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Understanding customers' repeat purchase intentions in B2C e-commerce: the roles of utilitarian value, hedonic value and perceived risk

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Abstract. *Customer loyalty or repeat purchasing is critical for the survival and success of any store. By focusing on online stores, this study investigates the repeat purchase intention of experienced online buyers based on means-end chain theory and prospect theory. In the research model, both utilitarian value and hedonic value are hypothesised to affect repeat purchase intention positively. Perceived risk is hypothesised to affect repeat purchase intention negatively and moderate the effects of utilitarian and hedonic values on repeat purchase intention. Utilitarian value is proposed as a formative second-order construct formed by product offerings, product information, monetary savings and convenience. Hedonic value is also proposed as a formative second-order construct formed by the six hedonic benefits that have been identified in prior research. Data collected from 782 Yahoo!Kimo customers provide strong support for the research model. The results indicate that both the utilitarian value and hedonic value are positively associated with buyers' repeat purchase intention. A higher level of perceived risk reduces the effect of utilitarian value and increases the effect of hedonic value on repeat purchase intention. Implications for theory and practice and suggestions for future research are provided.*

Keywords: hedonic value, utilitarian value, perceived risk, repeat purchase intention, means-end chain theory, prospect theory

INTRODUCTION

Online retailing has been an important channel or business model for many firms. As the online retailing market becomes increasingly competitive, online sellers have shifted their attention

from inducing consumers to adopt their online channels to motivating consumers to purchase repeatedly through these channels. A study by Mainspring and Bain & Company (2000) shows that an average customer must shop four times at an online store before the store can profit from that customer. It is thus important for online sellers to understand why buyers are willing to make repeat purchases through their stores.

Parasuraman & Grewal (2000) argue that perceived value is the most important predictor of repeat purchase intention. Yaz Iida, co-president of LinkShare, points out that 'more than ever before, consumers are searching online for products, services and websites that provide value' (GSI Commerce, 2009). Marketing scholars have suggested that the values motivating consumers to engage in retail shopping include both utilitarian and hedonic dimensions (Babin *et al*., 1994). Business studies and surveys have also indicated that online consumers are now looking for functional value (GSI Commerce, 2009) and that 93% of online consumers demand freshness, innovation and discovery to satisfy their intrinsic needs (Endeca, 2009). Recent studies have begun to focus on the role of perceived value in explaining repeat purchase behaviour in the online shopping context (Wang, 2008; Kim & Gupta, 2009).

Consumer behaviour is often depicted as goal directed (Pieters *et al*., 1995). There are two major streams of study on online shopping goals. Some studies consider obtaining values (e.g. utilitarian and hedonic values) as the shopping goals and examine their effects on repeat purchase intention, i.e. the value-intention linkage (e.g. Jones *et al*., 2006; Wang, 2008). Others investigate the effects of online shopping benefits on repeat purchase intention, i.e. the benefits-intention linkage (e.g. Forsythe *et al*., 2006; Atchariyachanvanich *et al*., 2008). According to means-end chain (MEC) theory (Gutman, 1997), shopping motives have a hierarchical structure, with benefits as the subgoals of the values. Thus, the value-intention linkage follows MEC's notion that values are the final goals that trigger behaviour. Although the benefits-intention linkage explicates the importance of more concrete goals (benefits) in determining behavioural intention, it is against MEC's goal hierarchy that benefits serve as a means to achieve values. Drawing direct conclusions from preferred benefits on repeat purchase intentions without clearly distinguishing them from the underlying value is problematic (Botschen *et al*., 1999). While research in the marketing field (Gutman, 1982) has long recognised the need to investigate the hierarchical nature of consumer goals, this issue has been largely ignored by the studies of online repeat purchase behaviour. Clarifying the links among the benefits, values and intentions holds a strong potential to provide deeper insights into consumer behaviour (Zanoli & Naspetti, 2002; Wagner, 2007). MEC theory is therefore useful in justifying the notion of the benefit-value-intention linkage theoretically when investigating online purchase and repurchase intentions.

According to the 2008 Internet Crime Report,[1] the majority of reported internet crimes were fraudulent in nature and the total dollar loss from all referred cases of fraud was $264.6 million. Non-delivered merchandise and non-payment were the most frequently reported offences (32.9%). The report implied that uncertainty exists throughout the purchasing process and

[1]2008 Internet Crime Report – http://www.ic3.gov/media/annualreport/2008_IC3Report.pdf (last accessed 14 February 2010).

online transactions still involve a certain degree of risk. It is therefore crucial to understand how risk may influence the repeat purchase intention of consumers in the online context. Prior research on risk has focused primarily on its direct effect on repeat purchase intention. Featherman & Fuller (2003), however, indicate that risk is an important moderating variable that turns simple causal relationships between consumer perceptions, evaluations and behavioural intention into more insightful conditional relationships. While examining the moderating role of risk between TAM's Technology Acceptance Model's (TAM) variables and intention to adopt e-service, they however focus on the initial intention and do not provide a theoretical justification for the role of risk. This study utilises prospect theory (Kahneman & Tversky, 1979) to illuminate how people make decisions under risk. The main tenet of prospect theory is that risk interacts with the value of the potential gains in predicting behaviour. Therefore, prospect theory can be used as the theoretical foundation for our research model, in which the relationship between value and repeat purchase intention is contingent on the risk arising in the online shopping context.

Overall, this paper explores why individuals continue to buy from an online retailer. More specifically, we examine the multidimensional nature of utilitarian and hedonic values by proposing convenience, variety of merchandise, rich product information and monetary savings as the utilitarian benefits that constitute the sub-dimensions of utilitarian value. We also adopt Arnold & Reynolds's (2003) dimensions of hedonic motivations, i.e. adventure, social, gratification, idea, role and value, as the hedonic benefits that constitute the sub-dimensions of hedonic value. Both utilitarian and hedonic values are operationalised as a formative second-order construct to examine their relative importance in determining repeat purchase intention. Based on prospect theory, this study also examines whether perceived risk would moderate the relationships between hedonic and utilitarian values and repeat purchase intention. The study helps us to gain a better understanding of how utilitarian value, hedonic value and perceived risk differ with regard to affecting the repeat purchase intentions of online buyers.

THEORETICAL BACKGROUND

Prospect theory

Given that online shopping is characterised by risk and uncertainty, online buyers are usually not very rational (Gefen *et al*., 2003). One area of study that provides a rationale for such seemingly non-rational behaviours is prospect theory. This theory has been widely applied to explain customer decision-making under risk from a value maximising perspective (Kahneman & Tversky, 1979).

Prospect theory (Kahneman & Tversky, 1979) suggests that people behave according to their evaluations of the alternatives, and their evaluations depend on the outcomes as well as their risk attitudes. Outcomes are coded as gains or losses compared with a reference point. People behave as if they would compute a value (utility) on the basis of the possible outcomes and their respective probabilities, and then choose the alternative with the highest utility.

People also tend to overvalue outcomes that are considered certain in comparison with outcomes that are merely probable. This leads to risk aversion when people evaluate possible gains. For example, people tend to prefer an option with a certain but lower benefit (e.g. getting $1000 with certainty) to an option with an uncertain but higher benefit (e.g. a 50% chance of getting $2000). Risk aversion has been regarded as one of the best-known generalisations about risky choices (Kahneman & Tversky, 1979). Prospect theory posits that people will make different choices depending on how a problem is framed (Kahneman & Tversky, 1979). Although people to some extents have different attitudes toward risk, they tend to be risk averse when the problem is framed as gains, and risk seeking when the problem is instead framed as losses (Kahneman & Tversky, 1979). That is, people tend to be loss averse: they strongly prefer avoiding losses to obtaining gains. In other words, losing hurts more than the pleasure offered by a comparable gain. For example, losing $100 hurts more than the pleasure of finding $100. In fact, Abdellaoui *et al*. (2007) suggest that losses are twice as powerful, psychologically, as gains.

Prospect theory has been applied to modelling and predicting consumer behaviour (Camerer, 2005) and examining how the evaluation of losses and gains affects online shopping (Chen & Liang, 2006). The theory helps to clarify the asymmetries in consumers' evaluations between the perceived losses and gains under risk. In the presence of both benefits and risk, prospect theory is an appropriate theoretical lens through which one may better understand the role of risk in moderating the relationship between values and repeat purchase intention in the online shopping context.

MEC theory

Attempts to connect consumer value to behaviour can be subsumed under the rubric of an MEC (Gutman, 1997). An MEC model consists of elements that represent the major consumer processes that link value to behaviour. Three hierarchical levels of cognitive abstraction are represented in MEC: attributes, consequences and values. The MEC theory holds that consumer behaviour is value driven, so perceived values ultimately influence consumers' choice patterns (Gutman, 1997).

According to Gutman (1982; 1997), consumers learn to think about products or services in terms of attributes – physical or concrete. Attributes (means) are instrumental to achieving the desired consequences and values (ends). Consequences can be positive or negative. Positive feelings result from the benefits from consuming the product; therefore, benefits can be considered substitutes for desired consequences (Woodside, 2004). The central aspect of the MEC model is that consumers choose actions that produce desired outcomes and minimise undesired outcomes (Gutman, 1982; 1997). Consumers learn which outcomes they desire and which to avoid. Once they learn which acts produce the desired consequences (benefits) and values, their choice behaviour is guided accordingly (Gutman, 1982).

Consumer behaviour is generally goal oriented and can be regarded as a consumer's movement through a goal hierarchy (Gutman, 1997). An MEC is a hierarchy of goals in which higher-level goals represent a deeper layer of consumer motivation. In such a hierarchy,

values can be considered as the final goals that motivate consumers to engage in shopping behaviour, and benefits are the subgoals that are subordinate to values. MEC theory, indeed, has been suggested as a suitable theoretical lens for differentiating lower-level (benefits) and higher-level (values) goals (Botschen *et al*., 1999).

A basic assumption of the MEC theory is that attributes are but means through which consumers obtain their values (ends), via the positive consequences or benefits accruing from the attributes (Gutman, 1997). In other words, customers use or consume products or services because of their benefits and value, not because of their attributes per se. Further, benefits and values are higher-level goals that motivate choice behaviour; therefore, it is reasonable to ignore attributes and only adopt the benefit-value-behaviour linkage to develop a research model for studying online shopping behaviour. However, the MEC theory does not explicitly link the relationship between value and behavioural intention. Sirdeshmukh *et al*. (2002) posit that value, a superordinate goal, regulates consumer actions, including behavioural intentions of loyalty in relational exchanges (Carver & Scheier, 1990). A number of empirical studies have confirmed the relationship between value and repeat purchase intention (e.g. Parasuraman & Grewal, 2000; Jones *et al*., 2006; Ryu *et al*., 2010). Theory of reasoned action (Fishbein & Ajzen, 1975) also postulates that human behaviour is driven primarily by behavioural intention, which is a person's readiness or desire to perform a given behaviour. Accordingly, the benefit-value-intention linkage was used as the theoretical framework for the development of our research model.

Determinants of repeat purchase intentions

Repeat purchase intention refers to the subjective probability that a customer will continue to purchase a product from the same online seller. By contrast, initial purchase intention reflects the likelihood that a potential customer will purchase from an online seller for the first time at a given point in time (Davis, 1989). Compared with potential customers, repeat (i.e. experienced) customers are better at comprehending and evaluating the information and attributes of an online store due to their experience with the seller (Kim & Gupta, 2009). Consumers update the appraisals and the importance of the criteria through sequential purchases (Parasuraman, 1997; Bolton, 1998). Thus, the motivation behind a consumer's initial purchase from an online store should be different from those that motivate repeat purchase.

Based on Cheung *et al*.'s (2003) framework, Table 1 maps the determinants of both initial and repeat purchase intentions in prior studies into five categories, showing that the factors that motivate initial or repeat online purchases are quite different. For example, the effects of website attributes and seller attributes, such as ease of use, layout, system quality, size and reputation, are significant for initial purchase intention but insignificant for repeat purchase intention. The influences of trust and customer service differ in a similar manner. Despite the importance of trust in the decision to make the initial online purchase, trust tends to be reduced to merely a basic threshold or hygiene factor after the initial purchase (van der Heijden *et al*., 2003). On the other hand, according to Table 1, factors such as shopping

Table 1. Determinants of behavioural intention

Constructs	The effect on initial purchase intention (reference)	The effect on repeat purchase intention (reference)
Website attributes		
Ease of use	* (Wang *et al*., 2006)	x (van der Heijden *et al*., 2001)
Layout/design	* (Baker *et al*., 2002)	x (Otim & Grover, 2006)
System quality	* (Kuan *et al*., 2008)	x (Yang, 2007)
Seller attributes		
Reputation	* (Jarvenpaa *et al*., 2000)	x (van der Heijden *et al*., 2001)
Size	* (Jarvenpaa *et al*., 2000)	x (van der Heijden *et al*., 2001)
Consumer beliefs/perceptions		
Perceived risk	* (Pavlou, 2003)	* (Pavlou, 2003)
Trust	* (Gefen *et al*., 2003)	x (Brown & Jayakody, 2008)
Customer service	* (Baker *et al*., 2002)	x (Brown & Jayakody, 2008)
Shopping benefits		
Product offering	* (Liao & Cheung, 2001)	* (Sirohi *et al*., 1998)
Product information	* (Chen *et al*., 2006)	* (Yang, 2007)
Convenience	* (Baker *et al*., 2002)	* (Prasad & Aryasri, 2009)
Price	* (Liao & Cheung, 2001)	* (Kim & Gupta, 2009)
Perceived usefulness	* (Pavlou, 2003)	* (Pavlou, 2003)
Enjoyment/playfulness	* (Teo, 2001)	* (Cyr *et al*., 2007)

x, not significant; *, significant.

benefits and perceived risk remain significant for both cases and thus are the main focuses of this study.

According to McGuire (1974), human motives, whether cognitive or affective, are geared primarily towards individual gratification and satisfaction, providing the theoretical basis for explaining why people engage in repeat purchasing. Hirschman (1984) asserts that all shopping experiences involve the stimulation of people's thoughts and/or senses and that they accordingly may be viewed as processes that provide individuals with cognitive (utilitarian) and affective (hedonic) benefits. Clearly, the shopping benefits listed in Table 1 are important shopping motives and can be classified as either utilitarian or hedonic. As argued earlier, based on MEC theory (Gutman, 1997), utilitarian and hedonic benefits can be viewed as the subgoals that lead to the higher goals (i.e. utilitarian and hedonic values), and these higher goals motivate consumers to engage in repeat purchasing. For consumers, obtaining value is a fundamental goal and pivotal to all successful transactions (Holbrook, 1994); thus it is the main driver of repeat purchase intention (Lin *et al*., 2005; Kim & Gupta, 2009). This study focuses on utilitarian and hedonic values because they are always present in all types of consumption (Hirschman & Holbrook, 1982; Babin *et al*., 1994; Childers *et al*., 2001; Jones *et al*., 2006; Bridges & Florsheim, 2008). Prior studies on offline and online shopping confirm the importance of these values in driving loyalty and repeat purchase intention (Jones *et al*., 2006; Overby & Lee, 2006). Accordingly, this study adopts a two-dimensional conceptualisation of consumer value derived from online repeat purchase intentions.

Dimensions of perceived value

Most prior studies utilise a unidimensional approach to conceptualise the value construct (e.g. Wang, 2008; Kim & Gupta, 2009). This approach treats all items of a multidimensional scale as indicators of a general value construct, ignoring the complex nature of perceived value (Lin *et al*., 2005). Some scholars, therefore, adopt the multidimensional approach to gain a better understanding of perceived value (Sweeney & Soutar, 2001).

Previous research examining shopping value has long focused on the utilitarian aspects of shopping experience, described as functional and task-related values. However, the traditional, utilitarian explanations, by ignoring the hedonic value, fail fully to reflect the shopping experience (Babin *et al*., 1994). Most human behaviours are intrinsically pleasure-seeking in nature (Holbrook & Hirschman, 1982), and buyers typically desire to obtain a feeling of pleasure from a service experience (Carbone & Haeckel, 1994). These values have been considered as the key factors in understanding consumer shopping behaviour (Babin *et al*., 1994). Further, given that perceived values should be better conceptualised at a more abstract level to suit their conceptual definitions (Zeithaml, 1988), Lin *et al*. (2005) suggest modelling perceived values as a formative second-order construct formed by the underlying benefits that drive the values.

Dimensions of utilitarian value

Deci & Ryan (1985) differentiate the human motivations that drive an action into two general categories: extrinsic motivation and intrinsic motivation. Extrinsic motivation refers to the performance of an activity in order to attain some separable outcome, and according to MEC theory, it is analogous to the utilitarian benefit that leads to utilitarian value. As shown in Table 1, buyers shop online because they seek the benefits of convenience, broad product offerings, rich product information and monetary savings. Besides, according to a survey conducted by the Market Intelligence Center of the Information Industry Institute in Taiwan,[2] convenience, a broad product variety, rich product information, cheap prices and sales promotions are among the top five incentives for consumers to shop online. Cheap prices and sales promotions can be considered together as monetary savings. Repetition, however, does not embed a response unless there is reinforcement (McGuire, 1974). The abovementioned benefits are the most common reinforcers of online shopping with utilitarian value (e.g. Szymanski & Hise, 2000; Childers *et al*., 2001; Ballantine, 2005; Rintamaki *et al*., 2006). Accordingly, we propose four major utilitarian benefits of online shopping as the dimensions of utilitarian value: convenience, product offerings, product information and monetary savings. Table 2 lists the definitions and examples of these four utilitarian benefits.

The need for an efficient acquisition of merchandise is a significant characteristic of task-oriented shopping activities (Tauber, 1972). Shopping efficiency is manifested by convenience, product offerings, product information and monetary savings. *Convenience* is the most

[2]http://mic.iii.org.tw/intelligence/reports/pop_Doc_review.asp?docid=CDOC20090924001&cate=ECDC (last accessed 14 February 2011).

Table 2. Definitions and examples of utilitarian benefits

Construct	Definition and examples
Product offerings	The total set of items offered by a retailer, reflecting both the breadth and depth of the offered products (Simonson, 1999). For example, for a customer, a wide variety of offered products (e.g. millions of book titles provided by Amazon.com) is helpful for the purpose of making comparisons and finding the 'right' product (book).
Product information	The quality of information about a product carried by a retailer (Yang *et al*., 2005). For example, by browsing through the detailed information offered by Amazon.com, a consumer can learn more about the size, technical specifications and attributes of each of the products featured.
Monetary savings	Spending less and saving money (Mimouni-Chaabane & Volle, 2010). For example, a student can buy his/her textbooks from Amazon.com and save up to 30% of the price of new textbooks and up to 90% of the original price of millions of used listings.
Convenience	The time and effort saved by shopping online and the less restricted store hours or locations (Childers *et al*., 2001). For example, through shopping at Amazon.com, a customer can take advantage of the flexibility of placing orders online at home at any time of the day and engage in 'one-stop' shopping that eliminates travel to and from a variety of stores.

compelling benefit for online shopping, in terms of being able to shop anywhere at any time (Rohm & Swaminathan, 2004). Online shopping involves utilities such as location (place utility), expanded store hours and quick, efficient checkouts (time utility) (Rohm & Swaminathan, 2004).

Online buyers are variety-seeking oriented (Donthu & Garcia, 1999). Fulfilling their need for broad *product offerings* is critical in driving them to shop online again. Online stores generally offer a broader array of product alternatives. Therefore, the probability of finding the needed or wanted product will be higher online than offline, providing a more efficient shopping experience (Kim & Larose, 2003).

Online buyers are only a few clicks away from receiving more extensive and higher quality information about products online (To *et al*., 2007). *Rich product information* is also a key benefit of online shopping due to being able to help buyers to make decisions (To *et al*., 2007). This benefit accrues particularly when a consumer is under time pressure, making online shopping especially advantageous (Childers *et al*., 2001).

Consumers are generally concerned about the cost of purchasing a product or service (Atchariyachanvanich *et al*., 2008). *Monetary savings* have been a key draw for online buyers, as the internet makes it easier to compare prices and therefore useful for buyers to get a product with a lower cost (Soscia *et al*., 2010). As an economic incentive to attract online buyers to return, monetary savings should thus be a component of utilitarian value (Atchariyachanvanich *et al*., 2008).

Dimensions of hedonic value

Hedonic value reflects the value received from the multisensory, fantastic and emotive aspects of the shopping experience (Hirschman & Holbrook, 1982). This study adopts Arnold &

Table 3. Definitions of Arnold and Reynolds' hedonic shopping motivations

Components	Definitions
Adventure	Shopping for stimulation, adventure, and the feeling of being in another world. For example, the aural and visual (e.g. image and video) stimuli of Yahoo!Kimo may make a buyer feel like he/she is in a virtual shopping mall and he/she may enjoy shopping in such a store atmosphere.
Social	The enjoyment of shopping with friends and family, socialising while shopping and bonding with others while shopping. For example, a buyer may obtain enjoyment by sharing his/her good Amazon shopping experience with others via a social networking website (e.g. Facebook).
Gratification	Shopping for stress relief, shopping to alleviate a negative mood and shopping as a special treat for oneself. For example, a female buyer may browse Yahoo!Kimo to buy a designer handbag in order to relieve her stress at work.
Idea	Shopping to keep up with the trends and new fashions and to see new products and innovations. For example, a buyer can browse Yahoo!Kimo to see new cell phones. After ordering an iPhone, he/she may feel that he/she is keeping up with the trends due to both the shopping channel used (online shopping) and the popularity of the product.
Role	The enjoyment that shoppers derive from shopping for others, the influence that this activity has on the shoppers' feelings and moods and the excitement and intrinsic joy felt by shoppers when finding the perfect gift for others. For example, a young buyer wants to buy a digital camera for his/her parents. The buyer can easily find the right one because Yahoo!Kimo offers a variety of digital cameras. The buyer feels joyful due to his/her success in finding the perfect gift for his/her parents.
Value	Shopping for sale items, looking for discounts and hunting for bargains. For example, Yahoo!Kimo always offers sales and discounts. A buyer may feel joyful due to his/her success in purchasing items at a low price.

Reynolds's (2003) six dimensions of hedonic shopping motivation: adventure, social, gratification, idea, role and value. For measurement, Arnold & Reynolds's (2003) scale for measuring hedonic shopping motivations has been empirically confirmed by recent studies on online shopping (e.g. To *et al*., 2007; O'Brien, 2010) and thus is considered appropriate for the current study. Table 3 lists Arnold and Reynolds's definitions of the six hedonic shopping benefits together with examples of them. All six hedonic benefits are grounded on McGuire's (1974) psychological motivations.

Note that enjoyment is included in Table 1 as one of the antecedents of repeat purchase intention. Enjoyment is a form of intrinsic motivation that captures the pleasure and satisfaction derived from performing the behaviour (e.g. the shopping process) (Davis *et al*., 1992). Perceived enjoyment thus is a form of intrinsic experiential value (Mathwick *et al*., 2001) that can be generated by the six hedonic benefits, which will be discussed below, and thus is considered synonymous with hedonic value in this study.

Adventure shopping describes how an individual seeks novelty and needs stimulation in order to escape from the aversive state of boredom (McGuire, 1974). According to Parsons's (2002) survey, 95% of the respondents indicate that online shopping offers an opportunity for diversion from the routine of daily life. Hirschman (1984) asserts that all shopping experiences

involve the stimulation of the senses so accordingly may be viewed as a process providing the individual with hedonic benefits.

Social shopping reflects individuals' tendency to seek acceptance and affection in interpersonal relationships. The social benefits of online shopping, such as communicating with like-minded people, can have important influences on shopping intention (Dennis *et al*., 2009). Social interaction plays a more important role in repeat purchase behaviours than ever before due to the increasing social interaction capability provided by online stores. *Gratification* shopping suggests that humans are motivated to behave in ways that will reduce tension or stress, leading to greater pleasure. Parsons (2002) indicates that gratification is a strong shopping motive that increases the likelihood that a buyer will shop at a particular online store and also return subsequently.

Idea shopping explains the human needs for structure, order and knowledge, and views the human as needing external guidelines and information in an attempt to make sense of themselves. According to Parsons (2002), 93% of the respondents expected to be able to find, assess and appreciate new trends, brands, product launches and pre-launch information through online stores.

Role shopping suggests that people gain self-acceptance and pleasure through playing a specific role and identity at a given time. The greatest benefit of the internet is that it gives people the ability to play a role that was previously difficult to fulfil (Parsons, 2002).

Value shopping views humans as competitive achievers, seeking success and dominance, and striving to gain self-esteem and admiration from others. Arnold & Reynolds (2003) indicate that getting a bargain makes consumers feel like they have overcome a challenge. For consumers, a significant advantage of online shopping is comparison shopping. Wolfinbarger & Gilly (2001) indicate that the pleasure derived from the process of hunting for bargains is one of the reasons why individuals shop online.

Perceived risk

Shopping involves risk because a buyer's decision has consequences that can not be perfectly predicted, and some of which could be unpleasant (Bauer, 1960). Risk is more pronounced in online shopping than in traditional brick-and-mortar shopping due to the spatial and temporal separation between the buyers and sellers (Tan, 1999). Prior research indicates that perceived risk is an important determinant of both initial purchase intention and repeat purchase intention (see Table 1).

Perceived risk is a multidimensional construct. This study focuses on four dimensions of perceived risk, including financial loss, product performance, privacy and product delivery. Financial risk refers to the likelihood of suffering a financial loss due to hidden costs, maintenance costs or a lack of warranty in case of faults (Cunningham, 1967). Performance risk refers to the probability that a product purchased may result in a failure to function as expected. Privacy risk is the potential loss of control over one's personal information. Product delivery risk refers to the possibility of suffering a loss due to the online seller's failure to deliver the product or late delivery.

RESEARCH MODEL

Perceived value is defined as a trade-off between benefits and sacrifices (costs), i.e. the consumer's overall assessment of the utility of a product or service based on what is received and what is given (Zeithaml, 1988). Accordingly, perceived value is a function of benefits and costs. Time, effort and price can be viewed as the costs of online shopping. This study formulated time, effort and price in a positive way as convenience and monetary savings–benefits. Actually, perceived risk can be viewed as a major cost of online shopping. In this study, perceived risk is modelled as a moderator, implying that consumers would consider both benefit and risk when assessing product or service value and forming intention. Prospect theory (Kahneman & Tversky, 1979) suggests that people behave as if they would compute a value function on the basis of the possible outcomes and their respective probabilities. In other words, the overall value of a choice is the weighted sum of the possible outcomes from the choice, both positive and negative. Accordingly, this study holds that consumers implicitly evaluate the relative worth or importance of benefits against the cost (perceived risk) of online shopping to form a value assessment. This study therefore theorises that repeat purchase intention is determined by utilitarian and hedonic values, which are designated as second-order composite latent variables with benefits as their sources of value.

The research model is based on MEC theory and prospect theory. MEC theory was adopted: (1) to explain why benefits are considered as the components of values; and (2) to build the connection between values and goals. Based on the theory, utilitarian and hedonic benefits are the consequences of online shopping that create utilitarian value and hedonic value, respectively. Because MEC theory focuses on consumers' cognitive structure after product or service consumption, it does not involve the risk concept. Prospect theory, therefore, is invoked to explore the role of risk in moderating the relationships between values and repeat purchase intention. The proposed relationships are depicted in Figure 1 and explained below.

Utilitarian and hedonic value

Schwartz (1994) defines values as 'desirable trans-situational goals, varying in importance, that serve as guiding principles in the life of a person or other social entity' (p. 21). That is, values are motivational constructs that serve as a standard or criterion for guiding the selection or evaluation of actions or things. Values are higher-level goals in the MEC hierarchy that motivate and direct consumers' behaviour and decision-making (Gutman, 1997). Carver & Scheier (1990) also posit that value regulates consumer actions, including behavioural intentions of loyalty towards a service provider. Similarly, Bridges & Florsheim (2008) identify utilitarian and hedonic values as the online shopping goals that guide consumer behaviour. For repeat/experienced customers, value judgments are derived from the past consumption experiences that facilitate (or block) the achievement of their shopping goals (Woodruff, 1997). Then, an online repeat purchase decision is formed according to how these value judgments help consumers to achieve their final goals. Babin *et al*. (1994) further suggest that hedonic and utilitarian values are important outcomes influencing future consumer decisions through

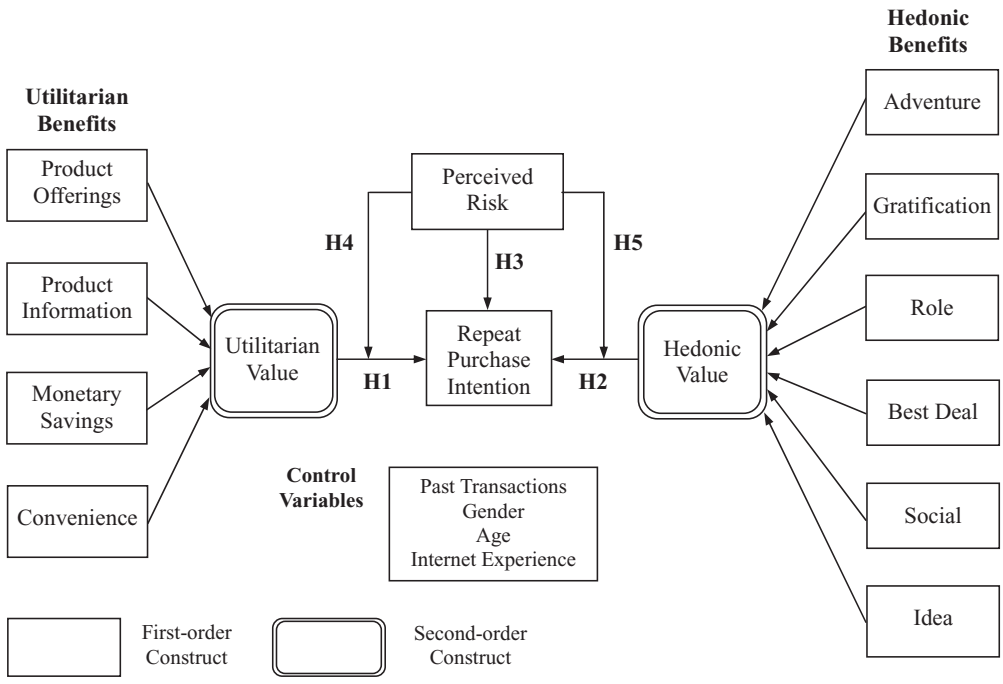

Figure 1. Research model.

feedback loops into the consumer decision processes. Accordingly, consumers should have a greater repeat purchase intention towards an online store when the store can provide higher utilitarian and hedonic values. Prior research has also shown the importance of utilitarian and hedonic values in driving repeat purchase intention (Jones *et al*., 2006; Ryu *et al*., 2010). Consequently, we propose the following hypotheses:

H1: Utilitarian value is positively related to buyers' repeat purchase intention.

H2: Hedonic value is positively related to buyers' repeat purchase intention.

Perceived risk

Buyers perceive risk when they face uncertainty and potentially undesirable consequences as a result of a purchase made (Taylor, 1974). As individuals feel threatened by uncertain, ambiguous situations, they attempt to avoid such situations (Hofstede, 1980). Higher perceived online risk is often caused by being unable fully to monitor the seller's behaviour and/or concerns regarding the security of online shopping. Once consumers have learned that online shopping could produce negative consequences, they will avoid those negative consequences by ceasing to shop online. Therefore, we propose the following relationship:

H3: Perceived risk is negatively related to buyers' repeat purchase intention.

Prospect theory assumes that people make decisions based on calculated utility, i.e. utilitarian value. However, it generally fails to account for the role of hedonic value in decision-making under risk. The relative salience of utilitarian and hedonic value may change under different levels of risk. According to prospect theory, people tend to be risk averse when the problem is framed as gains (Kahneman & Tversky, 1979). Consumers who perceive online shopping to be low risk and are willing to shop online tend to focus on the task of obtaining the 'right' item. Given the high certainty of achieving the task, consumers will pay more attention to the underlying components of utilitarian value (e.g. product information, convenience, monetary savings) that are helpful in completing the task more efficiently and at lower cost. Accordingly, individuals tend to focus more on utilitarian value than on hedonic value under low risk (O'Curry & Strahilevitz, 2001).

However, higher risk may shift the shoppers' focus from obtaining the item to the shopping experience. Take gambling or purchasing a lottery ticket for example; 'individuals entertain the risk of monetary loss for the positive reinforcement produced by states of high arousal during the periods of uncertainty, as well as the positive arousal produced by winning' (Zuckerman, 1979, p. 211). Likewise, consumers who perceive online shopping to be highly risky but are still willing to shop online should be motivated by the need to experience varied, novel and complex sensations (Zuckerman, 1979). Under such circumstances, the consumers' attention and sensitivity to utilitarian loss or reward will be attenuated (Bornovalova *et al*., 2009). Consequently, the consumers tend to shift their focus from obtaining the item to the hedonic value (e.g. adventure and gratification) derived from the shopping process, heightening the effect of hedonic value on repeat purchase intention and reducing the effect of utilitarian value on repeat purchase intention. Accordingly, this study holds that the influence of utilitarian value on repeat purchase intention will decrease as a function of perceived risk, while the influence of hedonic value on repeat purchase intention will increase as a function of perceived risk.

H4: Perceived risk negatively moderates the relationship between utilitarian value and repeat purchase intention.

H5: Perceived risk positively moderates the relationship between hedonic value and repeat purchase intention.

Control variables

We specified four control variables for controlling possible spurious effects in the research model. The first is the number of past transactions that a buyer has made at the online store as past transactions have an impact on transaction intentions (Pavlou *et al*., 2007). The other three are demographic variables, including gender, age and internet experience.

RESEARCH METHODOLOGY

Measurement development

The measures of the study were all adapted from existing measures. A small-scale pretest of the questionnaire was conducted using 20 graduate students with online shopping experience

to assess its logical consistency, ease of understanding, sequence of items and contextual relevance. Then, a large-scale pretest with 168 customers of the target online shopping store was conducted to assess the measurement properties of the final items. The items and their sources are listed in Appendix A.

The items for measuring the six components of hedonic value were adapted from Arnold & Reynolds (2003) to fit the context of online shopping. Note that we modified the term 'value' to 'best deal' in order to distinguish this from hedonic value.

Prior research has examined the multidimensional nature of perceived risk, e.g. Featherman & Pavlou (2003). This study, however, used an overall, multiple-item measure for the perceived risk construct. The items for measuring perceived risk focus on the likelihood of negative outcomes or loss in four aspects: financial loss, product performance, privacy and product delivery. As each sub-dimension of perceived risk is a concrete concept and perceived risk represents an aggregated impact of its sub-dimensions (Chen & He, 2003), presenting each sub-dimension with one item would be more easily and uniformly imaginable by the respondents (Rossiter, 2002), as in Chang & Chen (2008). All of the measurement items use a 7-point Likert scale, anchored from strongly disagree (1) to strongly agree (7).

Survey administration

The research model was tested with data from 782 Yahoo!Kimo online shopping customers. Yahoo!Kimo was chosen because it is a widely used online shopping store in Taiwan. Yahoo!Kimo is both a portal and the largest online auction site in Taiwan. A banner with a hyperlink to our Web survey was published on a number of bulletin board systems, chat rooms and virtual communities. Individuals with online shopping experience at Yahoo!Kimo were invited to participate in this survey. Forty randomly selected respondents were offered an incentive of US$10 in cash. The first page of the questionnaire explains the purpose of this study and ensures confidentiality. The Web survey yielded a total of 782 complete and valid responses for data analysis. Table 4 lists the demographic information of the respondents. We conducted *z*-tests to compare the basic demographics of our survey with those of Yen & Lu's

Table 4. Demographic information of respondents ($n = 782$)

Measure	Items	Freq.	Percent	Measure	Items	Freq.	Percent
Gender	Male	315	40.3	Gender	Female	467	59.7
Age	<20	50	6.4	Education	High school or less	64	8.2
	20–24	369	47.2		Undergraduate	591	75.6
	25–29	232	29.7		Graduate/post-graduate	127	16.2
	~30	131	16.7				
Shopping frequency	1	216	27.6	Internet experience	<5	53	6.8
(times in half year)	2–3	328	41.9	(in years)	5–6	148	18.9
	4–5	110	14.1		7–8	243	31.1
	~6	128	16.4		~9	338	43.2

(2008) survey, which also used Yahoo!Kimo as the target website. The results revealed that there were no significant differences in terms of gender ($z = 0.87$), age ($z = 1.40$) or education ($z = 0.129$) ratios.

Data analysis

The data analysis utilised a two-step approach, as recommended by Anderson & Gerbing (1988). The first step analyses the measurement model, while the second tests the structural relationships among the latent constructs. The aim of the two-step approach is to establish the reliability and validity of the measures before assessing the structural relationships of the model.

SmartPLS 2.0.M3 (Ringle *et al*, 2005) was used because it allows latent constructs to be modelled as formative or reflective indicators. Partial least squares (PLS) places minimal restrictions on the measurement scales, sample size and residual distribution (Chin & Newsted, 1999). For utilitarian and hedonic values, the rationale for operationalising them as formative second-order constructs is twofold: (1) their underlying dimensions are indicator variables that form or cause the creation or change in them (latent variables); and (2) their underlying dimensions are not necessarily highly correlated.

Measurement model

Second-order constructs (i.e. utilitarian and hedonic value) were approximated using the approach of repeated indicators (or repeated manifest variables) because the approach is easiest to implement (Chin *et al*., 2003). With this approach, a second-order construct is directly measured by observed variables for all of the first-order constructs. While this approach repeats the number of manifest variables used, the model can be estimated by the standard PLS algorithm (Chin *et al*., 2003). For example, the second-order utilitarian value construct was directly measured by the observed variables for product offerings, product information, monetary saving and convenience (see Appendix A). Some studies have also implemented the repeated indicators approach (e.g. Turel *et al*., 2007; Tan *et al*., 2008; Wetzels *et al*., 2009).

The adequacy of the measurement model was evaluated with reliability, convergent validity and discriminant validity. Reliability was examined using the composite reliability values. Table 5 shows that all of the values were above the commonly acceptable threshold, 0.7. Convergent validity was assessed by two criteria (Fornell & Larcker, 1981): (1) all indicator loadings should be significant and exceed 0.7; and (2) the average variance extracted (AVE) by each construct should exceed the variance due to the measurement error for that construct (i.e. AVE should exceed 0.50). As shown in Table 6, all of the items exhibit a loading higher than 0.7 on their respective construct, and as shown in Table 5, all of the AVEs ranged from 0.70 to 0.84, thus satisfying both conditions for convergent validity. The four indicators of perceived risk were operationalised as reflective variables for three reasons: (1) the four indicator variables of perceived risk are highly correlated, with paths ranging from 0.71 to 0.80;

Table 5. Descriptive statistics of constructs

Constructs	Items	Composite reliability	Mean (SD)	AVE
Product offerings	4	0.92	5.32 (1.23)	0.74
Product information	4	0.91	4.89 (1.32)	0.72
Monetary saving	3	0.91	4.80 (1.41)	0.76
Convenience	4	0.90	5.78 (1.07)	0.70
Adventure	4	0.91	4.68 (1.41)	0.73
Gratification	3	0.93	4.51 (1.45)	0.81
Role	4	0.93	4.67 (1.38)	0.76
Best deal	3	0.92	5.46 (1.24)	0.79
Social	3	0.94	4.24 (1.44)	0.84
Idea	3	0.91	5.07 (1.31)	0.78
Perceived risk	4	0.95	4.94 (1.44)	0.82
Repeat purchase intention	4	0.94	5.32 (1.06)	0.81

(2) the significance test of the formative indicators' weights of perceived risk indicated that the weights were not significant, with *t*-statistics ranging from 0.87 to 1.0; and (3) recent studies that used a single-item for each dimension also operationalised perceived risk as a reflective construct (e.g. Chen & He, 2003; Chang & Chen, 2008).

Discriminant validity was tested using the following three tests. First, an examination of cross-factor loadings (Table 6) indicates good discriminant validity, because the loading of each item on its assigned construct is larger than its loadings on all other constructs (Chin, 1998). Second, the correlations among the constructs are all well below the 0.85 threshold (Kline, 1998), suggesting discriminant validity. Third, the square root of the AVE from a construct is much larger than the correlations shared between the construct and other constructs in the model (Table 7) (Fornell & Larcker, 1981). The correlation between the two components of hedonic value (i.e. adventure and gratification) is relatively high ($r = 0.70$), a phenomenon also observed in Arnold & Reynolds (2003) ($r = 0.71$). In addition, by operationalising the six components of hedonic value as first-order indicators, we can overcome the problem that the hedonic variables are highly correlated and potentially non-discriminant, because formative constructs help to determine whether any of the first-order constructs needs to be omitted due to the high correlations. Therefore, we conclude that the scales should have sufficient construct validity.

Structural model

In PLS analysis, examining the structural paths and the R-square scores of the endogenous variables assesses the explanatory power of a structural model. Figure 2 shows the results of the structural path analysis. All of the paths were significant, with a *p*-value of less than 0.05. The significance of all of the paths was assessed by 500 bootstrap runs. Overall, the base model accounted for 48% of the variance of repeat purchase intention (Figure 2). Thus, the fit of the overall model is fairly good.

Table 6. PLS confirmatory factor analysis and cross-loadings

	PO	PI	MS	CO	AD	GR	RO	BD	SO	ID	PR	RI
PO1*	**0.84**	0.47	0.32	0.35	0.25	0.20	0.22	0.15	0.15	0.25	–0.03	0.39
PO2	**0.86**	0.48	0.32	0.36	0.26	0.19	0.22	0.20	0.13	0.24	–0.06	0.37
PO3	**0.88**	0.53	0.38	0.33	0.32	0.27	0.29	0.24	0.23	0.29	–0.14	0.46
PO4	**0.87**	0.54	0.39	0.36	0.36	0.34	0.34	0.28	0.26	0.34	–0.13	0.47
PI1	0.55	**0.88**	0.42	0.36	0.38	0.35	0.32	0.25	0.27	0.40	–0.17	0.42
PI2	0.48	**0.87**	0.36	0.34	0.34	0.33	0.30	0.27	0.28	0.38	–0.19	0.38
PI3	0.49	**0.88**	0.43	0.32	0.41	0.37	0.35	0.27	0.37	0.40	–0.17	0.42
PI4	0.47	**0.75**	0.43	0.31	0.43	0.36	0.38	0.26	0.38	0.41	–0.20	0.43
MS1	0.39	0.45	**0.85**	0.42	0.34	0.28	0.30	0.31	0.28	0.32	–0.15	0.46
MS2	0.38	0.43	**0.91**	0.30	0.37	0.26	0.26	0.25	0.30	0.29	–0.11	0.42
MS3	0.30	0.39	**0.86**	0.26	0.34	0.28	0.26	0.22	0.28	0.27	–0.11	0.38
CO1	0.29	0.37	0.36	**0.78**	0.29	0.26	0.26	0.34	0.20	0.35	–0.11	0.35
CO2	0.35	0.33	0.32	**0.85**	0.32	0.30	0.30	0.39	0.19	0.34	–0.08	0.44
CO3	0.37	0.31	0.29	**0.87**	0.31	0.26	0.27	0.31	0.19	0.34	–0.02	0.41
CO4	0.35	0.30	0.29	**0.83**	0.28	0.24	0.25	0.35	0.17	0.32	–0.02	0.44
AD1	0.34	0.40	0.38	0.39	**0.79**	0.50	0.42	0.31	0.39	0.47	–0.06	0.40
AD2	0.28	0.39	0.33	0.26	**0.92**	0.62	0.51	0.28	0.49	0.44	–0.13	0.37
AD3	0.28	0.41	0.35	0.24	**0.90**	0.68	0.51	0.29	0.53	0.45	–0.13	0.38
AD4	0.28	0.36	0.31	0.35	**0.80**	0.59	0.44	0.31	0.42	0.40	–0.07	0.38
GR1	0.28	0.41	0.31	0.31	0.67	**0.91**	0.57	0.37	0.54	0.46	–0.16	0.44
GR2	0.26	0.35	0.28	0.28	0.67	**0.93**	0.55	0.33	0.53	0.46	–0.15	0.38
GR3	0.25	0.37	0.26	0.26	0.56	**0.86**	0.58	0.40	0.51	0.50	–0.17	0.41
RO1	0.23	0.33	0.22	0.23	0.44	0.52	**0.83**	0.30	0.55	0.39	–0.18	0.32
RO2	0.26	0.33	0.27	0.28	0.47	0.53	**0.88**	0.35	0.53	0.41	–0.14	0.41
RO3	0.30	0.36	0.31	0.27	0.52	0.58	**0.92**	0.40	0.57	0.47	–0.11	0.44
RO4	0.29	0.36	0.28	0.33	0.50	0.55	**0.86**	0.42	0.54	0.52	–0.10	0.44
BD1	0.23	0.31	0.25	0.33	0.32	0.41	0.38	**0.86**	0.35	0.43	–0.13	0.38
BD2	0.23	0.26	0.26	0.39	0.28	0.34	0.38	**0.93**	0.30	0.38	–0.03	0.42
BD3	0.23	0.25	0.28	0.39	0.31	0.34	0.38	**0.89**	0.27	0.37	–0.01	0.42
SO1	0.19	0.36	0.29	0.18	0.46	0.49	0.56	0.31	**0.90**	0.44	–0.15	0.34
SO2	0.21	0.33	0.31	0.27	0.49	0.55	0.57	0.36	**0.92**	0.45	–0.09	0.37
SO3	0.21	0.35	0.29	0.17	0.53	0.56	0.58	0.28	**0.93**	0.47	–0.12	0.35
ID1	0.29	0.42	0.31	0.39	0.42	0.42	0.42	0.41	0.37	**0.88**	–0.05	0.43
ID2	0.30	0.42	0.31	0.36	0.48	0.49	0.45	0.38	0.45	**0.91**	–0.09	0.41
ID3	0.28	0.39	0.27	0.31	0.46	0.47	0.49	0.37	0.48	**0.86**	–0.09	0.41
PR1	–0.11	–0.22	–0.10	–0.05	–0.10	–0.18	–0.14	–0.07	–0.13	–0.09	**0.89**	–0.17
PR2	–0.10	–0.20	–0.16	–0.06	–0.10	–0.16	–0.13	–0.06	–0.12	–0.07	**0.90**	–0.17
PR3	–0.09	–0.18	–0.12	–0.06	–0.12	–0.18	–0.16	–0.05	–0.12	–0.09	**0.93**	–0.18
PR4	–0.09	–0.19	–0.14	–0.03	–0.10	–0.14	–0.11	–0.04	–0.10	–0.07	**0.91**	–0.17
RI1	0.46	0.44	0.43	0.47	0.39	0.42	0.41	0.44	0.32	0.44	–0.15	**0.90**
RI2	0.43	0.45	0.45	0.36	0.44	0.46	0.46	0.35	0.41	0.43	–0.22	**0.85**
RI3	0.45	0.42	0.42	0.45	0.39	0.37	0.39	0.40	0.32	0.39	–0.14	**0.92**
RI4	0.44	0.42	0.43	0.49	0.39	0.39	0.42	0.45	0.33	0.43	–0.18	**0.93**

*Please refer to Appendix A for item numbers (e.g. PO1).

PO, product offerings; PI, product information; MS, monetary saving; CO, convenience; AD, adventure; GR, gratification; RO, role; BD, best deal; SO, social; ID, idea; PR, perceived risk; RI, repurchase intention.

Bold numbers indicate item loadings on the assigned constructs.

Table 7. Correlation among constructs and the square root of the AVE

	PO	PI	MS	CO	AD	GR	RO	BD	SO	ID	PR	RI
PO	**0.86**											
PI	0.59**	**0.85**										
MS	0.41**	0.49**	**0.87**									
CO	0.41**	0.39**	0.38**	**0.84**								
AD	0.35**	0.46**	0.40**	0.36**	**0.85**							
GR	0.30**	0.42**	0.31**	0.32**	0.70**	**0.90**						
RO	0.31**	0.40**	0.31**	0.32**	0.55**	0.63**	**0.87**					
BD	0.26**	0.31**	0.30**	0.42**	0.35**	0.41**	0.43**	**0.89**				
SO	0.23**	0.38**	0.33**	0.23**	0.54**	0.58**	0.63**	0.35**	**0.92**			
ID	0.33**	0.47**	0.34**	0.40**	0.52**	0.52**	0.52**	0.44**	0.50**	**0.88**		
PR	−0.11**	−0.22**	−0.14**	−0.06	−0.12**	−0.18**	−0.15**	−0.06	−0.13**	−0.09*	**0.91**	
RI	0.50**	0.49**	0.48**	0.49**	0.45**	0.46**	0.47**	0.46**	0.38**	0.47**	−0.19**	**0.90**

*Significant at 0.05 level.

**Significant at 0.01 level.

PO, product offerings; PI, product information; MS, monetary saving; CO, convenience; AD, adventure; GR, gratification; RO, role; BD, best deal; SO, social; ID, idea; PR, perceived risk; RI, repurchase intention.

The diagonal elements (in bold) represent the square root of the AVE.

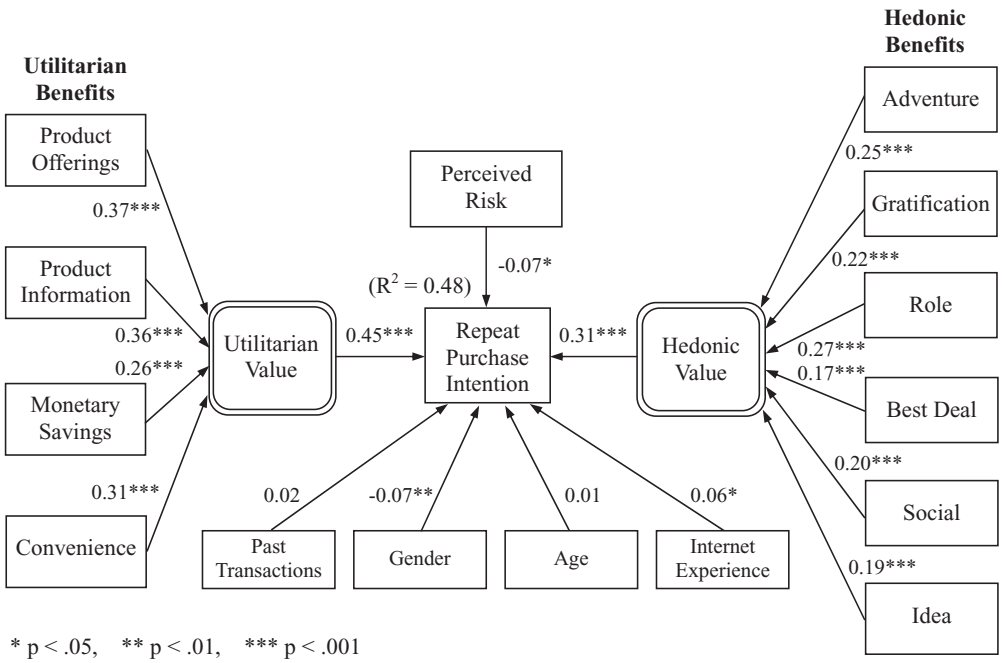

Figure 2. SEM analysis of the research model.

In addition, H4 and H5 were tested by statistically comparing the path coefficients from utilitarian value and hedonic value to repeat purchase intention in the structural model for low risk with the corresponding path coefficients in the structural model for high risk. According to Chin *et al*. (2003), the product indicator approach (e.g. measures of risk and utilitarian value are cross-multiplied) should only be applied in the case of reflective constructs. As utilitarian and hedonic values are formative second-order constructs, we adopted a multiple-group approach, in which the groups were divided into high perceived risk ($N_1 = 466$) and low perceived risk ($N_2 = 316$) groups using the median (Baron & Kenny, 1986). Perceived risk was divided by the median of the sum of its four measurement items. The statistics were computed using the following procedure (Keil *et al*., 2000):

$$S_{pooled} = \sqrt{\{[(N_1 - 1)/(N_1 + N_2 - 2)] \times SE_1^2 + [(N_2 - 2)/(N_1 + N_2 - 2)] \times SE_2^2\}}$$

$$t = (PC_1 - PC_2) \Big/ \left[S_{pooled} \times \sqrt{(1/N_1 + 1/N_2)} \right]$$

where S_{pooled} is the pooled estimator for the variance, t is the t-statistic with $N_1 + N_2 - 2$ degrees of freedom, N_i is the sample size of data set for group i, SE_i is the standard error of path in structural model for group i and PC_i is the path coefficient in structural model of group i.

Table 8. Path coefficients and the results of moderating effect testing

Path	Low risk-β (SE)	High risk-β (SE)	Difference	*t*
Utilitarian value → repeat purchase intention	0.54 (0.057)	0.38 (0.043)	–0.16	46.0***
Hedonic value → repeat purchase intention	0.28 (0.056)	0.33 (0.041)	0.05	14.8***

***Significant at 0.001 level.

Table 8 shows that, for buyers perceiving a higher risk in online shopping, utilitarian value has a smaller effect on repeat purchase intention ($\beta = 0.38$) than those perceiving a lower risk ($\beta = 0.54$), which supports Hypothesis 4 ($t = 46.0$, $p < 0.001$). However, hedonic value has a bigger effect on repeat purchase intention for the high perceived risk group ($\beta = 0.33$) than the low perceived risk group ($\beta = 0.28$); this supports Hypothesis 5 ($t = 14.8$, $p < 0.001$).

DISCUSSION AND IMPLICATIONS

The results of this study indicate that utilitarian and hedonic value have direct effects on repeat purchase intention. The comparison of the path coefficients, based on Johnson *et al*. (1987, p. 126), shows that utilitarian value is a stronger predictor of repeat purchase intention than hedonic value ($t = 2.33$; $p < 0.05$).[3] Utilitarian value and hedonic value are stronger predictors of repeat purchase intention than perceived risk, with *t*-values of 17.19 ($p < 0.001$) and 10.01 ($p < 0.001$), respectively. Risk has been recognised as the primary barrier to online transactions, but the respondents in this study – experienced buyers – seem relatively more concerned with the values of online shopping.

Our findings indicate that perceived risk has a weak but still significant negative effect on repeat purchase intention for experienced buyers. We further divided our respondents into two groups based on their number of purchases over the past 6 months: heavy (six or more purchases) and light (fewer than six purchases). The heavy buyers group contains 128 buyers (16.4%), while the light buyers group contains 654 buyers (83.6%). Further data analysis indicates that perceived risk has a smaller effect on repeat purchase intentions for the heavy buyers group ($\beta = -0.01$) than the light buyers group ($\beta = -0.08$). The path coefficient difference is significant ($t = 18.51$). Accordingly, a possible explanation of this difference is that only a small portion of experienced buyers are heavy buyers, and thus perceived risk remains a negative determinant of repeat purchase intention.

Perceived risk negatively moderates the influence of utilitarian value on repeat purchase intention. The importance of utilitarian value as a predictor of repeat purchase intention reduces when risk perception increases. Utilitarian value however remains as the main determinant of repeat purchase intention, irrespective of the level of risk perceived by the buyers. It appears that most experienced buyers are functional and task oriented. Consistent with our expectation, perceived risk positively moderates the influence of hedonic value on

[3] $t = (\beta_i - \beta_j) / \sqrt{[\mathrm{var}(\beta_i) + \mathrm{var}(\beta_j) - 2\,\mathrm{cov}(\beta_i \beta_j)]}$ where β_I is the path coefficient associated with path *i*, var(β_i) is the variance of β_I and cov(β_i, β_j) is the covariance between β_i and β_j.

repeat purchase intention. When the level of perceived risk increases, the importance of hedonic value as a predictor of repeat purchase intention also increases. The results confirm our expectation that many online buyers have a sensation-seeking trait and so need to reach and maintain a certain level of arousal.

Our results illustrate that product offerings, product information, convenience and monetary savings are significant components of utilitarian value. Based on Johnson *et al*. (1987, p. 126), weight comparisons were conducted. The results show that the weights of product offerings and product information are not significantly different ($t = 0.77$).[3] However, their weights are significantly greater than those of convenience and monetary savings, making them the more important benefits that generate utilitarian value. However, Szymanski & Hise (2000) indicate that, on average, the perceptions of superior merchandising – wider assortments and richer product information – were less significant in influencing online buyers' satisfaction. A possible explanation of this is that Szymanski and Hise's measures of product offerings and product information are intended to evaluate internet storefronts relative to traditional retail stores, which are different from our measures that focus on online stores.

Our results also illustrate that the six hedonic motivations identified by Arnold & Reynolds (2003) are significant components of hedonic value. This suggests that online shopping can provide diverse sensational simulations. Again, the weight comparison (Johnson *et al*., 1987, p. 126) shows that the weights of role and adventure are significantly greater than that of gratification, which is the third highest, with *t*-values of 4.8 and 3.49, respectively ($p < 0.01$). Our results indicate that role and adventure are the dominant hedonic benefits. Thus, a sense of stimulation and escapism, the enjoyment felt when shopping for others, and finding the perfect gift play more influential roles in shaping online repeat purchase intentions.

Finally, the two control variables, gender and internet experience, significantly affected repeat purchase intention. Consistent with Forsythe & Shi (2003), our findings indicate that female buyers have higher repeat purchase intentions than male buyers and that buyers with more internet experience are more likely to engage in repeat purchasing than those who are relatively inexperienced.

Implications for theory

A major finding of the study is the moderating role of perceived risk. It is important to search for moderating variables that turn simple, main effects into more insightful conditional relationships (Featherman & Fuller, 2003). Our evidence suggests that a deeper understanding of the relationship between shopping values and repeat purchase intentions is possible when interactions are taken into consideration. The results demonstrate the opposite impact of risk on the effect of utilitarian values and hedonic values on repeat purchase intention. This suggests that consumer risk perceptions need to be reduced to an acceptable level for a desirable, combined effect of utilitarian and hedonic benefits to be realised. Prospect theory identified the possibility of risk seeking. As the explanation of prospect theory emphasises the cognitive aspects, it ignores the possibility of explaining risk-seeking behaviour from the emotional or affective aspects (e.g. hedonic value). This study extends the prospect theory and provides additional

theoretical reasons for under what circumstances consumers become more risk seeking or less risk averse. This study suggests that individuals' choices either to avoid or seek risk (seek sensation) vary across the types of value under evaluation. Theoretical frameworks that aim to predict risk-taking behaviour should consider the differential influence of the nature of the shopping goals.

Although online shopping has been considered risky, its benefits and values still drive people to shop online. While prior research has examined the influence of utilitarian and hedonic values on behavioural intention, this study applies new perspectives to reformulate such issues and shed new light on online consumer behaviours. Three contributions of this study to the e-commerce literature are: (1) the benefits-values-intention linkage; (2) a parsimonious model; and (3) clarifying the individual effects of values and their combined effects with risk on repeat purchase intention.

First, instead of being theory driven, research on repeat purchase intention in e-commerce has been largely descriptive, such as considering value-intention or the benefits-intention linkage. This study, however, brings the MEC theory to the forefront of e-commerce research by proposing the salient links between benefits, values and intentions. We contribute a hierarchical model of consumer goals, in which lower-level goals (utilitarian and hedonic benefits) serve as the means of attaining higher-level ones (utilitarian and hedonic values) that provide the ultimate motives for driving repeat purchase intention. More specifically, according to McGuire's (1974) psychological motivations and prior empirical research (see Table 1), this study provides justifications for the dimensions (i.e. benefits) underlying utilitarian and hedonic values. In essence, this study establishes the benefits-values linkage both theoretically and empirically.

Second, previous research has discussed the various underlying components of the hedonic and utilitarian values of online shopping, but examined their individual effects on online shopping behaviour instead of their integrative effects. For example, the abstractions of overall utilitarian and hedonic value are not specified in Forsythe *et al*. (2006), which is inconsistent with Zeithaml's (1988) suggestion that higher-level abstractions contribute to the perceptions of value. This, however, leads to the confounding result with regard to the effects of utilitarian and hedonic value on constructs such as behavioural intention, unless empirical analyses are conducted at the value level rather than the component (benefit) level (Lin *et al*., 2005). Forsythe *et al*. (2006) adopt the multidimensional approach to investigate the relationship between the components of utilitarian and hedonic values (e.g. convenience, enjoyment, etc.) and consequence constructs (e.g. intention to purchase). This approach generates too many hypotheses and thus lacks model parsimony, especially when there is a moderator in the model. By modelling utilitarian value and hedonic value as formative second-order constructs, this study achieves a higher level of abstraction and builds a parsimonious model for examining the over-arching effects of those first-order variables (i.e. benefits) on repeat purchase intention. Overall, our model confirms to the theoretical definitions of the hedonic and utilitarian values and conceptually outperforms the existing models.

Third, our findings suggest that experienced buyers assess the integrative influence of the value and risk associated with online shopping in forming their intentions to engage in repeat

purchasing. While some earlier research concluded that online buyers were more concerned about perceived risks than values (Bhatnagar & Ghose, 2004), the current findings suggest that the impact of utilitarian and hedonic values outweighs the perceived risks, at least for experienced online buyers, thus motivating them to continue to purchase online. Our findings further suggest a dominant role of utilitarian value in driving buyers to purchase online repeatedly. Jones *et al*. (2006) showed that the intention to repatronage a traditional retailer store was influenced more by utilitarian value than by hedonic value. Stoel *et al*. (2004) found that hedonic value had a significant effect on the intention to repatronage a mall but the effect of utilitarian value was not significant. Our findings imply that the relative importance of utilitarian and hedonic values in determining repeat purchase intention is context specific. Our findings suggest that most experienced buyers may be more functional or task oriented. It, however, would be inappropriate to interpret our results as implying that hedonic value could be paid less attention by online sellers. The appropriate interpretation is that, given the situational context of our sample, further increases in hedonic value may be less potent than similar increases in utilitarian value.

Implications for practice

This study has several implications for online sellers. First, it shows that online shopping is still considered a risky proposition despite its utilitarian and hedonic values. This implies that, to attract potential buyers and turn infrequent buyers into frequent ones, online sellers should deliver various guarantees (e.g. security, privacy and order fulfilment) to inspire confidence, while consistently informing buyers about the advantages of online shopping, such as the wide selection of items, rich product information, competitive prices and convenience. Moreover, it is important to provide good services, such as effective handling problems and returns, compensating buyers for problems and easily available assistance.

Second, buyers are motivated by both utilitarian and hedonic values. Providing utilitarian value is largely under the control of the sellers. The dominant role of utilitarian value suggests that online sellers should ensure that they are providing adequate utilitarian value before focusing on other aspects of their online store. Shoppers, having successfully obtained the desired products from a particular online store, will remember this positive experience and are likely to purchase from the same store again. Jarvenpaa & Todd (1996) found that convenience was the single most salient benefit of online shopping. The high mean value of convenience (5.80) indicates that experienced buyers view online shopping as a way of buying products anytime and anywhere. For experienced buyers, however, convenience might be the inherent rather than dominant benefit of online shopping. Therefore, online stores should provide a wide selection of products and rich product information to increase their competitive advantage. Accessing useful product information and obtaining the desired goods are, of course, the primary reasons why experienced buyers choose the internet as an alternative channel. Thus, sellers should provide an online shopping environment that is characterised by broad assortment, rich product information, low prices and easy access and shopping.

Third, although the impact of hedonic value is less prominent than that of utilitarian value, online sellers should not ignore the hedonic values that drive consumers to shop, such as sensory stimulation, stress relief, role playing, bargain seeking, keeping up with new trends and social interaction. Delivering such benefits to buyers can increase their repeat purchase intention. To attract buyers, online sellers also need to pay sufficient attention to the experiential aspects of their website, positioning the shopping experience as an adventure or chance to reduce stress or alleviate a negative mood (Arnold & Reynolds, 2003).

Limitations

First, this study used a multiple-item, reflective measure for the perceived risk construct, even though prior research indicates that perceived risk is a multidimensional construct. Findings pertaining to the perceived risk construct should be validated in future studies by operationalising it as a second-order construct. Second, our sample comprises only active online consumers, and our results may have been affected by self-selection bias. Individuals who had already ceased to purchase products from Yahoo!Kimo might have different perceptions about the influence of utilitarian value, hedonic value and perceived risk. Therefore, the results should be interpreted as only explaining the repeat purchase intention of current online shopping customers. Although the Web survey might have been affected by self-selection bias, prior research has confirmed its potential for attracting diverse participation due to the online context, being easy to access and easy to answer. Samuel *et al*. (2004) suggest that the data provided by a self-selected internet sample are of at least as high a quality as those provided by traditional methods. Hayslett & Wildemuth (2004) indicate that there are no significant differences between the demographic backgrounds of self-selected respondents and a random sample. In summary, the influence of self-selection bias could be minor in this study. Third, as the data are cross-sectional, all of the statistically supported relationships can only be viewed as tentative and associational. Finally, the data came from only one online store (Yahoo!Kimo). Even if Yahoo!Kimo is the largest online store in Taiwan, the generalisability of the model and findings to other online stores requires additional research.

Future research

Chitturi *et al*. (2008) examined the relationship between product design benefits (hedonic vs. utilitarian) and the post-consumption feelings of customer delight and satisfaction across three studies of cell phones, laptop computers and automobiles. They found that hedonic benefits significantly affected delight through the promotion of emotions, while utilitarian benefits significantly affected satisfaction through the prevention of emotions. Delight and satisfaction had significant effects on customer loyalty – word of mouth and repeat purchase intention. Future research could examine whether such relationships are supported in the online shopping context.

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APPENDIX A. QUESTIONNAIRE ITEMS

Product offerings (PO) (adapted from Bakos (1998) and Szymanski & Hise (2000))	
PO1	This website provided a number of product offerings.
PO2	This website provided a variety of product offerings.
PO3	This website provided product features that suit the buyers' needs.
PO4	This website provided offerings that suit the buyers' preferences.
Product information (PI) (adapted from Ballantine (2005) and Yang *et al*. (2005))	
PI1	I thought that this website provided detailed information about the products featured.
PI2	This website provided a comprehensive list of the technical specifications of the products featured.
PI3	This website provided information on a large number of attributes for each of the products featured.
PI4	The information provided by this website is up to date.
Monetary saving (MS) (adapted from Rintamaki *et al*. (2006))	
MS1	I saved money when I shopped on this website.
MS2	I made inexpensive purchases via this website.
MS3	I got my purchases cheaper via this website than if I had made them elsewhere.
Convenience (CO) (adapted from Childers *et al*. (2001))	
CO1	Shopping on this website would allow me to save time.
CO2	Using this website would be a convenient way to shop.
CO3	I can use this website to shop anywhere.
CO4	This website would allow me to shop whenever I choose.
Adventure (AD) (adapted from Arnold & Reynolds (2003))	
AD1	To me, shopping on this website is an adventure.
AD2	I find shopping on this website stimulating.
AD3	Shopping on this website is a thrill for me.
AD4	Shopping on this website makes me feel like I am in my own universe.
Gratification (GR) (adapted from Arnold & Reynolds (2003))	
GR1	When I am in a low mood, I go shopping on this website to make me feel better.
GR2	To me, shopping on this website is a way of relieving stress.
GR3	I go shopping on this website when I want to treat myself to something special.
Role (RO) (adapted from Arnold & Reynolds (2003))	
RO1	I like shopping on this website for others because, when they feel good, I feel good.
RO2	I feel good when I buy things on this website for the special people in my life.
RO3	I enjoy shopping on this website for my friends and family.
RO4	I enjoy shopping around on this website to find the perfect gift for someone.
Best deal (BD) (adapted from Arnold & Reynolds (2003))	
BD1	For the most part, I go shopping on this website when there are sales.
BD2	I enjoy looking for discounts when I shop on this website.
BD3	I enjoy hunting for bargains when I shop on this website.
Social (SO) (adapted from Arnold & Reynolds (2003))	
SO1	I go shopping on this website with my friends and family in order to socialise.
SO2	I enjoy socialising with others when I shop on this website.
SO3	Shopping on this website with others is a bonding experience.
Idea (ID) (adapted from Arnold & Reynolds (2003))	
ID1	I go shopping on this website to keep up with the trends.
ID2	I go shopping on this website to keep up with new fashions.
ID3	I go shopping on this website to see what new products are available.
Perceived risk (PR) (adapted from Featherman & Pavlou (2003) and Pires *et al*. (2004))	
PR1	It is likely that the product I purchased on the website failed to meet the performance requirements originally intended by the purchase.
PR2	It is likely that shopping on this website will cause me to lose control over the privacy of my personal and payment information.
PR3	It is likely that shopping on this website will cause me to suffer a financial loss due to the hidden costs, maintenance costs or lack of warranty in case of faults.
PR4	It is likely that the online seller may fail to deliver the product or make a late delivery.
Repeat purchase intention (RI) (adapted from Flavián & Guinalíu (2006) and Parasuraman *et al.* (2005))	
RI1	I plan to continue using this website to purchase products.
RI2	I consider this website to be my first choice for transactions in the future.
RI3	It is likely that I will continue purchasing products from this website in the future.