides them with resourceful and updated information. In this regard, the present study considers information variety and currency as critical factors for perceived value (Gefen et al. 2003, Chen and Cheng 2009).

Information variety indicates the abundance of information that satisfies different types of consumers, whereas information currency refers to the degree to which consumers perceive information as novel and timely (Kim and Lee 2005, Chen and Cheng 2009). Providing diverse information is important to Internet businesses. Customers do not have time to investigate products and services in detail (Ranganathan and Ganapathy 2002, Lin 2007, Kuan et al. 2008). Users frequently shop online for practical purposes, not only for purchasing what they want, but also for researching products and services (Donthu and Garcia 1999). In order to attract and retain consumer attention, Internet shopping sites must provide consumers with a variety of information throughout the purchasing process, for example, by offering them information search tools or a variety of product lines (Kim and Lee 2005, Ahn et al. 2007).

A recent study found that the most important aspect of information quality is the provision of data that are sufficiently current (Nicolaou and McKnight 2006). For example, a high degree of variety and timely information pertaining to products or services provides online customers with a sense of excitement and helps them make better purchasing decisions (Ahn et al. 2007). Other studies have revealed that Internet shoppers seek updated information about products for stimulation and excitement even when they are satisfied with products they have already purchased (Sorce et al. 2005, Nicolaou and McKnight 2006). An increasing number of people spend substantial time online just for the enjoyment in Internet shopping (Eastman et al. 2009). This type of customer is very likely to purchase online (Eastman et al. 2009).

In conclusion, both hedonic and utilitarian values may increase when users can easily search for a desired product and acquire a variety of information concerning the product being searched (Ranganathan and Ganapathy 2002, Ahn et al. 2007). Thus, providing customers with the latest news or timely information about products should enhance both the hedonic and utilitarian shopping values. Therefore, we propose that information variety and currency improve both hedonic and utilitarian shopping values for consumers:

H6a: Information variety is positively (+) associated with utilitarian shopping value.
H6b: Information variety is positively (+) associated with hedonic shopping value.
H7a: Information currency is positively (+) associated with utilitarian shopping value.
H7b: Information currency is positively (+) associated with hedonic shopping value.

2.4. Service quality

Service quality refers to a user's satisfaction with the service level provided by an Internet shopping site (Ahn et al. 2007, Santouridis et al. 2009). Service quality encompasses both online and offline support (DeLone and McLean 2003, 2004). As Internet shopping does not require face-to-face contact, service quality is particularly important in Internet shopping businesses (Zeithaml et al. 2002, Ahn et al. 2007). Service quality entails both online and off-line elements. Online factors include ease of ordering and feedback in response to customer complaints. Offline factors encompass the rapid delivery of products or services and acceptance of returns by offering refunds or exchanges when customers are dissatisfied (Khalifa and Liu 2007). Internet shopping businesses must be prepared to respond immediately to a variety of customer demands, including quick delivery, order changes, cancellations, returns, and/or refunds (Lin 2007). The shopping value perceived by customers is critically dependent on how quickly and accurately products are delivered after the order is placed (Zeithaml et al. 2002, Hui and Wan 2007, Comegys et al. 2009).

Off-line service quality is increasingly being recognized as a fundamental feature of Internet shopping service quality, affecting a customer's perception of shopping value, as well as satisfaction

and repurchase intention (Keeney 1999, Ahn et al. 2007, Hernandez et al. 2009). For example, the ease of returning purchased products is likely to affect the customer's perception of both hedonic and utilitarian values (Grewala et al. 2004, Bauer et al. 2006, Ahn et al. 2007). Previous research has shown that prompt product delivery and ease of product return significantly increase a consumer's positive experiences, including greater enjoyment and fun as well as completion of their main objective of purchasing a product online (Ha and Stoel 2009). As many previous studies note, positive experiences result in increased perceived value and customer retention (Hellier et al. 2003, Ha and Stoel 2009).

Therefore, we hypothesize that the speed and receptiveness of service improve both hedonic and utilitarian shopping values:

H8a: Service quickness is positively (+) associated with utilitarian shopping value.
H8b: Service quickness is positively (+) associated with hedonic shopping value.
H9a: Service receptiveness is positively (+) associated with utilitarian shopping value.
H9b: Service receptiveness is positively (+) associated with hedonic shopping value.

2.5. Demographic attributes of Internet shoppers

Internet shopping (or buying) behaviors tend to differ demographically among individuals. Internet shopping businesses utilize customer segmentation to improve their performance. Consumer demographic attributes are typically represented by differences in age, gender, education, income, and nationality (Sorce et al. 2005). The importance of this demographic data has led previous studies to investigate the manner in which consumer demographic traits (e.g., age and gender) influence Internet shopping (Sen et al. 2006, Hui and Wan 2007, Sebatianelli et al. 2008, Comegys et al. 2009).

The present study focuses on differences in Internet shopping behavior across two consumer income groups: student and workforce. Using these two consumer groups provides several advantages. First, the student and workforce groups represent two distinctive and mutually exclusive demographic attributes in terms of income level, age, purchasing power, and computer literacy. Second, young consumers play the largest role in Internet shopping (Alam et al. 2008). Although they tend to be low-income consumers and less experienced in product purchasing compared to older consumers, students exhibit quite different and distinctive online shopping patterns; they particularly differ in their hedonic and utilitarian values (Sorce et al. 2005). Thus, an analysis comparing student and workforce may improve our ability to understand the purchasing behavior of Internet shoppers.

Although previous research found that Internet shopping behavior differs across income level (Balabanis and Vassileiou 1999, Lightner 2003), the subject of whether consumer income level influences perception of Internet shopping quality (which is critical for Internet shopping values and purchasing behavior) has received limited attention in prior research. The present study attempts to examine whether differences in consumer income influence system, information, and service qualities for utilitarian and hedonic shopping values, as well as customer satisfaction and repurchase intention. Thus, we propose the following hypotheses:

H10a: The impact of system quality (security and accessibility) on utilitarian shopping values differs across user income levels.
H10b: The impact of system quality (security and accessibility) on hedonic shopping values differs across user income levels.
H11a: The impact of information quality (variety and currency) on utilitarian shopping values differs across user income levels.
H11b: The impact of information quality (variety and currency) on hedonic shopping values differs across user income levels.
H12a: The impact of service quality (quickness and receptiveness) on utilitarian shopping values differs across user income levels.
H12b: The impact of service quality (quickness and receptiveness) on hedonic shopping values differs across user income levels.
H13a: The impact of utilitarian shopping values on customer satisfaction and repurchase intention differs across user income levels.
H13b: The impact of hedonic shopping values on customer satisfaction and repurchase intention differs across user income levels.

A number of studies have shown that patterns of consumption differ significantly between genders (Sebatianelli et al. 2008, Yang and Lee 2010). Gender refers to psychological features related to biological nature (Yang and Lee 2010). Men tend to be independent, rational, individual goal-oriented, and linked with masculinity whereas women tend to be sensitive, intuitive, passionate, communal goal-oriented, and linked with femininity (Yang and Lee 2010). These attributes can influence behaviors and attitudes of each gender differently with regard to consumption activities.

Some studies argue that female consumers are more likely to look for hedonic value when they are shopping while male consumers are more likely to be goal-oriented (utilitarian value) (Sebatianelli et al. 2008, Yang and Lee 2010). Male and female groups are also different in terms of their interpretation of online advertisements, the level of satisfaction derived from online shopping, Internet usage, and perception of risk involved in online purchasing (Palan 2001). Evidence indicates that there are differences in the way men and women perceive the qualities of Internet shopping sites, including Internet shopping values, customer satisfaction and repurchase intention. Thus, we propose the following hypotheses:

H14a: The impact of system quality (security and accessibility) on utilitarian shopping values differs between genders.
H14b: The impact of system quality (security and accessibility) on hedonic shopping values differs between genders.
H15a: The impact of information quality (variety and currency) on utilitarian shopping values differs between genders.
H15b: The impact of information quality (variety and currency) on hedonic shopping values differs between genders.
H16a: The impact of service quality (quickness and receptiveness) on utilitarian shopping values differs between genders.
H16b: The impact of service quality (quickness and receptiveness) on hedonic shopping values differs between genders.
H17a: The impact of utilitarian shopping values on customer satisfaction and repurchase intention differs between genders.
H17b: The impact of hedonic shopping values on customer satisfaction and repurchase intention differs between genders.

2.6. Repurchase intention

Repurchase intention indicates an individual's willingness to make another purchase from the same company, based on his or her previous experiences (Hellier et al. 2003). The competitive advantage of an Internet business is obtained from customer loyalty and retention for repeat purchases (Hellier et al. 2003, Tsai and Huang 2007). Thus, the identification of determinants of repurchase intention is of critical importance to both researchers and practitioners. However, according to Hellier and his colleagues (2003), previous research on consumer repurchase intention has been largely fragmented, and few studies have tested a structural

model based on a verified framework. This research attempts to explain the relationship between Internet shopping businesses and customers by testing the model incorporating the mechanisms of quality, value, attitude, and behavior (repurchase intention).

3. Research methods

3.1. Instrument development

Based on previous research into Internet shopping quality, shopping values, customer satisfaction, and intent to repurchase, we selected survey items for the measurement of each construct and developed a questionnaire that included those items. The measurement items (with references) are shown in Table 1. Four questionnaire items were used to measure the level of security, information currency, and service quickness. For the measurement of accessibility, information variety, receptiveness, utilitarian shopping value, hedonic shopping value, customer satisfaction, and repurchase intention, five questionnaire items were used. All items were measured on a five-point Likert scale, from "strongly disagree" to "strongly agree".

The initial version of the survey instrument was pretested by six university professors, each holding significant expertise in the field of electronic commerce. After obtaining feedback from these experts, the wording and arrangement of the measurement items were modified. Then, the revised version was further pilot-tested on 17 participants who had extensive experience in Internet shopping. The pilot group represented various workforce demographics, including scholars, online buyers, professionals, public servants, and CEOs of small- and medium-sized businesses. There were multiple subsequent phases of instrument development to refine and restructure the survey instrument.

3.2. Data collection and analysis

The questionnaire, in large part, addresses the respondents' descriptive information, including the frequency and types of engagement in Internet shopping and shopping tendencies. The sample data were collected from the general public over 8 weeks in Korea. In order to maximize a response rate, both online and offline surveys using e-mail[7] and direct delivery were conducted to collect data. To maintain external validity, we tried to sample data from various group by visiting schools, companies, research institutes, and Internet cafes. E-mails and messengers were also employed to collect sample responses. A total of 1800 surveys were distributed, of which a total of 378 were returned (a response rate of 21%). After eliminating 85 responses due to incompleteness or the absence of Internet shopping experience, a sample of 293 (16.3%) was ultimately employed in our empirical analysis: the sample includes 151 women and 142 men for the analysis of the gender difference. For the analysis of the moderating effect of income level, we employ 140 student and 115 workforce respondents, which comprise 87% of the sample data. The sample is adequate to identify the differences between the two groups although they have an unequal sample size.

In the following section, we provide descriptive statistics of respondent demographics. Cronbach's alpha was used to evaluate the reliability of the variables. Factor analysis and internal consistency were also checked to assess the validity of the constructs. Amos 18 software is used to test the research hypotheses. This software is particularly appropriate for testing the model fit, in addition to identifying the underlying cause–effect relationships among variables (Byrne 2009).

[7] Email addresses were drawn up mainly from Naver.com and Nate.com users.

4. Empirical analysis

4.1. Demographic analysis

The results of the demographic analysis are shown in Table 2. Gender was relatively equally represented, with women (51.5%) slightly outnumbering men (48.5%). The largest age group was 20–25 (41%), followed by 26–30 (25.2%), 31–40 (19.8%), and over 41 (10.6%). The academic attainment of the respondents was relatively high, with 54.3% of respondents having completed at least a university education. The sample was composed mostly of students (47.8%), workforce (26.3%), professionals (7.8%), and self-employed (6.8%). Income representation was relatively equally divided between those earning $\leqslant$8700 USD (49.1%) and those earning $\geqslant$8701 USD (50.9%). Approximately three-quarters (74.4%) of the sample had at least 6 months of experience in online Internet shopping. The most common method of payment employed was credit card (55.0%), followed by online money transfers (29.7%), and cell phone (8.5%). Roughly four out of five people (79.1%) were paying a monthly Internet shopping subscription fee of at least 9 USD.

4.2. Reliability and validity

Because various items are being employed to measure abstract concepts, these items must be assessed for reliability and validity. Internal consistency of the data was evaluated with three different measures: Cronbach's alpha, composite reliability, and average extracted variance (AVE) (Fornell and Larcker 1981). All of the latent variables showed the Cronbach's reliability coefficient higher than the minimum threshold value of 0.65 suggested by Lee and Kim (1999) or 0.70 suggested by Nunnally (1978), which indicates satisfactory internal consistency for confirmation purposes. Whereas Cronbach's alpha presumes that each item carries the same weight, composite reliability relies more on the actual loading score of a construct; therefore, it is considered a better measure of internal consistency (Fornell and Larcker 1981). To provide adequate internal consistency, the value of composite reliability must be greater than 0.7 (Nunnally 1978). The AVE reports the proportion of the variance of the measurement items, which is accounted for by a construct. The AVE values of all constructs were greater than 0.50, indicating that over 50% of the variance is explained by the measurement items (see Table 3).

We examined construct validity by assessing the convergent validity and discriminant validity. We ran a principal component analysis (PCA) with varimax rotation for an exploratory purpose. This approach is appropriate because it allows us to retain the measurement items that are most relevant to the constructs by extracting the maximum variance for each construct (Tabachnick and Fidell 2006). The rotation technique provides a clear interpretation and confirms the scientific utility of the solution without compromising the mathematical fit between data and the reproduced correlation matrices. Among orthogonal rotation techniques, varimax is considered to be the default choice because of its ability to simplify factors.

We employed latent root criteria to perform item culling. Eigenvalues greater than 1 were selected (Table 4). Factor loadings greater than ±0.45 were considered to be significant for a sample size of 200 or above (Hair et al. 1998). Based on the factor analysis, Quickness item (QU) #5 and Receptiveness items (RE) #4 and #5 were eliminated.

After removing these items, all of the indicator items were loaded to their respective constructs. Cross-loadings were minimal (i.e., well below the standard maximum cutoff value of 0.4), suggesting that each factor measured its own concept. This method ensures an acceptable convergent validity. Discriminant validity was assessed by checking whether the square root of AVE for a construct had a higher value than the variance shared between

Table 1
Measurement items.

Category	Factors	Measured Items	References
System quality	Security	HV1: Internet shopping system provides good protection of personal information	Seddon (1997), Rai et al. (2002), Ranganathan and Ganapathy (2002), and Delone and McLean (2003)
		HV 2: Internet shopping system does not cause discomfort in the checkout & payment process	
		HV 3: Internet shopping system does not cause worry regarding potential leak of personal information	
		HV 4: Internet shopping system generally offers safe transactions	
	Accessibility	AC1: Internet shopping site offers relatively quick connection	Szymanski and Hise (2000), Zeithaml et al. (2002), and Ahn et al. (2004)
		AC2: Internet shopping site has a simple URL address	
		AC3: Internet shopping site has an address easy to memorize	
		AC4: Internet shopping site is easy to browse	
		AC5: Internet shopping site reacts immediately to menu clicks	
Information quality	Variety	VA1: Internet shopping site provides abundant information regarding product functions and quality	Szymanski and Hise (2000), Ranganathan and Ganapathy (2002), Delone and McLean (2003), and Khalifa and Liu (2007)
		VA 2: Internet shopping site offers many product genres	
		VA 3: Internet shopping site offers useful information related to shopping	
		VA 4: Internet shopping site offers active user reviews and evaluations of its products	
		VA 5: Internet shopping site tends to provide features that allow price comparisons with other sites	
	Currency	CU1: Internet shopping site provides the latest product information	Rai et al. (2002), Delone and McLean (2003), Ahn et al. (2004), Doll et al. (2004), and Nicolaou and McKnight (2006)
		CU 2: Information posted on Internet shopping site is relatively new and current	
		CU 3: Internet shopping site sends the latest news via e-mail to its customers	
		CU 4: Internet shopping site frequently updates site information	
Service quality	Quickness	QU1: Internet shopping site keeps its delivery schedule	Keeney (1999), Palmer (2002), Zeithaml et al. (2002), Ahn et al. (2004), and Comegys et al. (2009)
		QU 2: Internet shopping site provides quick delivery	
		QU 3: Internet shopping site offers speedy product delivery	
		QU 4: Internet shopping site provides relatively swift delivery service	
	Receptiveness	RE1: Internet shopping site provides words regarding product returns and exchanges	Ranganathan and Ganapathy (2002), Ahn et al. (2004), and Khalifa and Liu (2007)
		RE 2: Internet shopping site provides clear guidelines on the return and/or exchange of products purchased on the site	
		RE 3: Internet shopping site appears to exert significant effort in offering product guarantees, such as product returns policies	
		RE 4: I feel that products purchased on Internet shopping site are easy to return	
		RE 5: Seller's contact, i.e., telephone number and address, are clearly indicated on the website	
Utilitarian shopping value		UV1: I tend to visit Internet shopping sites only when I have something I need to buy	Overby and Lee (2006), To et al. (2007), Bridges and Florsheim (2008), and Gupta and Kim (2009)
		UV 2: When Internet shopping online, I tend to look only for products that I need/want	
		UV 3: Internet shopping enables quick shopping	
		UV 4: Internet shopping enables easy shopping	
Hedonic shopping value		HV1: To me, Internet shopping is very pleasant/fun	Overby and Lee (2006), To et al. (2007), Bridges and Florsheim (2008), and Gupta and Kim (2009)
		HV 2: Internet shopping makes me feel as though I have escaped from daily life	
		HV 3: I lose track of time when I shop online	
		HV 4: I get excited when I choose from products offered in Internet shopping sites	
Customer satisfaction		CS1: I am relatively satisfied with the Internet shopping experience I have had on Internet shopping site	Zeithaml et al. (2002), Doll et al. (2004), and Khalifa and Liu (2007)
		CS 2: I think Internet shopping is pleasant when I shop on this Internet shopping site	
		CS 3: Compared to other Internet shopping sites, I am satisfied with the shopping experience I have had on this Internet shopping site	
		CS 4: I am relatively satisfied with the product information provided on Internet shopping site	
		CS 5: I am relatively satisfied with the additional services (i.e., order/delivery/return) provided on Internet shopping site	

Table 1 (*continued*)

Category	Factors	Measured Items	References
Intent to repurchase		IR1: I intend to continue to purchase goods from the Internet shopping site that I regularly use IR 2: I intend to acquire product information from the Internet shopping site that I regularly use IR 3: I intend to recommend the Internet shopping site that I regularly use to people around me IR 4: I intend to use the Internet shopping site that I regularly use as the priority online store for future purchases IR 5: Except for any unanticipated reasons, I intend to continue to use the Internet shopping site that I regularly use	Khalifa and Liu (2007) and Zhou et al. (2009)

Table 2
Demographic analysis.

Category		Freq.	%
Gender	Male	142	48.5
	Female	151	51.5
	Total	293	100
Education	Less than high school	8	2.7
	High school diploma	10	3.4
	In university	112	38.2
	University graduate	105	35.8
	In graduate school	40	13.7
	Master's	14	4.8
	Other	4	1.4
	Total	293	100
Online shopper since/for	1 month or less	48	16.4
	6 month or less	27	9.2
	1 year or less	26	8.9
	2 years or less	41	14.0
	More than 2 years	151	51.5
	Total	293	100
Subscription fee (USD)	None	21	7.2
	Under 9	40	13.7
	9.1–26	74	25.3
	26.1–43	68	23.2
	43.1–87	60	20.5
	Over 87.1	30	10.1
	Total	293	100
Age	19 or under	10	3.4
	20–25	120	41.0
	26–30	74	25.2
	31–40	58	19.8
	Over 41	31	10.6
	Total	293	100
Occupation	Student	140	47.8
	Employee	77	26.3
	Public service	18	6.1
	Self-employee	20	6.8
	Housewife	6	2.0
	Specialist	23	7.8
	Other	9	3.1
	Total	293	100
Income (USD)	Under 8700	144	49.1
	8701–26,000	86	29.4
	26,001–43,000	36	12.3
	Over 43,001	27	9.2
	Total	293	100
Payment method	Credit card	161	55.0
	Mobile phone	25	8.5
	Online transfer	87	29.7
	Electronic currency	5	1.7
	Other	15	5.1
	Total	293	100

the construct and other constructs (Fornell and Larcker 1981). The values of all diagonal elements were greater than those of off-diagonal elements (Table 5), suggesting that all of the constructs were distinct. The reliability and validity tests on the variables confirmed that the survey items were sufficiently valid and reliable for further analyses.

Table 3
Reliability indices for constructs.

Construct	AVE	Composite reliability	Cronbach's alpha
AC	0.555	0.859	0.79
CU	0.519	0.811	0.70
HEDO	0.706	0.923	0.90
QU	0.660	0.886	0.83
RE	0.704	0.877	0.79
REPUR	0.618	0.890	0.84
SATIS	0.669	0.890	0.83
SE	0.564	0.837	0.74
UTIL	0.579	0.873	0.82
VA	0.499	0.832	0.75

4.3. Structural equation model and hypothesis testing

We model the causal relationships of Internet shopping characteristics, including system quality, information quality, and service quality mediated through hedonic and utility values, and customer satisfaction leading to repurchase intention. A covariance-based structural analysis (a.k.a. SEM) is used to test our research model. We employ a maximum-likelihood analysis using AMOS 18 with the simultaneous estimation of the measurement and structural model. A two-step approach is used in order to evaluate the model adequacy, as suggested by Anderson and Gerbin (1988).

4.3.1. Evaluation of the measurement model

Before testing the causal relationships among latent constructs, we perform a confirmatory factor analysis through AMOS on exogenous latent variables with 25 indicator items. The results of the independence model, which assumes that all of the variables are not correlated, are rejected ($\chi^2(300) = 3018.728$, $p < .0001$). The default model we hypothesize is tested and its results are also rejected ($\chi^2(256) = 504.149$, $p < .0001$, comparative fit index (CFI) = .909, goodness-of-fit index (GFI) = .880, the root mean square error of approximation (RMSEA) = .058).[8] The result of the chi-square difference test ($\Delta\chi^2(7) = 2514.579$) indicates that the hypothesized model shows a significant improvement in fit from the independence model. However, it is not sufficiently adequate for a structural model analysis. Therefore, post hoc modification is used to improve the model fit and develop a more parsimonious model.

Based on the Lagrange multiplier test, we add three paths, each of which predicts one of the following indicators: SE4, a subindicator of the security factor from the accessibility factor; AC5, a subset of the accessibility factor from the variety factor; and QU4, a quickness factor from the receptiveness factor. These paths reveal minor

[8] Recommended fit values: CFI > .90, GFI > .90, RMSEA < .05 or .08 (Hair et al. 1998)

Table 4
Results for reliability and factor analysis.

Items	Factor group										Reliability (Cronbach's alpha)
	1	2	3	4	5	6	7	8	9	10	
HV4	**.836**	.111	.167	.071	.050	.007	.101	.106	.096	.052	.895
HV5	**.826**	.063	.158	.049	.084	.073	.122	.096	.127	.042	
HV3	**.789**	.127	.088	.094	.103	.022	.108	.127	.093	.096	
HV2	**.783**	.115	.094	.072	.003	.041	−.026	.102	.024	.191	
HV1	**.724**	.121	.088	.002	.106	.232	.093	.081	−.020	.081	
RE1	.089	**.763**	.086	.101	.090	.112	.164	.051	.192	.074	.794
RE2	.174	**.725**	.087	.134	.111	.044	.112	.098	.031	.067	
RE3	.176	**.713**	.085	.093	.183	.091	.094	.148	−.001	.111	
IR4	.117	.104	**.730**	.118	.162	.161	.159	.125	.059	.057	.844
IR3	.235	.100	**.707**	.123	.114	.068	.191	.094	.118	.154	
IR5	.001	.065	**.649**	.093	.233	.313	.033	.069	.128	.053	
IR2	.245	.229	**.639**	.094	.102	.094	.069	.152	.067	.209	
IR1	.210	.202	**.601**	.113	.118	.126	.124	.081	.142	.254	
QU2	.088	.132	.064	**.827**	.134	.167	.115	.118	.086	.072	.867
QU1	.093	.129	.116	**.762**	.141	.128	.166	.092	.097	.085	
QU3	.001	.190	.077	**.757**	.058	.141	.117	.117	.143	.180	
QU4	.096	.260	.200	**.673**	.086	.130	−.018	.075	.088	.233	
AC2	.030	.061	.136	.067	**.750**	.054	.152	.018	.170	.219	.832
AC3	.072	.175	.174	.146	**.724**	.109	.081	.044	.146	.070	
AC4	.122	.259	.214	.207	**.689**	.044	.054	.172	−.009	.103	
AC1	.084	.041	−.013	−.001	**.655**	.260	.111	.031	.301	.117	
AC5	.120	.181	.197	.094	**.575**	.128	.086	.278	−.055	.112	
UV3	.098	.101	.028	.134	.135	**.756**	.023	.050	.111	.087	.816
UV4	.151	.102	.051	.175	.136	**.740**	.060	.025	−.086	−.031	
UV2	−.002	.051	.246	.145	.035	**.701**	.057	.078	.082	.132	
UV1	−.089	.059	.270	.048	.051	**.699**	.142	.008	.052	.118	
UV5	.365	.147	.049	.049	.108	**.627**	.038	.136	.153	.062	
SE3	.170	.128	.082	.057	.029	.065	**.821**	.077	.026	.019	.824
SE4	.075	.138	.120	.146	.113	.092	**.809**	.183	.060	.065	
SE1	.068	.078	.145	.065	.177	.097	**.759**	.144	−.003	.147	
SE2	.054	.145	.084	.090	.093	.041	**.608**	−.045	.215	.174	
VA4	.106	.100	.133	.051	−.030	.046	−.005	**.743**	.188	.146	.772
VA5	.178	.034	.009	.022	.004	.128	.132	**.706**	−.069	.136	
VA3	.158	.077	.130	.107	.138	.061	.029	**.692**	.233	−.055	
VA1	.027	.138	.077	.160	.238	−.014	.181	**.588**	.092	.128	
VA2	.065	−.002	.168	.111	.306	.015	.125	**.491**	.375	−.092	
CU3	.023	.131	.076	.117	.142	.019	.070	.119	**.720**	.096	.742
CU4	.121	.106	.065	.120	.284	.108	.109	.111	**.661**	.041	
CU1	.148	.199	.197	.140	−.035	.100	.111	.239	**.542**	.161	
CU2	.144	.185	.334	.137	.085	.137	−.022	.301	**.455**	.159	
CS4	.164	.219	.166	.207	.220	.068	.132	.125	.005	**.687**	.834
CS3	.159	.149	.215	.201	.171	.198	.190	.074	.093	**.631**	
CS5	.218	.195	.216	.202	.197	.067	.231	.166	.164	**.611**	
CS2	.158	.111	.210	.218	.176	.186	.090	.141	.253	**.576**	
Eigen value	13.919	2.848	2.273	2.098	1.983	1.742	1.570	1.394	1.241	1.030	
Accumulative distribution (%)	29.615	35.674	40.510	44.974	49.194	52.901	56.242	59.208	61.849	64.040	

Note: SE: security, AC: accessibility, VA: variety, CU: currency, QU: quickness, RE: receptiveness, CS: customer satisfaction, IR: intent to repurchase, UV: utilitarian shopping value, HV: hedonic shopping value.

Table 5
Correlations of latent constructs.

	AC	CU	HEDO	QU	RE	REPUR	SATIS	SE	UTIL	VA
AC	**0.745**									
CU	0.528	**0.720**								
HEDO	0.323	0.343	**0.840**							
QU	0.448	0.533	0.275	**0.813**						
RE	0.449	0.441	0.369	0.523	**0.839**					
REPUR	0.526	0.513	0.438	0.46	0.424	**0.786**				
SATIS	0.57	0.551	0.445	0.576	0.482	0.614	**0.818**			
SE	0.48	0.433	0.341	0.41	0.401	0.442	0.504	**0.751**		
UTIL	0.358	0.398	0.309	0.42	0.312	0.463	0.428	0.354	**0.761**	
VA	0.515	0.546	0.4	0.389	0.366	0.448	0.461	0.432	0.316	**0.706**

Note: Diagonal elements are the square root of AVE. The value should exceed the inter-construct correlations for adequate discriminant validity.

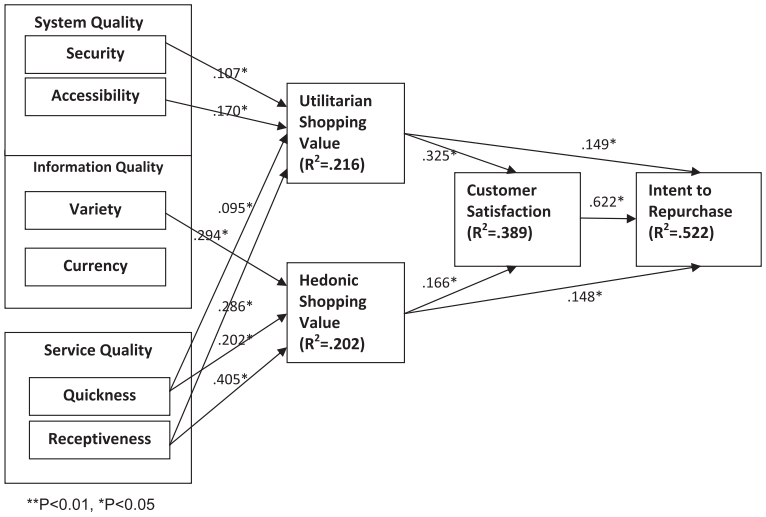

Fig. 2. Path analysis of the research model.

cross-loadings. After allowing some cross-loadings and adding the three paths, the model fits improved greatly ($\Delta\chi^2(3) = 504.149 - 359.048 = 145.101$, $p < .001$). In addition, other fit indices are satisfactory and suggest a tenable model (CFI = .961, GFI = .910, and RMSEA = .038). Given the results obtained from Section 4.2, these findings indicate that the measurement model is viable for conducting further analyses to test proposed hypotheses by using the structural equation model.

4.3.2. Structural model and hypothesis testing

The second step of SEM is to confirm the hypothesized causal relationships among the constructs under study. The results of SEM are presented in Fig. 2. Utilitarian shopping value (H1b: $\beta = 0.247$, $t = 3.212$), hedonic shopping value (H2b: $\beta = 0.168$, $t = 2.62$), and customer satisfaction (H3: $\beta = 0.54$, $t = 5.36$) display significant positive associations with repurchase intention. The findings also show that there are significant positive relationships between utilitarian (H1a: $\beta = 0.402$, $t = 5.53$) and hedonic shopping values (H2a: $\beta = 0.352$, $t = 5.708$) and customer satisfaction. For the hypotheses on the relationships among system, information, and service qualities and utilitarian and hedonic shopping values, security (H4a: $\beta = 0.205$, $t = 1.966$), accessibility (H5a: $\beta = 0.375$, $t = 2.74$), information currency (H7a: $\beta = 0.255$, $t = 2.321$), and service quickness (H8a: $\beta = 0.362$, $t = 4.361$) are strongly associated with utilitarian shopping value. Security (H4b: $\beta = 0.217$, $t = 1.977$), information variety (H6b: $\beta = 0.449$, $t = 3.81$), and service receptiveness (H9b: $\beta = 0.293$, $t = 4.029$) are strongly associated with hedonic shopping value.

The multiple R^2 values are 0.202, 0.216, 0.389, and 0.522 for each path for hedonic shopping value, utilitarian shopping value, customer satisfaction, and repurchase intention, respectively. In other words, six exogenous variables accounted for 20.2% of the variance in hedonic shopping value and 21.6% of the variance in utilitarian shopping value, which in turn explain 38.9% of the variance in customer satisfaction. Utilitarian and hedonic shopping values, along with customer satisfaction explain 52.2% of the variance in repurchase intention collectively.

The moderating effects of income (the comparison of student and workforce groups) and gender are conducted by comparing the path loadings across two groups. The multi-group analysis approach suggested by Chin (2000) is used to assess the moderating effects. For gender, the difference in the chi-square value between the unconstrained model and the equally constrained model was 26.131 with 17 degrees of freedom. Thus, we conclude that gender

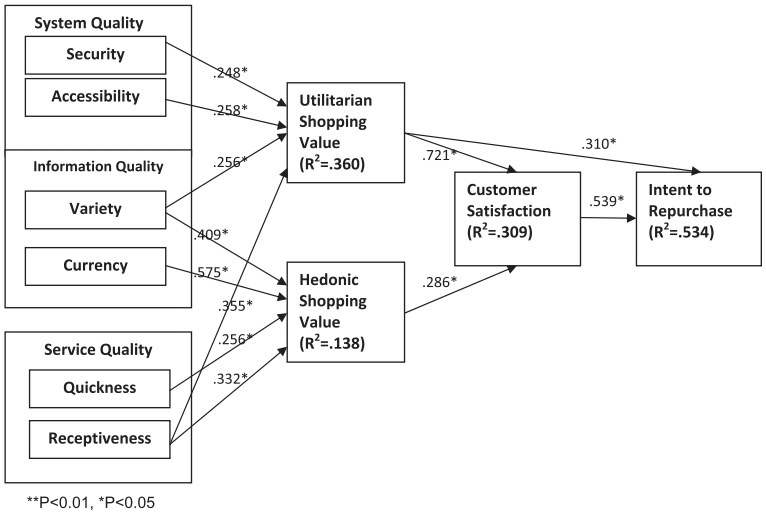

Fig. 3. Results for the workforce group.

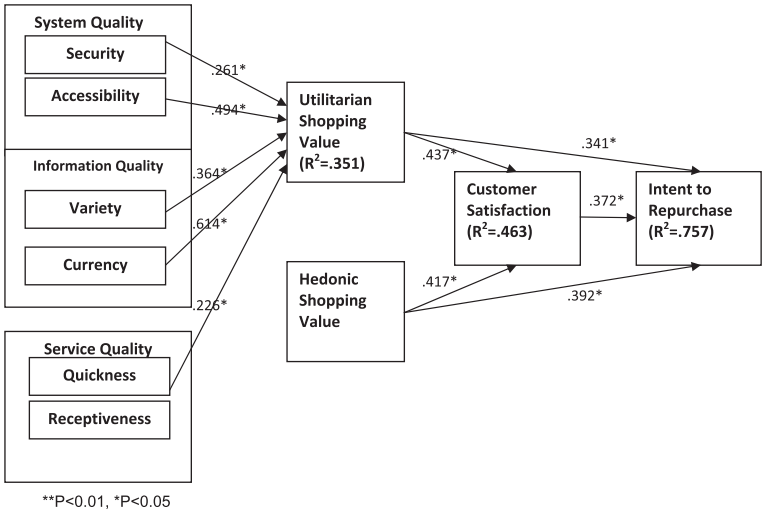

Fig. 4. Results for the student group.

Table 6
Results for internet shopper groups.

Factor			Student			Workforce			Cross validation C.R.
			Estimate	C.R.	Label	Estimate	C.R.	Label	
Utilitarian shopping value	←	Security	**0.261**	**2.175**	**par_30**	**0.248**	**2.555**	**par_100**	1.089
	←	Accessibility	**0.494**	**2.438**	**par_31**	**0.258**	**2.166**	**par_101**	0.693
	←	Variety	**0.364**	**2.034**	**par_32**	**0.256**	**2.120**	**par_102**	**2.945**
	←	Currency	**0.614**	**2.936**	**par_33**	0.082	0.537	par_103	**2.529**
	←	Quickness	**0.226**	**2.102**	**par_34**	0.016	0.189	par_104	**2.307**
	←	Receptiveness	0.235	1.590	par_35	**0.355**	**2.973**	**par_105**	**3.318**
Hedonic shopping value	←	Security	0.123	1.017	par_36	0.128	1.116	par_106	0.287
	←	Accessibility	0.067	0.359	par_37	0.020	0.143	par_107	0.407
	←	Variety	0.245	1.424	par_38	**0.409**	**2.689**	**par_108**	**2.402**
	←	Currency	0.151	0.814	par_39	**0.575**	**2.857**	**par_109**	**2.153**
	←	Quickness	0.048	0.442	par_40	**0.256**	**2.295**	**par_110**	**2.730**
	←	Receptiveness	0.215	1.431	par_41	**0.332**	**2.385**	**par_111**	**2.019**
Customer satisfaction	←	Utilitarian shopping value	**0.437**	**4.251**	**par_42**	**0.721**	**5.557**	**par_112**	0.153
	←	Hedonic shopping value	**0.417**	**4.417**	**par_43**	**0.286**	**3.558**	**par_113**	0.154
Intent to repurchase	←	Customer satisfaction	**0.372**	**2.553**	**par_48**	**0.539**	**3.882**	**par_118**	1.592
	←	Utilitarian shopping value	**0.341**	**2.800**	**par_53**	**0.310**	**2.154**	**par_123**	0.835
	←	Hedonic shopping value	**0.392**	**3.456**	**par_54**	0.040	0.488	par_124	**2.653**

Bold values indicate that the estimates are statistically significant at a .05 level.

has no significant effect on the model overall as a moderating variable. This outcome leaves out hypothesis tests regarding gender difference.

The chi-square difference for the two income groups is 28.18 with 17 degrees of freedom; this value is statistically significant at a .05 level. The results of pairwise comparisons for path coefficients indicate that only four causal relationships are significantly different across the student and workforce groups: information variety and utilitarian shopping value ($t = 2.311$), product receptiveness and utilitarian shopping value ($t = 3.261$), hedonic shopping value and customer satisfaction ($t = -2.007$), and hedonic shopping value and repurchase intention ($t = -2.543$). The differences in the two income groups are further analyzed in the next section,

4.4. Hypothesis tests for workforce and student populations

For the workforce group, system quality is associated only with utilitarian shopping value; hedonic shopping value is unaffected by system quality. With regard to information quality, both the variety and currency of information affects hedonic shopping value. Information variety also affects utilitarian shopping value. Service quality (both quickness and receptiveness) affects hedonic shopping value, while only receptiveness influences utilitarian shopping value. Both utilitarian and hedonic values affect customer satisfaction. Finally, customer satisfaction and utilitarian value (but not hedonic shopping value) influence consumers' repurchase intention (Fig. 3).

For the student group, system and information qualities are associated only with utilitarian shopping value. In terms of service quality, only delivery quickness affects utilitarian shopping value. Both utilitarian and hedonic shopping values influence customer satisfaction and consumers' repurchase intention. Customer satisfaction also affects repurchase intention (Fig. 4).

To further evaluate the differences in Internet shoppers based on earning power (i.e., workforce and student groups), we employ the par value of each group and evaluate the loose cross-validation for the two groups. As shown in Table 6, the cross-validation critical ratio (CR) shows that there are some disparities in the Internet shopping tendencies between the student and workforce groups. The role of information quality for utilitarian shopping value is more significant for the student group than for the workforce group. On the other hand, the impact of information quality on hedonic value

Table 7
Summary of hypotheses tests.

Category	Factors	Hypotheses	Results
Utilitarian shopping value		H1a: Utilitarian shopping value is positively (+) associated with customer satisfaction	Supported
		H1b: Utilitarian shopping value is positively (+) associated with consumer repurchase intention	Supported
Hedonic shopping value		H2a: Hedonic shopping value is positively (+) associated with customer satisfaction	Supported
		H2b: Hedonic shopping value is positively (+) associated with consumer repurchase	Supported
Customer satisfaction		H3: Customer satisfaction is positively (+) associated with consumer repurchase intention	Supported
System quality	Security	H4a: Security is positively (+) associated with utilitarian shopping value	Supported
		H4b: Security is positively (+) associated with hedonic shopping value	Not supported
	Accessibility	H5a: Accessibility is positively (+) associated with utilitarian shopping value	Supported
		H5b: Accessibility is positively (+) associated with hedonic shopping value	Not supported
Information quality	Variety	H6a: Information variety is positively (+) associated with utilitarian shopping value	Not supported
		H6b: Information variety is positively (+) associated with hedonic shopping value	Supported
	Currency	H7a: Information currency is positively (+) associated with utilitarian shopping value	Not supported
		H7b: Information currency is positively (+) associated with hedonic shopping value	Not supported
Service quality	Quickness	H8a: Service quickness is positively (+) associated with utilitarian shopping value	Supported
		H8b: Service quickness is positively (+) associated with hedonic shopping value	Supported
	Receptiveness	H9a: Service receptiveness is positively (+) associated with utilitarian shopping value	Supported
		H9b: Service receptiveness is positively (+) associated with hedonic shopping value	Supported
Demographic attributes		H10a: The impact of system quality (security and accessibility) on utilitarian shopping values differs across user income levels	Not supported
		H10b: The impact of system quality (security and accessibility) on hedonic shopping values differs across user income levels	Not supported
		H11a: The impact of information quality (variety and currency) on utilitarian shopping values differs across user income levels	Supported
		H11b: The impact of information quality (variety and currency) on hedonic shopping values differs across user income levels	Supported
		H12a: The impact of service quality (quickness and receptiveness) on utilitarian shopping values differs across user income levels	Supported
		H12b: The impact of service quality (quickness and receptiveness) on hedonic shopping values differs across user income levels	Supported
		H13a: The impact of utilitarian shopping values on customer satisfaction and repurchase intention differs across user income levels	Not supported
		H13b: The impact of hedonic shopping values on customer satisfaction and repurchase intention differs across user income levels	Supported only for repurchase intention

is greater for the workforce group than for the student group. These results indicate that the impact of information quality on both utilitarian and hedonic shopping values differs across user income levels. Thus, Hypotheses 11a and 11b are supported.

The impact of service quality on hedonic shopping value is greater for the workforce group than for the student group. Regarding the impact of service quality on utilitarian value, delivery quickness greatly influences utilitarian value perceived by the student group while receptiveness influences utilitarian value perceived by the workforce group. These results indicate that the impact of service quality on both utilitarian and hedonic shopping values differs across user income levels. Thus, Hypotheses 12a and 12b are supported. The impact of system quality on both utilitarian and hedonic values does not differ across user income levels. Thus, Hypotheses 10a and 10b are not supported. The impact of hedonic shopping value on repurchase intention differs across user income levels. Hypothesis 13b is supported, but only for repurchase intention. Table 7 shows the summary of the results of hypothesis tests.

5. Conclusions

As Internet shopping websites proliferate rapidly around the world, the number of Internet shoppers is increasing precipitously. However, Internet shopping businesses cannot survive without understanding the mechanism of consumers' repurchase intention. Thus, the development of an integrated model for Internet shopping business success is critical for academics and practitioners. The Korean e-commerce market, one of the largest markets of Internet shoppers with fickle consumption patterns, provides a unique research opportunity. Previous studies of Korean Internet shopping business success (Atchariyachanvanich et al. 2008, Hahn and Kim 2009, Joo 2007, Kim et al. 2008) have failed to integrate information systems and marketing perspectives, thereby lacking the explanatory power of their analyses. This study overcomes such limitations by empirically examining the effects of qualities (system, information, and service qualities) on Internet shopping values (utilitarian and hedonic values) and the effects of Internet shopping values on customer satisfaction and repurchase intention.

Our findings provide several meaningful implications for Korean Internet shopping business strategy. In line with previous studies (Hellier et al. 2003, Wang 2008), this research shows that converting Internet shoppers into repeated purchasers is essential for success. We confirm that the *quality → value → satisfaction → loyalty (repurchase intention)* chain is a mechanism that explains comprehensively how Korean Internet shopping businesses can succeed. This mechanism differs from the one used in the consumer behavior and marketing literature, which argues that consumer loyalty and repurchase intention are built on superior product/service quality (Francis and White 2004, Gupta and Kim 2009). This research suggests that such a quality is not sufficient for fostering repurchase intention in the e-commerce environment because Internet consumers evaluate a product/service, based on the fulfillment of their desires for excitement, entertainment, and

utility. This research shows that utilitarian and hedonic values lead to satisfaction of Internet consumers and significantly promote their repurchase intention. These results imply that customers' perception of utilitarian and hedonic values increases their preferences for particular Internet shopping websites.

While information, system, and service qualities are well-known factors for e-commerce business success, their impacts on utilitarian and hedonic values has not been fully examined. This research shows that system accessibility, security, service quickness, and receptiveness are essential for consumers to perceive utilitarian value, while information variety, service quickness, and receptiveness are critical for hedonic value. Thus, Internet retailers should establish a system easy to access, quickly responding to customers with current information (utilitarian value), and providing diverse product information and speedy product delivery/return (hedonic value).

This research also shows that the *quality → value → satisfaction → loyalty (repurchase intention)* mechanism works somewhat differently for consumers' income level and gender. Our results indicate that information variety and service receptiveness affect both utilitarian and hedonic values for the workforce group, while they affect only utilitarian values for the student group. Repurchase intention is affected by perceived hedonic values in the student group, but not in the workforce group. These findings have several implications: Internet retailers focusing on workforce consumers should improve system, information, and service qualities (especially information variety and service receptiveness) because those qualities directly influence utilitarian and hedonic values perceived by the consumer group. However, because hedonic value does not necessary lead directly to repurchase intention among workforce consumers, Internet retailers should recognize that these consumers are more likely to value utility for repeated consumption. Information and service qualities are important for student consumers, but those qualities affect utilitarian value only. Compared to workforce consumers, student consumers are more likely to repeat purchases, based on their experience of excitement and entertainment. Our results suggest that Internet shopping businesses should exert every effort to enhance system, information and service qualities in order to satisfy customers' utilitarian and hedonic values, which can eventually lead to business success. However, they need to take different strategies for different consumer groups. For instance, for student consumers who lack earning power in general, hedonic value is critical for their repeated purchase, compared to workforce consumers.

Previous research has paid limited attention to quality dimensions other than service quality. Taking a comprehensive approach to Internet shopping behavior, the present research integrates three quality dimensions (system, information, and service qualities) associated with Internet shopping values, customer satisfaction, and repurchase intention. This research sheds light on the literature on Internet business success, and our model can serve as a theoretical basis for future research investigating Internet shopping behavior from the perspective of consumers. This research is not free from limitations since it considers only two factors for each quality dimension. Future research should examine other factors that influence Internet shopping qualities. There might be other quality dimensions affecting student consumers' perception of hedonic value, which we fail to show in this research. Future research is called for identifying qualities other than system, information, and service qualities.

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