The influence of Chinese cultural values on consumer perceptions and behavioral intention towards an apparel mass customization website

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The influence of Chinese cultural values on consumer perceptions and behavioral intention towards an apparel mass customization website

by

Kun Song

A dissertation submitted to the graduate faculty in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Major: Textiles and Clothing

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2008

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ABSTRACT

Mass customization may deliver superior value to consumers compared to mass production because it provides personalized products with prices close to mass produced products. This assertion was made under the conditions and assumptions in Western societies where individual needs, rights, and interests are greatly valued. It is not known whether mass customization will deliver similar value to consumers in other societies, where different value systems exist. The purpose of the present study was to examine Chinese consumers’ responses toward mass customization and the influence of Chinese cultural values on these responses.

This study focused on web-based apparel mass customization and investigated a) the effects of product price and customization level on consumers’ perceived value and b) the effects of perceived value on consumers’ behavioral intention. Additionally, this research examined the moderating roles of Chinese cultural values on the relationships between the marketing attributes (price and customization level) and perceived value and between perceived value and behavioral intention.

The study used a between-subject experimental design involving manipulations of price and customization level. Four different treatments of a t-shirt website, resulting from the combination of two price levels and two customization levels, were used as the stimuli. A total of 344 participants from China participated in the study. Each respondent browsed one of the four randomly assigned treatments and completed an online questionnaire. Structural equation models were used to test the hypotheses.

Results showed that higher price significantly reduced Chinese consumers’ perception of economic value and efficiency, as hypothesized. Mass customization significantly enhanced consumers’ perceptions of product quality, enjoyment, and escapism, as hypothesized. However, respondents did not perceive enhanced economic value from the mass customization treatments. As hypothesized, perceived value explained behavioral intention.
The study also found that two Chinese cultural values, relational orientation and man-nature orientation, significantly moderated the relationships between marketing attributes and perceived value and between perceive value and behavioral intention. These findings provide information needed for decision-making about marketing strategies for companies that would like to implement mass customization in China.
CHAPTER 1. OVERVIEW

1.1 Introduction

The objectives of marketing are to identify wants and needs of target market consumers and to deliver products and services that satisfy these wants and needs more efficiently than competitors (Bardakci & Whitelock, 2003). A traditional marketing approach attempts to identify homogeneous market segments with similar wants and needs and deliver products or services that meet common requirements of the market segments (Bardakci & Whitelock, 2003). However, this approach may no longer be sufficient to satisfy consumers as their wants and needs are rapidly changing and fragmented (Bardakci & Whitelock, 2003; Kotha, 1995, 1996; Pine, 1993). Consumers now demand products and services that provide more precise and complete response to their needs (Kotha, 1995). With the assistance of information technologies, a new marketing approach, mass customization, has been implemented to cope with the new requirements of products and services from the market.

Instead of identifying homogeneous market segments, mass customization views the individual consumer as a base on which to segment the market (Bardakci & Whitelock, 2003). The implementation of mass customization is enabled by advancements in information and manufacturing technologies. These technologies allow firms to provide customized products and services based on the needs and preferences of individual customers and produce on a large scale (Gilmore & Pine, 1997; Yolovich, 1993).

Along with this market change, Pine and Gilmore (1999) asserted that Western societies are moving into an era of an experience economy. They illustrated that Western societies have evolved from an agrarian economy, to an industrial economy, then to a service economy. Whereas agrarian, industrial, and service economies are based on agrarian commodities, industrial goods, and intangible services respectively, the experience economy stresses consumers’ experiences as the predominant economic offerings (i.e., source of added value
for the consumer) (Pine, 2003). Experiences are distinct economic offerings, as distinct from services as services are from goods (Pine & Gilmore, 1999). Pine (2003) indicated that mass customization could be an effective venue for companies to offer experiences because it automatically turns a transaction into an experience. In order to treat each consumer individually, mass customization integrates the consumer in product/service design and development, which used to be the domain of firms. The role of the customer changes into a co-designer or co-developer of products or services. Customers participate in a series of creative activities that are stimulating and exhilarating (Fiore, Lee, & Kunz, 2004). Thus, mass customization provides an outlet for creative expression and becomes a source of memorable experience from which a consumer perceives value.

One may note that mass customization as a new marketing approach was created under the market realities and assumptions in Western societies, where individual needs, rights, and preferences are emphasized. There has been little information regarding whether mass customization can be successfully implemented in a non-Western society, where a different value system exists. It is not known whether cultural uniqueness will influence the adoption of mass customization in other societies.

Kroeber and Parsons (1958, p. 583) defined culture as “transmitted and created content and patterns of values, ideas, and other symbolic-meaningful systems as factors in the shaping of human behavior and the artifacts produced through behavior”. As implied in this definition, culture consists of patterns of values that shape human behavior within the culture. Research has found that cultural values can greatly influence many aspects of consumption (e.g., Chan & Lin, 1992; Clarke & Soutar, 1982; Hiu, Siu, Wang, & Chang, 2001; Kacen & Lee, 2002; Tse, Wong, & Tan, 1988).

There has been a consensus among scholars (e.g., Hofstede, 1980; Triandis, 1995; Trompenaars, 1993) that Western societies are divergent in cultural values to many other societies, including Asian societies. For instance, Western societies are generally characterized as individualism-oriented cultures whereas Asian societies are often labeled as
collectivism oriented cultures. People in a collectivistic culture view themselves as an integral part of in-groups such as family and co-workers (Triandis, 1995). They tend to emphasize the connection with in-groups, be motivated by the norms or duties imposed by the in-groups, and give priority to the interest of the in-groups (Triandis, 1995). Personal needs, rights, and preferences, which are highly valued in individualistic cultures, may be less important to people in collectivistic cultures. This collectivism-individualism dichotomy leads to a question that has not been answered: will mass customization, founded on the assumptions and market conditions in individualistic cultures, be equally meaningful to consumers in collectivistic cultures?

In this study, I empirically examined perceived value that Chinese consumers may derive from mass customization and the influence of Chinese cultural values on their responses toward mass customization. I chose to investigate Chinese consumers for two reasons. First, China represents a non-Western collectivistic society, whose cultural values differ significantly in many aspects from those of Western societies. Second, China has become an important emerging market for international businesses because of its rapid economic growth and tremendous number of consumers (Gong, 2003). Thus Chinese consumer behavior warrants research attention. China has experienced dramatic social and economic changes since the adoption of the “Open Door” policy and market economy in 1979. Increased consumerism and similar consumption patterns to Western consumers were observed especially in major cities (Hiu et al., 2001). However, studies of Chinese cultural values found that traditional Confucian and Taoism doctrines are still basic pillars of the Chinese way of life today (Gong, 2003; Yau, 1994). Chinese cultural values form a clear and consistent system throughout generations (Kindle, 1982; Yau, 1994).

Scholars pointed out that the ultimate success of mass customization depends on the superior value that consumers can perceive from mass customization compared to mass production (Broekhuizen & Alsem, 2002). However, aside from the theoretical prediction that mass customization will enhance perceived value, there have been few studies that
empirically examined perceived value of mass customization (Fiore et al., 2004; Franke & Piller, 2004; Kamali & Loker, 2002; Marianna, 2006; Squire, Readman, Brown, & Bessant, 2004). It has not been fully understood what aspects of perceived value will be enhanced by mass customization.

According to Mathwick, Malhotra, and Ridgdon (2001), perceived value is a primary motivation for consumers to perform consumption actions. It is also an essential outcome of marketing activities. Manipulation of marketing attributes (i.e., price, brand name) can enhance (or reduce) consumers’ perception of value, which in turn leads to a behavioral intention such as purchase intention and the intention to return to a retail outlet. Research on mass customization (Bardakci & Whitelock, 2003; Kamali & Loker, 2002; Squire et al., 2004) revealed two important marketing attributes that determine perceived value: product price and level of customization (e.g., standard products and mass customized products). The present study empirically tested the effects of these two attributes on perceived value.

Research showed that cultural values can affect perceived value in two ways. First, cultural values may influence the perceived value that a consumer attaches to a product or an experience (Overby, Gardial, & Woodruff, 2004; Tse, Wong, & Tan, 1988). For instance, some consumers may attach higher economic value to a mass customized product whereas others may not due to different cultural values. Therefore, cultural values may moderate the relationships between customization level and perceived value. Second, cultural values may influence the relative importance of a particular aspect of perceived value in determining behavioral intentions (Kim et al., 2002; Malhotra, & McCort, 2001; Overby, Gardial, & Woodruff, 2004). For instance, economic value may be more important to purchase intention for some consumers than for others depending on their cultural values. Therefore, cultural values may moderate the relationships between perceived value and behavioral intention.

The present study used Mathwick et al.’s (2001) Experiential Value Model as the theoretical framework for the analysis of perceived value of mass customization. This model provided a broad spectrum of perceived value, which was believed to encompass the aspects
of perceived value delivered by mass customization. An advantage of this model is that it goes beyond the perceived value of products to include the perceived value derived from consumption experiences, which is where mass customization and mass production differ substantially.

Apparel companies were among the early entrants for mass customization (e.g., Lands’ End, Nike). Research showed that consumers have great interests in mass customization of apparel (Fiore, Lee, Kunz, & Campbell, 2001). Mass customization of apparel provides benefits to consumers in many ways. Consumers could a) achieve personalized fit, b) create a unique design based on his/her preferences, and c) enjoy a memorable consumption experience (Fiore et al., 2001). Most apparel mass customization firms have chosen to approach mass customization on the Internet. The Internet provides a sufficient interactive platform to involve customers in development and design of apparel products (Kamali & Loker, 2002). Therefore the present study focused on web-based apparel mass customization.

1.2 Objectives of the study

The objectives of this study are to understand 1) Chinese consumers’ responses toward mass customization of apparel and 2) the influence of Chinese cultural values on these responses.

1.3 Definition of terms

The following concepts and terms were used throughout the study. Definitions of these concepts and terms are:

**Mass customization:** Customization and personalization of products and services for individual customers at a price close to mass-produced products. With the aid of interactive technologies such as the Internet, customers can closely interact with a company and specify
unique requirements or modify product design. The products may be then manufactured by automated systems that keep production costs close to mass production level (Gilmore & Pine, 1997; Yolovich, 1993).

**Culture:** “Transmitted and created content and patterns of values, ideas, and other symbolic-meaningful systems as factors in the shaping of human behavior and the artifacts produced through behavior” (Kroeber & Parsons, 1958, p. 583).

**Culture values:** “Learned, relatively enduring, emotionally charged, epistemologically grounded and represented moral conceptualizations that assist us in making judgments and in preparing us to act. In other words, the priorities we set and the choices we make are significantly based upon the (cultural) values we hold” (Frey, 2005, p. 1).

**Perceived value:** Utilities, returns, benefits, and meanings derived from products, services, and/or experiences that motivate consumption actions.

**Behavioral intention:** The probability or likelihood of a consumer’s behavior in the future.
CHAPTER 2. LITERATURE REVIEW

2.1 Mass customization

2.1.1 What is mass customization?

Mass customization was first proposed by Toffler in 1970 and then defined by Davis in 1987 in the book *Future Perfect*. This concept received further attention in the 1990s paralleling the advances in information and manufacturing technologies, which support its actual implementation. Pine (1993) viewed mass customization as a hybrid of mass production and craft customization. He defined mass customization as the mass production of individually customized goods and services.

Mass customization differs from product-centered mass production in that mass customization integrates the customer in product design so the customer acts as a designer or co-creator of the product (Bardakci & Whitelock, 2003). In many forms of mass customization, the product is sold before it is produced, whereas mass production pushes what is already produced into the market. Mass customization differs from traditional craft customization in its rapidness and lower expense compared to craft customization (Boynton, Victor, & Pine, 1993). Another distinguishing element of mass customization is the application of advanced manufacturing technologies such as flexible manufacturing. These technologies make it possible to adjust production to the demand of individual customers and at the same time produce a large volume, so firms can maintain efficiency close to mass production.

2.1.2 Returns and sacrifices of mass customization

Despite the proposition that mass customization provides superior value to consumers compared to mass production, mass customization may not be the best strategy for all
companies in all cases (Squire et al., 2004; Zipkin, 2001). Although integrating the customer in product design before purchase may lead to products that better match individual needs and preferences, some customers may not find mass customization necessary (Squire et al., 2004).

Scholars regarded perceived value as a trade-off between returns and sacrifices (Zeithaml, 1988, Agarwal & Teas, 2001). Mass customization may cause sacrifices such as higher prices and more complex transactions (Bardakci & Whitelock, 2003; Dellaert & Stremersh, 2005; Squire et al., 2004). Bardakci and Whitelock (2003) pointed out that consumers’ willingness to pay a premium and to spend extra time to design the product are critical to their acceptance of mass customization. Dellaert and Stremersch (2005) studied consumer interactions with the functions of a mass customization website for personal computers. They found a trade-off between product utility (i.e., the utility of a customized product that better fits a user's needs) and process complexity as perceived by the user. If perceived process complexity is high, perceived product utility will be decreased.

### 2.1.3 Apparel mass customization

Pine (2003) asserted that mass customization makes absolute sense for the apparel industry. Mass customization may substantially change the apparel industry, which has been burdened by a $25 billion annual loss due to unsold products (Pine, 2003). Because each mass customized product is made after an order is placed, firms may substantially reduce inventory. Empirical research showed that consumers are interested in customizing various aspects of apparel such as style, fit, color, fabric texture, and print (Anderson et al., 1997; Lee et al., 2002). An exploratory investigation by TC² indicated that a substantial proportion of consumers are willing to pay more for mass customized apparel and footwear (Fralix, 2001).

Mass customization of apparel may concentrate on either customer-designed apparel (e.g., Customink.com, Zazzle.com) or providing a customized fit (e.g., Landsend.com, Brooks Brothers). The former involves the customer in the design of aesthetic aspects of the
product and concentrates on providing an outlet for creative expression, whereas the latter concentrates on providing a better match to consumers’ functional needs. These two forms of apparel mass customization are not mutually exclusive as companies often include elements of both. Lands’ End’s “Custom Jeans” program, for instance, offers jeans made to individual customers’ measurements and at the same time involves customers in creative design by letting them select from fabric and style options (Customer Clothing Today, n.d.; Fralix, 2001). Although both types of apparel customization deserve research attention, the present study mainly focuses on the former.

Consumers of mass customized apparel generally encounter sacrifices of both higher prices and more complex transactions. Mass customized apparel is usually higher-priced than mass-produced products, even though it is much lower-priced than craft-customized apparel. For example, Lands’ End charges about $54 for a pair of mass customized jeans, whereas its mass-produced jeans are only $29. Additionally, designing a product may be a complex and challenging task for many customers. Purchasing a pair of mass customized jeans from the Lands’ End website requires far more steps than purchasing a pair of standard jeans.

Despite the anecdotal evidence about the impact of product price and mass customization on perceived value of apparel, few studies (Franke & Piller, 2004; Kamali & Loker, 2002) have empirically tested the effects of these two factors on perceived value and other consumer responses. Kamali and Loker (2002) studied consumers’ satisfaction and perceived value (measured as willingness to pay) towards customer-designed t-shirts. They found that consumers perceived significantly higher value for t-shirts designed by themselves than standard products. Similarly, Franke and Piller (2004) studied perceived value for customer-designed watches and found that these products significantly enhanced perceived value. Both studies operationalized perceived value as willingness to pay. This conceptualization of perceived value as money willing to be paid is insufficient because of the multi-dimensional nature of the concept of value (e.g., Babin & Darden, 1995; Holbrook & Corfman, 1985; Holbrook & Hirschman, 1982; Mathwick et al., 2001; Sweeney & Soutar,
Mass customization may enhance some value dimensions, but fail to enhance or even reduce other dimensions. Therefore, it is necessary to examine the effects of mass customization on individual dimensions of perceived value. The present study furthers Kamali and Loker’s (2002) and Franke and Piller’s (2004) research on customer-designed apparel by examining various dimensions of perceived value.

2.2 Perceived value

2.2.1 Conceptualization

Perceived value has been shown to affect a broad range of consumer behaviors including behavioral intention (e.g., Agarwal & Teas, 2001; Chen & Dubinsky, 2003; Kim, 2004), satisfaction (e.g., Lee & Overby, 2004; Kim, 2004), loyalty (e.g., Lee & Overby, 2004; Oppen, Odekerken-Schroder, & Wetzels, 2005), and preferences (e.g., Mathwick et al., 2001). A review of literature showed that this construct has been conceptualized in various ways. A group of studies conceptualized perceived value as value-for-money (i.e., Cravens, Holland, Lamb & Moncrieff, 1988; Zeithaml, 1988). This conceptualization views a consumer’s decision about a product as the result of rational calculations of utilitarian benefits and economic costs (Sweeney & Soutar, 2001). This conceptualization was criticized as too simplistic and neglecting the hedonic and experiential aspects of a consumption experience (Sweeney & Soutar, 2001).

Holbrook and Hirschman (1982) argued that consumers also value experiential aspects, including symbolic, hedonic and aesthetic aspects of a consumption experience. They suggested addition of an experiential value dimension to the conceptualization. Their conceptualization included a utilitarian dimension and an experiential dimension. The utilitarian dimension focuses on the evaluation of extrinsic value such as quality, performance, and price; the experiential dimension focuses on the evaluation of intrinsic
value such as fun, feeling, and fantasy (Holbrook & Hirschman, 1982). Following in Holbrook and Hirschman’s footsteps, several studies (i.e., Babin & Darden, 1995; Mathwick et al., 2001; Holbrook & Corfman, 1985) have also examined extrinsic value and intrinsic value of a consumption experience.

Expanding on the extrinsic-intrinsic value framework, Holbrook (1985) added an active-reactive criterion to the conceptualization of perceived value. The active-reactive criterion suggests a distinction between the value derived from active participation in a consumption experience and the value derived from reactive appreciation of an object or environment (Mathwick et al., 2001). For example, a consumer can perceive value from playing a video game (active value); they can also perceive value from watching a movie (reactive value). Consumers are not only reactive receivers of value but also active co-producers of value. The extrinsic-intrinsic criterion and active-reactive criterion can be viewed as two axes perpendicular to each other in space (see Figure 2.1). Each quadrant of the diagram represents a dimension of perceived value. Thus, perceived value contains four dimensions: extrinsic-active value, extrinsic-reactive value, intrinsic-active value, and intrinsic-reactive value (Mathwick et al., 2001). They were named return of investment (ROI), product performance/quality (PPQ), playfulness, and aesthetics respectively.

Based on this framework, Mathwick et al. (2001) developed an Experiential Value Model, which consists of two orders of perceived value dimensions (see Figure 2.2). The first-order dimensions include ROI, PPQ, playfulness, and aesthetics. The second-order dimensions (sub-dimensions) include economic value, efficiency, visual appeal, entertainment, enjoyment, and escapism, which act as indicators of the first-order dimensions.

2.2.1.1 ROI

ROI taps an extrinsic-active category of perceived value. During a consumption experience, a consumer actively invests financial, temporal, and psychological resources in
order to obtain products that better match his/her needs and preferences. ROI reflects the trade-off between perceived returns and investments (Mathwick et al., 2001). Assessment of ROI may be processed in terms of economic value (i.e., a bargain) as well as efficiency of a transaction (i.e., convenience) (Holbrook, 1994; Zeithaml, 1988; Mathwick et al., 2001). Thus, the ROI includes two sub-dimensions: economic value and efficiency (see Figure 2.2). A consumer will derive higher economic value and efficiency from a consumption experience when his/her needs and preferences are better met and/or when investments of financial, psychological, and temporal resources are reduced. Kim (2002) indicated that Internet shopping could enhance both economic value and efficiency due to increased product variety, extensive price comparison, freedom from travel to the store, and ease of ordering and payment.

Figure 2.1 Theoretical framework of perceived value

Note: Adapted from Mathwick et al. (2001).
2.2.1.2 PPQ

PPQ taps the extrinsic-reactive category of perceived value. Consumers’ evaluation of product performance and quality may happen in both pre- and post-purchase stages of a consumption experience. In the pre-purchase stage, a consumer may evaluate a product by trying and testing it as well as referring to external cues such as brand name, price, store
environment, and product description (Richardson, Dick, & Jain, 1994). In an online shopping setting, where trying and testing of products are not possible, reference to the external cues becomes more important. Kim (2002) found that price and website interface significantly affected consumers’ assessment of quality.

### 2.2.1.3 Aesthetics

Aesthetics taps the intrinsic-reactive category of perceived value. This dimension of perceived value includes two sub-dimensions: visual appeal (the salient visual elements of the retail environment) and entertainment (dramatic aspects of a consumption experience) (Mathwick et al., 2001) (see Figure 2.2). Visual appeal is determined by the design, physical attractiveness, and beauty inherent in the retail environment (Holbrook, 1985; Mathwick et al., 2001). Use of colors, graphics, layout, and photography on a website may yield this value. Whereas visual appeal emphasizes stimulation to the visual sense, the entertainment dimension reflects an appreciation for the retail “spectacle” (Mathwick et al., 2001), which can encompass stimulation to all senses. Website features such as music, animation, and video would influence entertainment. Both visual appeal and entertainment offer immediate pleasure for its own sake, irrespective of practical considerations (Mathwick et al., 2001).

### 2.2.1.4 Playfulness

Playfulness taps the intrinsic-active category of perceived value. Playfulness reflects the intrinsic enjoyment that comes from engaging in activities that are absorbing, to the point of offering an escape from the demands of the mundane world (Mathwick et al., 2001). The defining distinction between intrinsic-reactive value and intrinsic-active value is the shift of the customer’s role from a distanced spectator of the aesthetic elements to a participant who co-produces value (Mathwick et al., 2001). This dimension of perceived value includes two sub-dimensions, enjoyment and escapism (see Figure 2.2). Enjoyment is derived from consumers’ participation in playful activities during a consumption experience without
practical considerations (Mathwick et al., 2001). Escapism is yielded when a consumer is absorbed in the activities and temporally feels removed from the day-to-day pressure-filled world. Both enjoyment and escapism can be affected by interactive features of a retail environment (Song, Fiore, & Park, 2005). For instance, allowing the customer to examine, test, and try products can enhance enjoyment and escapism.

The present study adopts Mathwick et al.’s (2001) Experiential Value Model as a theoretical framework for perceived value because this model measures perceived value derived from consumption experiences and stresses consumers’ active participation in value creation. Mass customization of apparel fosters a consumption experience involving activities such as picking out styles, choosing colors, selecting fabrics, and specifying sizes according to one’s preferences or needs. The customer may derive value not only from the utility of the product but also from the stimulating creative experience itself (Fiore et al., 2001; Fiore et al., 2004).

2.2.2 Marketing attributes and perceived value dimensions

This section will discuss how marketing attributes of product price and customization level (e.g., standard products and mass customized products) may affect dimensions of perceived value. Figure 2.3 illustrates the proposed relationships between these two marketing attributes and perceived value dimensions.

2.2.2.1 Economic value

Economic value reflects the trade-off between financial investment and outcome of a transaction. Mass customization of products may enhance economic value because it offers greater value to consumers by providing products that better fit a customer’s personal needs and preferences (Franke & Piller, 2004; Kamali & Loker, 2002). Therefore, I posited that customization level will positively affect economic value (see Figure 2.3). Because a higher product price increases financial investment of a transaction, product price will negatively
affect economic value (see Figure 2.3).

### 2.2.2.2 Efficiency

Efficiency reflects the trade-off between temporal and psychological investments and outcome of a shopping experience. Although mass customization of products may enhance the shopping outcome by providing products that better fit the preferences and needs of consumers, it will cause greater investment of time and energy due to a more complex transaction. Dellaert and Stremersch (2005) supported that complexity of the mass customization transaction significantly reduces product utilities. Therefore, I proposed that customization level will negatively affect efficiency (see Figure 2.3). Efficiency may be negatively influenced by product price. High prices may restrain customers from purchasing after putting time and efforts into the consumption process. Customers are not likely to perceive a shopping experience as saving time and energy when they are retrained from purchasing the products by high prices. Therefore, I proposed that product price will negatively affect efficiency (see Figure 2.3).

### 2.2.2.3 Product performance/quality

Evaluation of product performance/quality (PPQ) could be influenced by product price because of consumers’ use of price as an indicator of quality. Consumers may assume that high quality products generally cost more to produce than low quality products and business competition restrains companies from charging high prices for low-quality products (Agarwal & Teas 2001). Many studies have empirically supported this price-quality equation (Agarwal & Teas, 2001; Chen & Dunbinsky, 2003; Dodds, Monroe, & Grewal, 1991). Therefore, I posited that product price will positively affect product performance/quality (see Figure 2.3).
Figure 2.3 Overall causal model for marketing attributes, perceived value, and behavioral intention
Providing mass customization challenges a firm’s managerial and manufacturing capability. Firms may need to invest more in technologies and dramatically change their managerial system to cope with the higher demands of mass customization (Pine, 1993). Offering mass customization of products signals a firm’s technological and managerial capability. This may enhance customers’ image of the firm’s expertise in its area of specialty and consequently they may have higher confidence on the quality of the products. Therefore, I proposed that customization level will positively affect product performance/quality (see Figure 2.3).

2.2.2.4 Enjoyment and Escapism

For consumers of mass customized apparel, the transaction process is full of trial and error (Franke & Schreier, 2006). Designing apparel on a website involves a close interaction with various design functions on the site. The consumer acts as a designer, creating unique products from an array of design options and sees the creation take shape on the computer screen (Fiore et al., 2004). These activities may provide enjoyment, which is independent of practical considerations (Franke & Schreier, 2006). Engaging in the design activities may also offer the customer an opportunity to escape from the pressure-filled day-to-day world. Research indicated that interaction with the product and the website in an online retail environment creates an absorbing experience, where consumers feel removed from the demands of the mundane world (Song et al., 2005). Therefore, I proposed that customization level will positively affect enjoyment. I also proposed that the customization level will positively affect escapism (see Figure 2.3).

2.3 Behavioral intention

Behavioral intention is often used as a substitute for actual behavior in consumer research. Purchase intention is probably the most frequently researched behavioral intention
regarding consumers. However, it was said to be too narrow for online consumer behavior research (Kim, 2004). Although the ultimate goal of marketers is to persuade consumers to purchase, other behaviors such as browsing and revisiting the website are also critical to web-based businesses. That is, building the “stickiness” of a website is equally important to attracting new purchasers.

Zeithaml, Berry, and Parasuraman (1996) suggested a broader measure of behavioral intention in a study related to perceived service quality. The aspects of intention included were customers’ willingness to a) say positive things about the service provider, b) recommend the service provider to other consumers, c) remain loyal to it, d) spend more money, and e) pay a premium price. Kim (2004) examined behavioral intentions resulting from perceived value and satisfaction with the products and services of Internet apparel websites. Kim’s behavioral intention construct included intentions to purchase, revisit the website, search for information, say positive things, and recommend the website to others. Using exploratory factor analysis, Kim found that these intentions fall into a single behavioral intention dimension. The present study adopted Kim’s (2004) behavioral intention scale because it was designed specifically for apparel websites. The items of this scale represent a broad range of behavioral intention aspects essential to web-based apparel businesses.

Figure 2.3 illustrates the proposed causal relationships between perceived value and behavioral intention. Based on theoretical and empirical support for the causal relationships between perceived value and behavioral intention (e.g., Malhotra, & McCort, 2001; Kim, 2004; Chen & Dunbinsky, 2003), I proposed that ROI, PPQ, and playfulness will positively affect behavioral intention. Following Mathwick et al.’s (2001) hierarchical structure of perceived value, the second-order perceived value dimensions (economic value, efficiency, product enjoyment, escapism) were specified as the indicators of the first-order dimensions.
2.4 Cultural values

2.4.1 Culture and cultural values

Among many definitions of culture, Kroeber and Parsons’ (1958) definition is appropriate for the present study because it stresses the relationship between culture and human behaviors. They defined cultural value as “transmitted and created content and patterns of values, ideas, and other symbolic-meaningful systems as factors in the shaping of human behavior and the artifacts produced through behavior” (p. 583). This definition notes that members of a cultural group learn patterns of thinking, feeling, and acting from experience in a particular defined social environment. Culture represents “mental programming”, which predetermines a person’s behaviors. Kroeber and Parsons’ definition reinforced that culture consists of values, which serve to guide norms of behavior.

In a human society, there are underlying values, which are retained through generations as part of a culture. At the individual level, many of these values become incorporated as enduring beliefs, which affirm what is desirable by members of the society and which have an impact on behavior (Frey, 2005; Nicosia & Mayer, 1976). These values are called cultural values, referring to normative beliefs that individuals have about how they should behave within their culture.

2.4.2 Influence of cultural values on consumer behavior

Literature shows that cultural values influence a broad range of consumer behaviors such as product choice (e.g., Clarke & Soutar, 1982), impulse buying (e.g., Kacen & Lee, 2002; Shamdasani & Rook, 1989), and complaining (e.g., Le Claire, 1993). Cultural values also influence numerous cognitive constructs that have an impact on these behaviors. These constructs include decision-making strategies (e.g., Chan & Lin, 1992, Hiu et al., 2001; McDonald, 1995), information processing (e.g., Olshavsky, Moore, & Lim, 1988), involvement (e.g., Zaichowsky & Sood, 1987), attitudes (e.g., Tan & Farley, 1987), and
perceived value (e.g., Overby, Gardial, & Woodruff, 2004; Tse, Wong, & Tan, 1988). Therefore, understanding cultural values allows marketing managers to anticipate consumers’ reactions to marketing practices such as advertising, positioning, and product features in a particular culture (Schutte & Ciarlante, 1998). Sheth and Sethi (1977) indicated that understanding of cultural values may help one predict the circumstances under which a given product or idea would be accepted in a society.

2.4.3 Dimensionality of cultural values

In order to understand and profile cultural values, many researchers have attempted to develop models for cultural value dimensions. A review of literature identified two bodies of scholarship that explored different dimensions of cultural values. The first body of scholarship aimed at establishing universal value dimensions that can be applied across cultures. Hofstede’s (1980) and Trompenaars’ (1993) cultural value typology represent this body of scholarship. The second body of scholarship concentrated on a particular culture and attempted to identify unique value dimensions of that culture. Nakamura’s (1960), Van Oort (1970), and Yau’s (1994) studies of Chinese cultural values represent this body of scholarship.

In consumer behavior studies, the cultural value dimensions identified in the first body of scholarship were usually applied in cultural comparison studies (e.g., Chinese consumers vs. U.S. consumers) due to their universality across cultures. The cultural value dimensions identified in the second body of scholarship were often used in consumer behavior studies that concentrated on a particular culture due to their focus on unique concepts and issues within that culture. Since the purpose of the present study is to investigate consumer behavior in China instead of comparing Chinese consumers with consumers from other cultures, this study adopted the Chinese cultural value framework developed by Yau (1994), which represents the second body of scholarship.
2.4.4 Dimensions of Chinese cultural values

Yau (1994) described five dimensions of Chinese cultural values. These dimensions include relational orientation, man-nature orientation, man-himself orientation, past-time orientation, and personal activity orientation. Whereas all five will be explained here, I selected two cultural values, man-nature orientation and relational orientation, as potential moderators between mass customization and consumer behavior. Literature (e.g., Le Claire, 1992, 1993; Malhotra & McCort, 2001; Schutte & Ciarlante, 1998; Yau, 1994) supports the potential influence of man-nature orientation and relational orientation on consumer behavior, although it appears that the present study is the first attempt to examine their effects on behavior towards mass customization.

2.4.4.1 Relational orientation

Relational orientation reflects the collectivistic nature of Chinese culture (Le Claire, 1992). Relational orientation includes four aspects: group orientation, interdependence, face, and respect for authority (Yau, 1994). Group orientation underlies the Chinese tradition of collectivism. Hofstede (1980) indicated that the Chinese as well as other Asian people are collectivistic. Collectivistic people view themselves as an integral part of in-groups such as the family and co-workers (Triandis, 1995). They are likely to be motivated by the norms or duties imposed by in-groups, give priority to the interest of the in-group, and emphasize connection with the in-group. In-group members form an interdependent relationship with each other, meaning that opinions of in-group members have a strong influence on one’s personal behavior. Maintaining harmony within an in-group is often regarded as a duty of all group members. An important concept relevant to in-group harmony is face (Mian Zi). Giving face to others (showing respect) and avoiding losing one’s own face (being humiliated) help maintain in-group harmony. Losing face would make it difficult for a person to function properly within the community (Hu, 1944). Another unique characteristic of the Chinese relational orientation is respect for authority and acceptance of hierarchical social structure.
This emphasis may root in Confucius’ five cardinal relations between sovereign and minister, father and son, husband and wife, old and young, and between friends, which are constructed in hierarchical patterns (Nakamura, 1960). The prescriptions of the relations have been generalized and extended to wider social contexts.

2.4.4.2 Man-nature orientation

The man-nature orientation includes two aspects of Chinese cultural values: harmony with nature and Yuan (Yau, 1994). According to harmony with nature, originating in Taoism, man is perceived as a part instead of the ruler of nature. Taoism believes that man should not try to overcome or master nature but has to learn how to adapt to it so as to reach a harmony. Nature has the Way (Tao) by which all things become what they are (Chan, 1963). Apart from the doctrine of the Way, Yuan is another important belief rooted in the hearts of most Chinese (Yau, 1994). Yuan can be referred to as predetermined relations with other things or individuals, which are far beyond one’s control. The existence or absence of interrelations with the universe is predetermined or governed by powerful external forces (Schutte & Ciarlante, 1998; Yau, 1994).

2.4.4.3 Man-to-himself orientation

The man-to-himself orientation underlies the traditional upbringing of Chinese to understand and follow their legitimate roles (Le Claire, 1992). This dimension of Chinese cultural values includes two aspects: abasement and situation-orientation. Formation of these two aspects is greatly influenced by child-rearing practices of Chinese families. The Chinese believe in modesty and self-effacement, which are two important virtues that a child uses to cultivate his/her mind. In the past, a Chinese individual would call him/herself “the worthless” before his/her teacher, and “the unfilial1 son” before his parents to show abasement. The Chinese adopted a pragmatic situation-oriented worldview due to childhood

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1 Unfilial means not observing obligations of a child to parents.
exposure to many different points of view from extended family members (i.e., parents, uncles and aunts, and other adults). Chinese children learn that circumstances have an important bearing upon what is right or wrong, and compromise in most cases is inevitable. Nakamura (1964) characterized the Chinese way of thinking as practical compared to the Western way of thinking. Similarly, Kahn (1979) suggested that the Chinese developed a pragmatic approach regarding tasks because of their willingness to compromise in order to achieve a goal.

### 2.4.4.4 Time orientation

Past-time orientation reflects the great respect Chinese have for their past (Yau, 1994; Le Claire, 1992). This orientation is represented by strong family traditions and worship of ancestors. Van Oort (1970) indicated that Chinese people are highly history minded. They have a strong admiration of their culture, which survived several thousand years.

The salient ethnological fact about Chinese culture is that it has been based on a stable agricultural economy, which provided a stable food supply (Yau, 1994). In contrast to nomadic people, the Chinese were averse to taking risks and were less innovative in order to secure a stable food supply; it was safer to follow the traditional proven methods, which have worked for generations (Yau, 1994).

Such a past-time orientation also influences the continuity of personal relations. Chinese believe that once a relation is established, it should not be easily broken. This is evidenced by the Chinese proverb: “If you have been my teacher for a day, I will treat you like my father forever.” Therefore, previous experience with a firm may highly influence Chinese consumers’ responses toward a firm’s marketing efforts.

### 2.4.4.5 Activity orientation

The activity orientation suggests an appreciation of moral self-control and avoidance of extreme forms of behavior. An important concept of Chinese activity orientation is the Mean
(Zhong Yong), which according to Confucius was without inclination to either side (Legge, 1960). Confucius did not believe in suppressing passions and impulses, but in regulating them so as to achieve internal harmony (Legge, 1960). The Chinese are taught to avoid complete repression or unrestricted satisfaction of primitive passions and impulses (Yau, 1994).

### 2.4.5 Moderating roles of Chinese cultural values

#### 2.4.5.1 Moderating roles of relational orientation

Relational orientation reflects the tendency that Chinese would prioritize the interests, demands, and requirements of in-groups over one’s own needs, rights, and preferences. In consumption scenarios, this value may encourage consumers to conform to group norms and suppress the desire to seek unique products. Because of relational orientation, expression of uniqueness in consumption may be interpreted as a deviation from the group norm and incur the risk of being treated as an outsider who does not know how to adjust to the group (Schutte & Ciarlante, 1998). His/her social acceptability may be at stake. As a result, higher relational orientation consumers may show less interest in using mass customization to create a unique product. Therefore, higher relational orientation consumers may derive less enjoyment and escapism from participating in product design compared to lower relational orientation consumers. In addition, higher relational orientation consumers, as compared to lower relational orientation consumers, may not regard customer-designed apparel as offering high economic value. Therefore, I proposed that relational orientation will negatively moderate the effects of customization level on economic value, enjoyment, and escapism (see Figure 2.4). Specifically, the (positive) effects of customization level on economic value, enjoyment, and escapism will be weaker for higher relational orientation consumers than lower relational orientation consumers.

Relational orientation may also affect the relationship between product price and PPQ.
Research showed that using price as a signal of product quality is a universal behavior across cultures (Dawar & Parker, 1994; Probert & Lasserre, 1997; McGowan & Sternquist, 1998). However, the extent to which consumers rely on price for quality assessment may be subject to cultural differences (Dawar & Parker, 1994). Le Claire (1992) studied Chinese consumers in Hong Kong and Singapore and found that those with a higher level of Chinese cultural values rely more heavily on price for purchase decision-making than those with a lower level. A similar finding is found in Tan and McCullough’s (1985) study. Schutte and Ciarlante (1998) argued that the reliance on price for quality assessment is most critical for products that are under review by peer in-group members (i.e., family members, co-workers, and friends). Apparel is a highly visible product to peer group members. Chinese consumers with higher relational orientation are likely to use the price-quality equation to reduce the risk of disapproval by peer group members and to help individuals to stay in line with outside expectations. Therefore, I posited that the (positive) relationship between price and PPQ will be stronger for higher relational orientation consumers than lower relational orientation consumers. Thus, relational orientation will positively moderate the relationship between price and PPQ (see Figure 2.4).

Similar to product price, mass customization may also be used as a signal of quality by consumers when making consumption decisions. Chinese consumers with higher relational orientation are more likely to use mass customization as an indicator of quality in order for them to reduce the risk of disapproval by peer group members and stay in line with outside expectations. Therefore, I posited that the (positive) relationship between customization level and PPQ will be stronger for higher relational orientation consumers than lower relational orientation consumers. Thus, relational orientation will positively moderate the relationship between customization level and PPQ (see Figure 2.4).

Moreover, I proposed that relational orientation will moderate the effects of extrinsic value (ROI and PPQ) and intrinsic value (playfulness) on behavioral intention. Chinese consumers with higher relational orientation are likely to weigh ROI and PPQ heavily during
a decision-making process regarding apparel. Kim et al. (2002) compared behavioral difference between Korean and Chinese consumers on apparel purchase behaviors. In comparison to Korean consumers, they found Chinese consumers’ need for product function, which reflects extrinsic value, to be more important in decision-making. They also found a stronger correlation between functional needs and purchase behavior for Chinese consumers than for Korean consumers. Although both cultures are collectivistic, Kim et al. regarded Chinese consumers as more interdependent due to Korean consumers’ higher degree of exposure to Western culture. This exposure may have affected Korean consumers’ more independent behavior towards apparel. These findings support the direction of the proposed moderating effects of relational orientation on the relationship between extrinsic value (ROI and PPQ) and behavioral intention.

Compared to perceived extrinsic value, intrinsic value may be less important in the decision-making process for Chinese consumers with a higher level of relational orientation than for those with a lower level. This negative moderating effect on intrinsic value and behavioral intention is supported by previous research (Kim et al., 2002) that found that experiential needs, which reflect intrinsic value, were more important during the decision-making process for Korean consumers than for Chinese consumers. They found a weaker correlation between experiential needs and purchase behavior for Chinese consumers than for Korean consumers.

Based on the above discussion, I proposed that relational orientation will positively moderate the relationships between extrinsic value (ROI and PPQ) and behavioral intention and negatively moderate the relationship between intrinsic value (playfulness) and behavioral intention (see Figure 2.4). Specifically, the (positive) relationships between extrinsic value (ROI and PPQ) and behavioral intention will be stronger for higher relational orientation consumers than lower relational orientation consumers. The (positive) relationship between intrinsic value (playfulness) and behavioral intention will be weaker for higher relational orientation consumers than lower relational orientation consumers.
2.4.5.2 Moderating roles of man-nature orientation

Man-nature orientation suggests that everything has its Way (Tao) to become what it is. Man should not try to overcome or master nature but should learn how to adapt to it. Man-nature orientation also stresses that the predetermined relations among objects and person are beyond one’s control. A Chinese consumer with a high level of man-nature orientation may attribute the encounter with a product to be predetermined (Yau, 1994). As a result, a high level of man-nature orientation may limit consumers’ interest and desire in using mass customization to modify the design of a product. Therefore, higher man-nature orientation consumers may derive less enjoyment and escapism from participating in product design in comparison to lower man-nature orientation consumers. In addition, higher man-nature orientation consumers may attach limited added value to self-designed products compared to lower man-nature orientation consumers. Thus, I propose that man-nature orientation will negatively moderate the effect of customization level on economic value, enjoyment, and escapism (see Figure 2.5). Specifically, the (positive) effects of customization level on economic value, enjoyment, and escapism would be weaker for higher man-nature orientation consumers than lower man-nature orientation consumers.

Le Claire (1993) found that Chinese consumers were reluctant to complain about products that did not meet their expectations. Yau (1994) argued that Chinese consumers have a great tendency to attribute failure of products to fate or Yuan rather than to the manufacturer or the outlet from which the product was purchased. Likewise, a Chinese consumer who strongly believes in Yuan may attribute a high price to uncontrollable forces. As a result, higher man-nature orientation consumers may be less sensitive to high prices compared to lower man-nature orientation consumers. Therefore, I posited man-nature orientation will negatively moderate the effects of product price on economic value and efficiency (see Figure 2.5). Specifically, the (negative) effect of product price on economic value will be weaker for higher man-nature orientation consumers than lower man-nature orientation consumers.
orientation consumers. Additionally, the (negative) effect of product price on efficiency will be weaker for higher man-nature orientation consumers than lower man-nature orientation consumers.

Moreover, I proposed that man-nature orientation moderates the effects of perceived active value (ROI and playfulness) and reactive value (PPQ) on behavioral intention. Due to the reactive nature of man-nature orientation, perceived reactive value may play a more important role in decision making for higher man-nature orientation consumers than lower man-nature orientation consumers. On the other hand, active value (ROI and playfulness) may be less important for higher man-nature orientation consumers than lower man-nature orientation consumers during decision-making processes. Therefore, I proposed that man-nature orientation will positively moderate the effect of perceived reactive value (PPQ) on behavioral intention and negatively moderate the effects of active value (ROI and playfulness) on behavioral intention (see Figure 2.5).
Figure 2.4 Moderating effects of relational orientation
Figure 2.5 Moderating effects of man-nature orientation
2.5 Hypotheses

Based on the previous discussion regarding the relationships among marketing attributes, perceived value, behavioral intention, and cultural values, I proposed the following hypotheses.

Relationships between marketing attributes and perceived value (see Figure 2.3)

H1a. Price will negatively affect economic value.
H1b. Price will negatively affect efficiency.
H1c. Price will positively affect PPQ.

H2a. Customization level will positively affect economic value.
H2b. Customization level will negatively affect efficiency.
H2c. Customization level will positively affect PPQ.
H2d. Customization level will positively affect enjoyment.
H2e. Customization level will positively affect escapism.

Relationships between perceived value and behavioral intention (see Figure 2.3)

H3a. ROI will positively affect behavioral intention.
H3b. PPQ will positively affect behavioral intention.
H3c. Playfulness will positively affect behavioral intention.

Moderating effects of relational orientation (see Figure 2.4)

H4a. The effect of product price on PPQ will be stronger for higher relational orientation consumers than lower relational orientation consumers.
H4b. The effect of customization level on economic value will be weaker for higher relational orientation consumers than lower relational orientation consumers.
H4c. The effect of customization level on PPQ will be stronger for higher relational
orientation consumers than lower relational orientation consumers.

H4d. The effect of customization level on enjoyment will be weaker for higher relational orientation consumers than lower relational orientation consumers.

H4e. The effect of customization level on escapism will be weaker for higher relational orientation consumers than lower relational orientation consumers.

H5a. The effect of ROI on behavioral intention will be stronger for higher relational orientation consumers than lower relational orientation consumers.

H5b. The effect of product PPQ on behavioral intention will be stronger for higher relational orientation consumers than lower relational orientation consumers.

H5c. The effect of playfulness on behavioral intention will be weaker for higher relational orientation consumers than lower relational orientation consumers.

Moderating effects of man-nature orientation (see Figure 2.5)

H6a. The effect of price on economic value will be weaker for higher man-nature orientation consumers than lower man-nature orientation consumers.

H6b. The effect of price on efficiency will be weaker for higher man-nature orientation consumers than lower man-nature orientation consumers.

H6c. The effect of customization level on economic value will be weaker for higher man-nature orientation consumers than lower man-nature orientation consumers.

H6d. The effect of customization level on enjoyment will be weaker for higher man-nature orientation consumers than lower man-nature orientation consumers.

H6e. The effects of customization level on escapism will be weaker for higher man-nature orientation consumers than lower man-nature orientation consumers.

H7a. The effect of ROI on behavioral intention will be weaker for higher man-nature orientation consumers than lower man-nature orientation consumers.

H7b. The effect of PPQ on behavioral intention will be stronger for higher man-nature
orientation consumers than lower man-nature orientation consumers.

H7c. The effect of playfulness on behavioral intention will be weaker for higher man-nature orientation consumers than lower man-nature orientation consumers.
CHAPTER 3. METHODS

This chapter reports the research methods used in the present study. The sample, experimental design, experimental website stimuli development, instruments, experimental procedure, and statistical analyses are discussed.

3.1 Sample

This study recruited participants from three sources: college students at a university in urban South East China, college students at a university in urban Middle China, and participants directed to the research website by these two groups of university participants. College students were tapped because they were appropriate for the products used as stimuli, easy to access, and more computer literate than the general population of China, which makes them potential consumers of web-based mass customization of apparel. U.S. college-aged samples have been used in mass customization studies for similar reasons (Fiore et al., 2001, 2004).

The participants from the two universities were informed of this research via their instructors. They were asked to participate in the study in their spare time. After completing the study, each participant received an e-mail asking for help to recruit more participants. Cash prizes were used to encourage participation. Ten winners were randomly drawn from all participants and each winner received a 100 RMB ($12.50) cash prize. The non-probability convenience sampling for this study was considered acceptable because the purpose of the study was theory testing rather than describing the characteristics of a general population (Calder, Philips, & Tybout, 1981).

3.2 Research design

This study employed a 2x2 between-subject experimental design. Using stimulus
websites that sell t-shirts, the experimental treatment websites consisted of combinations of two price levels (lower and higher) and two levels of customization (standard products and mass customized products), forming four cells. T-shirts were selected as an appropriate product category for mass customization of apparel because their design is easy to manipulate. Several commercial websites (e.g., Zazzle.com, Customink.com) offer mass customized t-shirts.

The present study used an existing commercial website (Customink.com) as a template for the experimental treatments to create a realistic website. The experimental website treatments mimicked the functions of the template website but concealed information (e.g., brand name, logo) that would reveal the identity of the original site. The website treatments were created using Flash 8.0 software. I developed these websites with the assistance of a computer science student who helped with programming.

In order to determine acceptable product pricing and design options for mass customized t-shirts (i.e., fabric color, sleeve type, neckline, graphic, and slogan) for Chinese consumers, I conducted a pretest using 20 college students (10 females and 10 males) from the university in urban South East China who were not participants in the main study. Results showed that they had used the Internet for more than four years and had at least purchased a product once via the Internet. Most of them indicated that they browse the Internet for product information.

In order to determine appropriate lower and higher price levels for the experimental treatments, the pretest participants assessed the lowest and highest reasonable price for a mass customized t-shirt on a website by selecting from several price categories. The majority of them selected 20 to 30 RMB ($2.50 to 3.75) as the lowest reasonable price and above 50 RMB ($6.25) as the highest reasonable price for a mass customized t-shirt. The lower and higher prices of the experimental website were set to be 25 and 95 RMB ($3.12 and 11.88) respectively. The higher price level was set high in order to maximize the effect of the manipulation. These prices are much lower than the prices of mass customized t-shirts in the U.S. market (e.g., $25-35 on Customink.com). However, one must consider the much lower
average income of Chinese consumers compared to the U.S. counterparts. China’s gross domestic product per capital was $1,900 in 2006, about one twenty-fifth of that in the U.S (The World Factbook, 2007).

3.2.1 Standard product treatments

The standard products and mass customized product treatments were created using a similar website layout. However, the standard product treatments offered twelve pre-determined t-shirt designs, which could not be modified by users (see Appendices B and C) whereas the mass customized product treatments allowed users to design a t-shirt by choosing from series of options for style, fabric, and print of a t-shirt (see Appendices D and E). The typical process for purchasing a custom print t-shirt, reflected by the standard product treatment, does include a small amount of customization in the sense that the consumer chooses a print design for a pre-constructed t-shirt. The twelve pre-determined designs of the standard product treatments were created using the design options of the mass customized product treatments.

3.2.2 Mass customized product treatments

Table 3.1 provides a list of the design options of the mass customized product treatments. The options for t-shirt style included two necklines and four types of sleeves. The options for fabric included twelve colors. For designing t-shirt prints, the mass customized product treatments allowed users to choose from 196 images, of which the size and position could be modified. In addition, users could create slogans and modify their color, font, size, and position.

As mentioned previously, the design options were determined based on the findings of the pretest. To determine necklines and sleeve types that consumers would accept, the pretest participants rated their preferences for 12 t-shirt styles created by combinations of four sleeve types (sleeveless, cap sleeve, short sleeve, and long sleeve) and three types of necklines
(crewneck, scoop-neck, and V-neck) using a five-point scale (1 = unfavorable, 2 = slightly unfavorable, 3 = neutral, 4 = slightly favorable, and 5 = favorable). As expected, the crewneck, short sleeve t-shirt was rated as the most favorable style (M = 4.4). Among all 12 styles, only the four crewneck t-shirts received average ratings close to or above 4.0 (i.e., slightly favorable and favorable) by the pretest participants. Therefore, I adopted only crewnecks in this study. Two variations of crewnecks (regular and wider) and the four sleeve types (sleeveless, cap sleeve, short sleeve, and long sleeve) were used as style options of the mass customized product treatments.

Table 3.1 Design options of the mass customized product treatments

<table>
<thead>
<tr>
<th>Style</th>
<th>Two necklines (regular and wider crewneck)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Four types of sleeves (sleeveless, cap sleeve, short sleeve, and long sleeve)</td>
</tr>
<tr>
<td>Fabric</td>
<td>Twelve colors</td>
</tr>
<tr>
<td>Print</td>
<td>A hundred and ninety-six images; size and position modifiable</td>
</tr>
<tr>
<td></td>
<td>Customer-created slogan; color, font, size, and position modifiable</td>
</tr>
</tbody>
</table>

To determine acceptable fabric colors for t-shirts, the participants rated their preferences for 40 fabric colors using the same five-point scales. The 12 colors that had mean ratings above 4.0 (i.e., slightly favorable or favorable) were selected for the mass customized product treatments.

To determine appropriate images for t-shirt designs, the pretest participants rated 60 images using a five-point scale (1 = unfavorable, 2 = slightly unfavorable, 3 = neutral, 4 = slightly favorable, and 5 = favorable). The 15 images that received mean ratings above 4.0 (i.e., slightly favorable or favorable) were used in the mass customized product treatments. Thirteen graphic images with similar themes were added to these 15 images for a total of 28 images. These images were categorized into five theme groups (Abstract, Cartoon, Ethnic, Realistic, and Computer Graphic) for ease of navigation. Finally, seven color variations were
created for each image, producing 196 image options.

### 3.3 Instrument

The present study examined the relationships among marketing attributes, perceived value (economic value, efficiency, PPQ, enjoyment, and escapism), behavioral intention, and cultural values (relational orientation and man-nature orientation). The two treatment variables (product price and customization level) that were manipulated in the experiment represent marketing attributes. The remainder of the variables were measured via a questionnaire administered online. The questionnaire included manipulation check items, demographics, past Internet use, and shopping experience items.

Four perceived value variables, economic value, efficiency, enjoyment, and escapism, were measured using multi-item seven-point Likert scales developed by Mathwick et al. (2001). The Chronbach alpha values of the original scales ranged from .78 to .88. The wording of the original items was adapted in accordance with the context of the present study. “Products on this website are a good economic value” with anchors of “strongly disagree” (1) and “strongly agree” (7) is an example of the three economic value items. Five seven-point items adopted from Dodd et al.’s (1991) study (Chronbach alpha = .88) were used to tap PPQ. An example of these items is “The quality of this product is likely to be…” with anchors of “very low” (1) and “very high” (7). Behavioral intention was measured using five seven-point Likert scales adopted from Kim’s (2004) study (Chronbach alpha = .81).

Relational orientation was measured using Singelis’ (1994) Self-Construal Scale that contained 15 items (Chronbach alpha = .73). “I have respect for the authority figures with whom I interact” with anchors “strongly disagree” (1) and “strongly agree” (7) is an example of these items. Man-nature orientation was measured using a five-item scale adopted from Yau’s (1994) study. The reliability of the scale was not reported in the original study. This scale provided a group of frequently used Chinese proverbs in literature. Respondents were
asked to indicate how much they agree with each of them, where “1” meant strongly disagree and “7” meant strongly agree.

The questionnaire included manipulation check items for product price and customization level. The manipulation check question for product price was “The price on this website is… (1 = low, 7 = high). The manipulation check question for customization level was “The extent to which this website allows me to customize my product is…” (1 = low, 7 = high). Respondents were also queried regarding previous Internet use and shopping experience. In order to eliminate responses influenced by existing impressions of the template website, participants were asked to record the name of the website, if it reminded them of any particular website. Those who recognized the template website would be dropped from the sample.

The questionnaire was administered in Chinese. The scale for man-nature orientation was originally developed in Chinese and thus directly used in the questionnaire. All the other measures were developed in English then translated into Chinese using a translation and back-translation procedure to ensure accuracy of translation. The English questions were first translated into Chinese by a bilingual scholar fluent in both English and Chinese. Then another bilingual scholar proofread the Chinese questions without reading the original English questions and revised the questions to improve the flow in Chinese. Later a third bilingual scholar back translated the revised Chinese questions into English. Finally the three experts worked together to compare the original English questions with the back-translated version and resolved inconsistencies in the translations. Final Chinese translations were based on agreement among the three experts.

### 3.4 Experimental procedure

Participation in this study was completely voluntary and the participants were fully informed of rights and costs before participating. The present study received approval from
the Institutional Review Board of Iowa State University for use of human subjects (see Appendix F). The homepage of the research website contained a brief introduction about the research. The second webpage explained the procedure, rights, and costs associated with participation. Participants confirmed that they were 18 years or older and understood the procedure, rights, and costs of participation by clicking on a check box before proceeding to the treatment. They were informed that they would enter into the experiment by pressing the “Next” button.

Then they were randomly assigned to one of the four treatments by a computer program and asked to browse the website and select pre-designed products or create mass customized products for three to five minutes. However, the actual time they spent on the website was not controlled. Web browsers and Internet connections speed used to explore the websites were not able to be controlled, which may affect participants’ impressions of the site, as will be discussed in the final chapter.

After selecting or designing a t-shirt, respondents completed the online questionnaire hyperlinked from the experimental treatment. They were asked to answer the questions based on their experience with the website. Within two days of completing the study, the participants would receive an e-mail thanking them for their participation and asking them to recruit acquaintances to participate in the study. The overall duration for the data collection was three months.

3.5 Analyses

The statistical analyses of the study were conducted in two stages. The first stage tested the hypothesized causal model (Figure 2.3) connecting marketing attributes (product price and customization level), perceived value, and behavioral intention (Hypotheses 1, 2 and 3). The second stage of the study tested the moderating effects of cultural values on the relationships between marketing attributes and perceived value and between perceived value
and behavioral intention (Hypotheses 4, 5, 6, and 7).

In the first stage, structural equation modeling (SEM) was used to examine the measurement structure of indicators of each research variable and test the hypothesized causal model for marketing attributes, perceived value, and behavioral intention. SEM allows testing hypotheses based on reliable measurement values after factoring out measurement errors. AMOS 6.0 software was used for the SEM tests.

The overall causal model (Figure 2.3) was broken down into two sub-models to reduce the number of estimated parameters for each SEM test based on Kline’s (1998) recommendation for the minimum number of cases per parameter (more than 10 cases per parameter). The first sub-model (Figure 3.1) focused on the causal relationships between marketing attributes and perceived value and the second sub-model (Figure 3.2) focused on the causal relationships between perceived value and behavioral intention. I used a Chi-square to degrees of freedom ratio along with other measures to assess the goodness of fit of the hypothesized model. According to Carmines and McIver (1981), a $\text{Chi-square/df}$ ratio that falls between 1 and 3 suggest an acceptable fit between the hypothesized model and the data. Other fit indices (CFI, NFI, IFI, and RMSEA) were considered in conjunction with $\text{Chi-square/df}$ ratio. $T$-values were used to assess the significance of hypothesized relationships between variables.

During the second stage, the moderating effects of Chinese cultural values were tested using a multi-group SEM approach suggested by Jöreskog and Sörbom (1993). The procedure of this approach will be discussed in Chapter 4.
Figure 3.1 Sub-model 1, causal relationships between marketing attributes and perceived values
Figure 3.2 Sub model 2, Causal relationships between perceived values and behavioral intention
CHAPTER 4. RESULTS

This Chapter reports the results of the study including demographic characteristics of the sample, descriptive statistics of the research variables, the manipulation check, and hypothesis tests.

4.1 Demographic characteristics

Of the 410 surveys received, 344 of them provided usable data. Surveys with more than 30% unanswered questions were regarded as invalid and removed from the data set. Some survey responses were identical to each other because these participants pressed the “Submit” button more than once. These re-submitted responses were removed as well. None of the respondents reported that the experimental site reminded them of the template commercial website. Therefore, no response was removed for this reason. Table 4.1 illustrates the demographic characteristics of the sample including gender, age, education, income, occupation as well as Internet use and shopping experiences (i.e., length of Internet usage, frequency of Internet shopping, and experience of purchasing mass customized products online).

Results showed that 60% of the participants were female and 40% were male. Their ages ranged from 18 to 45 years old. Fifty-nine percent of them were students and 41% were of other occupations. Their monthly income varied greatly, from less than 499 RMB ($62.5) to over 10,000 RMB ($1,250), with the 2,000 ($250) to 4,999 RMB ($625) category being the mode. Ninety-nine percent of the participants indicated that they completed a college education or were college students.²

² It is not possible to divide those who had and those who were completing college education because the Chinese usually report on-going education as their highest education level.

In terms of past experience, a majority (76%) of the participants had used the Internet for
four or more years, indicating a quite high level of computer literacy. However, most of the respondents shopped online only once or less than once a month, suggesting that Internet shopping was still not widely practiced in China. A surprising 27% of the participants indicated that they had purchased mass customized products online. Respondents may not have understood what mass customization entailed although a definition of mass customization was provided before they answer the question.

Table 4.1 Demographic characteristics of the sample

<table>
<thead>
<tr>
<th>Demographic characteristics</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (n = 340)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>205</td>
<td>60</td>
</tr>
<tr>
<td>Male</td>
<td>135</td>
<td>40</td>
</tr>
<tr>
<td>Age (n = 338)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-21</td>
<td>56</td>
<td>17</td>
</tr>
<tr>
<td>22-25</td>
<td>152</td>
<td>45</td>
</tr>
<tr>
<td>26-30</td>
<td>81</td>
<td>24</td>
</tr>
<tr>
<td>&gt; 31</td>
<td>49</td>
<td>13</td>
</tr>
<tr>
<td>Education (n = 337)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>College</td>
<td>212</td>
<td>63</td>
</tr>
<tr>
<td>Graduate</td>
<td>121</td>
<td>34</td>
</tr>
<tr>
<td>Monthly income (n = 338)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 499</td>
<td>67</td>
<td>20</td>
</tr>
<tr>
<td>500-999</td>
<td>65</td>
<td>19</td>
</tr>
<tr>
<td>1,000-1,999</td>
<td>52</td>
<td>15</td>
</tr>
<tr>
<td>2,000-4,999</td>
<td>96</td>
<td>28</td>
</tr>
<tr>
<td>5,000-9,999</td>
<td>42</td>
<td>13</td>
</tr>
<tr>
<td>&gt; 10,000</td>
<td>26</td>
<td>8</td>
</tr>
<tr>
<td>Occupation (n = 320)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td>188</td>
<td>59</td>
</tr>
<tr>
<td>Other</td>
<td>132</td>
<td>41</td>
</tr>
</tbody>
</table>
Table 4.1 (Continued)

<table>
<thead>
<tr>
<th>Internet use and shopping experience</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of Internet usage (n = 338)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than two years</td>
<td>19</td>
<td>5</td>
</tr>
<tr>
<td>Two or three years</td>
<td>61</td>
<td>18</td>
</tr>
<tr>
<td>Four or more years</td>
<td>258</td>
<td>76</td>
</tr>
<tr>
<td>Monthly online shopping frequency (n = 340)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than once</td>
<td>234</td>
<td>69</td>
</tr>
<tr>
<td>Once</td>
<td>66</td>
<td>19</td>
</tr>
<tr>
<td>Two or three times</td>
<td>92</td>
<td>27</td>
</tr>
<tr>
<td>Four and over four times</td>
<td>18</td>
<td>5</td>
</tr>
<tr>
<td>Experience of purchasing mass customized products online (n = 334)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>88</td>
<td>27</td>
</tr>
<tr>
<td>No</td>
<td>245</td>
<td>73</td>
</tr>
</tbody>
</table>

4.2 Analyses of the causal model

4.2.1 Manipulation check

To determine the effectiveness of the experimental manipulations (product price and product customization), manipulation check tests were conducted using the first 60 responses of the main study. ANOVA was used to determine whether there were significant differences in the responses for these two stimulus manipulations. Results showed statistically significant differences in manipulations of product price and customization levels ($F_{(1,58)} = 7.30, p \leq 0.01; F_{(1,58)} = 8.60, p \leq 0.01$, respectively). These results indicated the successful treatment manipulations.

4.2.2 Factor analysis for model constructs

Table 4.2 provides the mean value and the standard deviation of each measurement item
for the constructs measured by multi-item scales in the causal model. These constructs include economic value, efficiency, PPQ, escapism, enjoyment, and behavioral intention. Table 4.2 also compares the mean value and the standard deviation of the measurement items between participants assigned to lower and higher price treatments and between participants assigned to the standard product treatments and mass customized product treatments. The first measurement item for efficiency and the second measurement item for economic value were reverse coded. The scores of these two items were recoded with a score of 1 coded as 7 and a score of 7 coded as 1.

A principle component factor analysis with Varimax rotation was employed to ensure construct validity. An Eigenvalue greater than one was used for determining the number of factors to be extracted. Factor loading above .55 (Nunnally, 1978) and not higher than .30 on other factors (Kline, 1998) was used to determine inclusion of items in the factors.

Table 4.3 shows that six factors were extracted and they were labeled economic value, efficiency, PPQ, enjoyment, escapism, and behavioral intention respectively. The first item of efficiency loaded similarly on both efficiency and behavioral intention, showing evidence of cross-loading of this item. Therefore, it was removed from further causal model testing. Chronbach alpha values (after removing the cross-loaded item) for the factors were at or above .70, which provides evidence of internal consistency (Nunnally, 1978) (see Table 4.3).

Table 4.4 provides the correlation coefficients among the variables of the overall causal model. The treatment variable, product price, was significantly correlated with economic value and efficiency of apparel mass customization. The treatment variable, customization level, was significantly correlated with PPQ, enjoyment, escapism, and behavioral intention. Further perceived value dimensions (economic value, efficiency, PPQ, enjoyment, and escapism) were significantly correlated with each other and with behavioral intention.
Table 4.2 Items of the measurement scales for model constructs

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Overall n = 340</th>
<th>Lower price n = 167</th>
<th>Higher price n = 171</th>
<th>Lower cust. n = 171</th>
<th>Higher cust. n = 168</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic value</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>■ Products on this website are a good economic value.</td>
<td>4.23 1.64</td>
<td>4.75 1.53</td>
<td>3.50 1.50</td>
<td>4.22 1.51</td>
<td>4.22 1.76</td>
</tr>
<tr>
<td>■ The price on this website is too high for a product of its kind. a</td>
<td>4.10 1.68</td>
<td>4.86 1.44</td>
<td>3.33 1.54</td>
<td>4.07 1.68</td>
<td>4.13 1.68</td>
</tr>
<tr>
<td>■ Overall, I am happy with this website's prices.</td>
<td>4.56 1.53</td>
<td>5.10 1.32</td>
<td>3.84 1.49</td>
<td>4.63 1.50</td>
<td>4.51 1.55</td>
</tr>
<tr>
<td>Efficiency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>■ If I were to purchase a t-shirt from this website, it would be hard to manage my time. a</td>
<td>3.94 1.52</td>
<td>4.08 1.45</td>
<td>3.77 1.61</td>
<td>4.22 1.39</td>
<td>3.70 1.62</td>
</tr>
<tr>
<td>■ If I were to purchase a t-shirt, shopping from this website would make my task easier.</td>
<td>4.55 1.53</td>
<td>4.73 1.50</td>
<td>4.28 1.54</td>
<td>4.38 1.63</td>
<td>4.66 1.43</td>
</tr>
<tr>
<td>■ If I would like to purchase a t-shirt, shopping from this website would save my time.</td>
<td>4.27 1.54</td>
<td>4.31 1.46</td>
<td>4.22 1.64</td>
<td>4.41 1.62</td>
<td>4.15 1.47</td>
</tr>
<tr>
<td>Enjoyment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>■ I would enjoy shopping from this website for its own sake, not just for the items I may purchase.</td>
<td>4.93 1.55</td>
<td>4.79 1.56</td>
<td>5.10 1.52</td>
<td>4.82 1.58</td>
<td>5.03 1.52</td>
</tr>
<tr>
<td>■ I would shop from this website for the pure enjoyment of it.</td>
<td>4.28 1.62</td>
<td>4.42 1.58</td>
<td>4.11 1.66</td>
<td>3.97 1.57</td>
<td>4.55 1.62</td>
</tr>
<tr>
<td>Causal model constructs</td>
<td>Overall</td>
<td>Lower price</td>
<td>Higher price</td>
<td>Lower cust.</td>
<td>Higher cust.</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>---------</td>
<td>-------------</td>
<td>--------------</td>
<td>-------------</td>
<td>--------------</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td><strong>Product quality/performance</strong></td>
<td>4.35</td>
<td>1.29</td>
<td>4.31</td>
<td>1.23</td>
<td>4.41</td>
</tr>
<tr>
<td>■ By browsing the website, I think the</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>likelihood that fabric of the product</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>would be comfortable is...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>■ By browsing the website, I think the</td>
<td>4.32</td>
<td>1.16</td>
<td>4.30</td>
<td>1.14</td>
<td>4.35</td>
</tr>
<tr>
<td>quality of the products on this website</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>is probably...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>■ By browsing this website, I think the</td>
<td>4.12</td>
<td>1.14</td>
<td>4.00</td>
<td>1.08</td>
<td>4.27</td>
</tr>
<tr>
<td>workmanship of the products is likely</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to be...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>■ By browsing the website, I think the</td>
<td>4.25</td>
<td>1.14</td>
<td>4.21</td>
<td>1.09</td>
<td>4.30</td>
</tr>
<tr>
<td>likelihood that the products on this</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>website would be reliable is...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>■ By browsing the website, I think the</td>
<td>4.19</td>
<td>1.26</td>
<td>4.12</td>
<td>1.18</td>
<td>4.27</td>
</tr>
<tr>
<td>durability of the products on this</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>website is likely to be...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Escapism</strong></td>
<td>3.88</td>
<td>1.67</td>
<td>4.01</td>
<td>1.72</td>
<td>3.71</td>
</tr>
<tr>
<td>■ Shopping from this website would give</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>me a chance to get away from it all.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>■ Shopping from the website made me feel</td>
<td>3.77</td>
<td>1.58</td>
<td>3.83</td>
<td>1.52</td>
<td>3.70</td>
</tr>
<tr>
<td>like I am in another world.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>■ I would get so involved when I shop</td>
<td>3.49</td>
<td>1.62</td>
<td>3.59</td>
<td>1.64</td>
<td>3.38</td>
</tr>
<tr>
<td>from this website that I would forget</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>everything.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Causal model constructs</td>
<td>Overall n = 340</td>
<td>Lower price n = 165</td>
<td>Higher price n = 168</td>
<td>Lower cust. n = 168</td>
<td>Higher cust. n = 165</td>
</tr>
<tr>
<td>-------------------------</td>
<td>---------------</td>
<td>---------------------</td>
<td>---------------------</td>
<td>---------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td><strong>Behavioral intention</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>■ If this website is launched, I would recommend this site to my friends or family.</td>
<td>4.75</td>
<td>1.69</td>
<td>4.74</td>
<td>1.57</td>
<td>4.76</td>
</tr>
<tr>
<td>■ If this website starts to operate, I would be willing to visit this site again.</td>
<td>5.07</td>
<td>1.52</td>
<td>5.01</td>
<td>1.43</td>
<td>5.14</td>
</tr>
<tr>
<td>■ When talking about apparel websites with other people, I am willing to say positive things about this site.</td>
<td>4.98</td>
<td>1.33</td>
<td>4.98</td>
<td>1.29</td>
<td>4.97</td>
</tr>
<tr>
<td>■ I would be willing to purchase a product available on this site if this website starts to operate.</td>
<td>4.44</td>
<td>1.50</td>
<td>4.50</td>
<td>1.49</td>
<td>4.36</td>
</tr>
<tr>
<td>■ If this website is launched, I would come to this website to search for product information.</td>
<td>5.00</td>
<td>1.53</td>
<td>5.02</td>
<td>1.45</td>
<td>4.97</td>
</tr>
</tbody>
</table>

Note: * Scores were reverse coded because of the reversed direction in wording.
Table 4.3 Factor analysis results for multi-item variables of the proposed causal model

<table>
<thead>
<tr>
<th>Research variables</th>
<th>Items</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic value</td>
<td>■ Products on this website are a good economic value.</td>
<td>0.84</td>
</tr>
<tr>
<td></td>
<td>■ The price on this website is too high for a product of its kind.</td>
<td>0.83</td>
</tr>
<tr>
<td></td>
<td>■ Overall, I am happy with this website’s prices.</td>
<td>0.82</td>
</tr>
<tr>
<td>Chronbach alpha</td>
<td>0.82</td>
<td></td>
</tr>
<tr>
<td>Percent of variance explained</td>
<td>10.0</td>
<td></td>
</tr>
<tr>
<td>Efficiency</td>
<td>■ If I were to purchase a t-shirt from this website, it would be hard to manage my time. a</td>
<td>0.31</td>
</tr>
<tr>
<td></td>
<td>■ If I am to purchase a t-shirt, shopping from this website would make my task easier.</td>
<td>0.69</td>
</tr>
<tr>
<td></td>
<td>■ If I would like to purchase a t-shirt, shopping from this website would save my time.</td>
<td>0.73</td>
</tr>
<tr>
<td>Chronbach alpha</td>
<td>0.72</td>
<td></td>
</tr>
<tr>
<td>Percent of variance explained</td>
<td>7.1</td>
<td></td>
</tr>
<tr>
<td>Product quality/performance</td>
<td>■ By browsing the website, I think the likelihood that the fabric of the product would be comfortable is…</td>
<td>0.70</td>
</tr>
<tr>
<td></td>
<td>■ By browsing the website, I think the quality of the products on this website is probably…</td>
<td>0.78</td>
</tr>
<tr>
<td></td>
<td>■ By browsing this website, I think the workmanship of the products is likely to be…</td>
<td>0.74</td>
</tr>
<tr>
<td></td>
<td>■ By browsing the website, I think the likelihood that the products on this website would be reliable is…</td>
<td>0.69</td>
</tr>
<tr>
<td></td>
<td>■ By browsing the website, I think the durability of the products on this website is likely to be…</td>
<td>0.78</td>
</tr>
<tr>
<td>Chronbach alpha</td>
<td>0.85</td>
<td></td>
</tr>
<tr>
<td>Percent of variance explained</td>
<td>18.4</td>
<td></td>
</tr>
<tr>
<td>Enjoyment</td>
<td>■ I would enjoy shopping from this website for its own sake, not just for the items I may purchase.</td>
<td>0.59</td>
</tr>
<tr>
<td></td>
<td>■ I would shop from this website for the pure enjoyment of it.</td>
<td>0.71</td>
</tr>
<tr>
<td>Chronbach alpha</td>
<td>0.70</td>
<td></td>
</tr>
<tr>
<td>Percent of variance explained</td>
<td>8.1</td>
<td></td>
</tr>
<tr>
<td>Escapism</td>
<td>■ Shopping from this website would give me a chance to get away from it all.</td>
<td>0.78</td>
</tr>
<tr>
<td></td>
<td>■ Shopping from the website made me feel like I am in another world.</td>
<td>0.67</td>
</tr>
<tr>
<td></td>
<td>■ I would get so involved when I shop from this website that I would forget everything.</td>
<td>0.84</td>
</tr>
<tr>
<td>Chronbach alpha</td>
<td>0.80</td>
<td></td>
</tr>
<tr>
<td>Percent of variance explained</td>
<td>11.7</td>
<td></td>
</tr>
</tbody>
</table>
Table 4.3 (Continued)

<table>
<thead>
<tr>
<th>Research variables</th>
<th>Items</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioral intention</td>
<td>If this website is launched, I would recommend this site to my friends or family.</td>
<td>0.69</td>
</tr>
<tr>
<td></td>
<td>If this website starts to operate, I would be willing to visit this site again.</td>
<td>0.76</td>
</tr>
<tr>
<td></td>
<td>When talking about apparel websites with other people, I am willing to say positive things about this site.</td>
<td>0.72</td>
</tr>
<tr>
<td></td>
<td>I would be willing to purchase a product available on this site if this website starts operate.</td>
<td>0.55</td>
</tr>
<tr>
<td></td>
<td>If this website is launched, I would come to this website to search for product information.</td>
<td>0.75</td>
</tr>
</tbody>
</table>

Chronbach alpha = 0.89
Percent of variance explained = 17.9
Total percent of variance explained = 73.2

Note: * Item removed from the original scale.

Table 4.4 Correlation coefficients of constructs

<table>
<thead>
<tr>
<th>Constructs</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Product price</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Customization level</td>
<td>-</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Economic value</td>
<td>-.51**</td>
<td>-</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Efficiency</td>
<td>-.13*</td>
<td>-</td>
<td>.43**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. PPQ</td>
<td>-</td>
<td>.11*</td>
<td>.29**</td>
<td>.57**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Enjoyment</td>
<td>-</td>
<td>.14**</td>
<td>.32**</td>
<td>.56**</td>
<td>.51**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Escapism</td>
<td>-</td>
<td>.13*</td>
<td>.38**</td>
<td>.61**</td>
<td>.73**</td>
<td>.62**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>8. Behavioral intention</td>
<td>-</td>
<td>.13*</td>
<td>.42**</td>
<td>.69**</td>
<td>.70**</td>
<td>.65**</td>
<td>.70**</td>
<td>1</td>
</tr>
<tr>
<td>Mean value</td>
<td>-</td>
<td>-</td>
<td>12.51</td>
<td>9.00</td>
<td>21.42</td>
<td>9.08</td>
<td>11.39</td>
<td>24.51</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>-</td>
<td>-</td>
<td>2.54</td>
<td>2.68</td>
<td>4.88</td>
<td>2.76</td>
<td>4.21</td>
<td>2.76</td>
</tr>
</tbody>
</table>

Note: - non-significant; * p ≤ .05; ** p ≤ .01

4.2.3 Testing for sub-model 1

Sub-model 1 concentrated on the causal relationships between marketing attributes and
perceived value (see Figure 4.1). The model consisted of two exogenous constructs (product price and customization level) and five endogenous constructs (economic value, PPQ, efficiency, enjoyment, and escapism). Following Bagozzi and Yi’s (1989) approach for using structural equation models for experimental research, the treatment variables (product price and customization level) were specified as latent variables, each indicated by a dummy variable (see Figure 4.1). The dummy variable for product price was created by assigning zero to the lower price group and one to the higher price group. The dummy variable for customization level was created by assigning zero to the standard products group and one to the mass customized products group. The path coefficients between the latent variables (product price and customization level) and the dummy variables were fixed to one and the error terms for the dummy variables were fixed to zero.

A structural equation model was estimated using a maximum-likelihood estimation procedure. Figure 4.1 provides the standardized path coefficients ($\gamma$) and $t$-values for each statistically significant structural path as well as the amount of variance explained by predictor variables for each endogenous variable ($R^2$). The Chi-square of this model was 196.6 and the degrees of freedom was 73. The Chi-square/df ratio was 2.7, which falls within the 1 to 3 range suggested by Carmines & McIver (1981). The CFI was .95; NFI was .92; IFI was .94. These indices were greater than .90 indicating an acceptable model fit (Bagozzi & Yi, 1988). RMSEA was .07, which falls into the acceptable range of .05 to .08 suggested by Hair et al. (1998).

Sub-model 1 tested hypotheses 1 and 2. The results statistically supported hypotheses 1a, 1b, 2c, 2d, and 2e but not hypotheses 1c, 2a, 2b. Hypothesis 1a posited that product price negatively affects economic value. The standardized path coefficient between product price and economic value was -.48 and statistically significant ($t = -8.09, p \leq .001$), thus supporting this hypothesis. Hypothesis 1b, predicting a negative effect of product price on efficiency, received statistical support as well ($\gamma = -.17, t = -3.33, p \leq .001$). Hypothesis 1c, predicting a positive effect of product price on PPQ, was not supported.
Figure 4.1 Testing for sub-model 1

Chi$^2 = 195.6, df = 73$
Chi$^2/df = 2.7$
CFI = .95
NFI = .92
IFI = .94
RMSEA = .07

Note: Standardized path estimates are reported with $t$-values in parentheses.
** $p \leq 0.01$; *** $p \leq 0.001$
Hypothesis 2a predicting a positive effect of customization level on economic value and hypothesis 2b predicting a negative effect of customization level on efficiency did not receive statistical support. Hypothesis 2c, predicting a positive effect of customization level on PPQ, was statistically supported \((\gamma = .16, t = 2.79, p \leq .01)\). Hypotheses 2d and 2e, predicting positive effects of customization level on enjoyment and escapism, were both statistically supported \((\gamma = .22, t = 3.28, p \leq .001; \gamma = .18, t = 2.92, p \leq .01, \text{respectively})\).

The results also showed that the treatment variables explained 24% of the variance for economic value. However, the two treatment variables explained a small amount of variance for the rest of the endogenous variables.

### 4.2.4 Testing for sub-model 2

Sub-model 2 concentrated on testing the causal relationships between perceived value (ROI, PPQ, and playfulness) and behavioral intention (see Figure 4.2). The model consisted of three exogenous constructs (ROI, PPQ, and playfulness) and one endogenous construct (behavioral intention). As discussed in the literature review, ROI and playfulness were theorized as the first-order dimensions of perceived value. The second-order latent variables (economic value, efficiency, enjoyment, and escapism) act as the indicators of the first-order variables and were directly measured by observable measurement items. A structural equation modeling analysis was conducted using a maximum-likelihood estimation procedure. Figure 4.2 provides the standardized path coefficients \((\gamma)\) and \(t\)-values for each statistically significant coefficient as well as the amount of variance explained by predictor variables for each endogenous variable \((R^2)\). The Chi-square for this model was 349.0 with 125 degrees of freedom. The Chi-square/df ratio was 2.8, which again falls within a range of acceptable values. The CFI was .94; NFI was .90; IFI was .94. These fit indices were greater than or equal to .90 and indicate acceptable model fit (Bagozzi & Yi, 1988). RMSEA was .05, which falls into the acceptable range of .05 to .08 suggested by Hair et al. (1998).

Sub-model 2 tested hypotheses 3a, 3b, and 3c, which were all statistically supported by the results. Hypothesis 3a posited that ROI positively affects behavioral intention. The effect of ROI on behavioral intention was .41 with a \(t\)-value of 2.91, which was significant at .01
level. Hypothesis 3b, predicting a positive effect of PPQ on behavioral intention, was statistically supported ($\gamma = .23, t = 3.37, p \leq .001$). Hypothesis 3c, predicting a positive effect of playfulness on behavioral intention, was statistically supported as well ($\gamma = .37, t = 2.51, p \leq .05$). The amount of variance explained by the perceived value dimensions for behavioral intention was .87, indicating that these perceived value dimensions predicted behavioral intention well. Testing of sub-model 2 also supported the two-order structure of perceived value proposed by Mathwick et al. (2001). Factor loadings of the second-order perceived value dimensions on the first-order dimensions ranged from .66 to 1.00 and were all significant.
Figure 4.2 Testing for sub-model 2

Note: Standardized path estimates are reported with t-values in parentheses. * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$; * fixed to 1 in model specification
4.3 Effects of Chinese cultural values

4.3.1 Factor analysis for cultural value constructs

This study adopted Singelis’ (1994) 15-item scale for measurement of relational orientation. A principle component factor analysis with Varimax rotation was conducted to reduce the number of items in this scale. The number of factors to be extracted was set to be one. Seven items (Table 4.5) among the 15 original items loaded higher than .55 on the single factor. These seven items were retained in the refined scale for further analyses.

To ensure the discriminate validity and uni-dimensionality of the cultural value constructs, another principle component factor analysis with Varimax rotation was conducted including the measurement items of both the man-nature orientation scale and the refined relational orientation items.

Results showed that the factor analysis extracted two factors (see Table 4.5). These two factors were named relational orientation and man-nature orientation respectively based on the items loaded on the factors. The two factors accounted for 55.4 percent of overall variance. Specifically, relational orientation accounted for 32.2 percent of overall variance and man-nature orientation accounted for 23.2 percent of overall variance. All measurement items loaded higher than .55 on the factor that represented the original cultural value and lower than .30 on the other factor, except the first and third items of relational orientation and the third item of man-nature orientation. The first item of relational orientation and the third item of man-nature orientation loaded similarly on both factors, showing evidence of cross-loading. Therefore, these items were dropped. The third item of relational orientation loaded .52 on relational orientation, which is marginal. But, this item taps a person’s interdependence with family, which is an important aspect of relational orientation. Therefore, this item was retained. Reliability tests showed that both scales had Chronbach alpha coefficients greater than 0.70 (after removing the cross-loaded items).
Table 4.5 Measurement items for cultural value constructs

<table>
<thead>
<tr>
<th>Cultural value constructs</th>
<th>Items</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Relational orientation</strong></td>
<td>■ I respect people who are modest about themselves. ^a</td>
<td>.58</td>
</tr>
<tr>
<td></td>
<td>■ I will sacrifice my self-interest for the benefit of the group I am in.</td>
<td>.62</td>
</tr>
<tr>
<td></td>
<td>■ I would take into consideration my parents’ advice when making education/career plans.</td>
<td>.52</td>
</tr>
<tr>
<td></td>
<td>■ I feel good when I cooperate with others.</td>
<td>.68</td>
</tr>
<tr>
<td></td>
<td>■ If my brother or sister fails, I feel responsible.</td>
<td>.66</td>
</tr>
<tr>
<td></td>
<td>■ It is important to me to respect decisions made by the group.</td>
<td>.73</td>
</tr>
<tr>
<td></td>
<td>■ It is important for me to maintain harmony within my group.</td>
<td>.67</td>
</tr>
</tbody>
</table>

Percent of variance explained = 32.2
Chronbach alpha = .70

<table>
<thead>
<tr>
<th><strong>Man-nature orientation</strong></th>
<th>Items</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>■ Life and death are fated; wealth and honors hinge on the will of providence.</td>
<td>.81</td>
</tr>
<tr>
<td></td>
<td>■ Fate is predestined.</td>
<td>.85</td>
</tr>
<tr>
<td></td>
<td>■ Do all that is humanly possible and leave the rest to the will of providence. ^a</td>
<td>.58</td>
</tr>
<tr>
<td></td>
<td>■ He who submits Heaven shall live; he who rebels against Heaven shall perish.</td>
<td>.65</td>
</tr>
</tbody>
</table>

Percent of variance explained = 23.2
Chronbach alpha = .71

Total percent of variance explained = 55.4

Note: ^a Item removed from the measurement scale because of cross-loadings.

**4.3.2 Moderating effects of relational orientation**

A multi-group structural equation modeling approach proposed by Jöreskog and Sörbom (1993) was conducted to test moderating effects of Chinese cultural values on the relationships between marketing attributes and perceived value and the relationships between perceived value and behavioral intention. First, a research variable was created for each cultural value using the factor scores of the measurement items. The respondents were then divided into two groups by the median value of the research variable. Respondents who scored lower than the median value were assigned to the lower value group (i.e., lower
relational orientation), whereas those scored higher than the median value were assigned to
the higher value group (i.e., higher relational orientation). The moderating effect of a cultural
value construct was tested in a two-step procedure. First, a multi-group structural equation
model was estimated incorporating both higher and lower value groups and restricting all
paths to be equal between the two groups. This resulted in the same path models obtained in
the causal model testing stage. Second, this model was estimated again, this time relaxing the
restriction of equal path estimates for one particular path. Because the second model has one
degree of freedom less, a significant model improvement is reached when the drop in
Chi-square between the two models for one degree of freedom is higher than 3.84 ($p \leq 0.05$).
The same procedure was then repeated for other causal relationships.

Before the structural equation models were estimated, the two cultural value variables
were checked for distribution to ensure that the median split method resulted in two
comparable and sufficiently distanced groups. The frequency histograms for both variables
were close to bell shapes and quite symmetrical along the median values, meaning that the
lower and higher cultural value groups were comparable (see Figure 4.3). Further, ANOVA
tests showed that the lower and higher cultural value groups were significantly distinct from
each other for both cultural value variables ($F_{(1, 329)} = 518.47, p \leq 0.01$ for relational
orientation; $F_{(1, 332)} = 668.64, p \leq 0.01$ for man-nature orientation).

Hypotheses 4 and 5 predicted the moderating effects of relational orientations on the
relationships between marketing attributes and perceived value and the relationships between
perceived value and behavioral intention. Hypotheses 4a and 4b were not tested because their
Corresponding paths were not statistically significant in the previous causal model
(sub-model 1). Results supported hypotheses 4c and 5c, partially supported hypothesis 4d,
but did not support hypotheses 4e, 5a, and 5b. Among the non-supported hypotheses, the
moderating effects of hypotheses 5a and 5b were significant but in the reverse directions to
the original hypotheses. Table 4.6 provides the standardized path coefficients for the lower
and higher relational orientation groups after relaxing the restriction of equal paths between
the two groups.
Figure 4.3 Distribution of Chinese cultural value variables

Relational orientation

N = 331
Mean = 0.00
Std. Dev. = 1.00
Minimum = -4.23
Maximum = 2.05

Median = .06

Man-nature orientation

N = 334
Mean = 0.00
Std. Dev. = 1.00
Minimum = -1.83
Maximum = 2.33

Median = .01
Hypothesis 4c posited that the effect of customization level on PPQ would be stronger for higher relational orientation consumers than lower relational orientation consumers. The path coefficient between customization level and PPQ was significant \((p \leq .001)\) for the higher relational orientation group and non-significant for the lower relational orientation group. Additionally, the drop in \(Chi^2\)-square after relaxing the restriction of equal path coefficients across the two groups was 4.67, exceeding the minimum value of 3.84. Therefore, this hypothesis was supported.

Hypothesis 4d posited that the positive effect of customization level on enjoyment would be weaker for consumers who hold to relational orientation strongly than those who hold to this value weakly. The path coefficient between customization level and enjoyment was non-significant for the higher relational orientation group and significant \((p \leq .001)\) for the lower relational orientation group. However, the drop in \(Chi^2\)-square value after relaxing the restriction of equal path coefficients across the two groups did not exceed 3.84. Therefore, this hypothesis received partial support. Hypothesis 4e positing that relational orientation moderates the relationship between customization level and escapism was not supported because the path coefficients of the higher and lower relational orientation groups were at the same significance level. The drop in \(Chi^2\)-square did not exceed the minimum value of 3.84.

Table 4.6 Testing for moderating effects of relational orientation

<table>
<thead>
<tr>
<th>Path</th>
<th>Std path coefficients</th>
<th>Drop in (Chi^2)</th>
<th>(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Relational orientation</td>
<td>Lower</td>
<td>Higher</td>
</tr>
<tr>
<td>H4a Price (\rightarrow) PPQ</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>H4b Cust level (\rightarrow) Economic value</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>H4c Cust level (\rightarrow) PPQ</td>
<td>.08</td>
<td>.24***</td>
<td>4.67</td>
</tr>
<tr>
<td>H4d Cust level (\rightarrow) Enjoyment</td>
<td>.266***</td>
<td>.158</td>
<td>1.30</td>
</tr>
<tr>
<td>H4e Cust level (\rightarrow) Escapism</td>
<td>.163</td>
<td>.186</td>
<td>.06</td>
</tr>
<tr>
<td>H5a ROI (\rightarrow) Behavioral intention</td>
<td>.54***</td>
<td>.33*</td>
<td>10.44</td>
</tr>
<tr>
<td>H5b PPQ (\rightarrow) Behavioral intention</td>
<td>.32***</td>
<td>.11</td>
<td>9.97</td>
</tr>
<tr>
<td>H5c Playfulness (\rightarrow) Behavioral intention</td>
<td>.45***</td>
<td>.27</td>
<td>12.27</td>
</tr>
</tbody>
</table>

Note: \*\(p \leq .05\); \***\(p \leq .001\)
Hypothesis 5a posited that the effect of ROI on behavioral intention would be stronger for higher relational orientation consumers than lower relational orientation consumers. The results supported the opposite effect. The path coefficient was non-significant for the higher relational orientation group and significant for the lower relational orientation group. The Chi-square value dropped by 10.44 ($p \leq .001$), indicating a significant difference in the effects between the two groups. Similarly, results supported the reverse direction for hypothesis 5b, which posited that the effect of PPQ on behavioral intention would be stronger for higher relational orientation consumers than lower relational orientation consumers. Results showed that the path coefficient was less significant for the higher relational orientation group than the lower relational orientation group. The Chi-square value dropped by 9.97 ($p \leq .01$), indicating a significant difference in the effects between the two groups.

Hypothesis 5c posited that the positive effect of playfulness on behavioral intention would be weaker for higher relational orientation consumers than lower relational orientation consumers. The path coefficient between playfulness and behavioral intention was non-significant for the higher relational orientation group and significant ($p \leq .001$) for the lower relational orientation group. Additionally, the drop in Chi-square after relaxing the restriction of equal path coefficients across the two groups was 12.27, significant at the .001 level. Therefore, this hypothesis was supported.

4.3.3 Moderating effects of man-nature orientation

Hypotheses 6 and 7 posited moderating effects of man-nature orientation on the causal relationships between marketing attributes and perceived value and between perceived value and behavioral intention. Hypotheses 6c was not tested because the corresponding path was not statistically significant in the causal model (sub-model 2). For the hypotheses that were tested, results statistically supported hypothesis 6b, partially supported hypotheses 6e and 7b, but did not support hypotheses 6a, 6d, 7a, and 7c. Table 4.7 reports the path coefficients for the lower and higher man-nature orientation groups after relaxing the restriction of equal paths between the two groups.

Hypothesis 6a posited that the effect of product price on economic value would be
weaker for higher man-nature orientation consumers than lower man-nature orientation consumers. Table 4.7 shows that the path coefficients for the lower and higher man-nature orientation groups were both significant at 0.001 level. The drop in Chi-square value did not exceed the minimum of 3.84. Therefore, this hypothesis was not supported.

Hypothesis 6b posited that the effect of product price on efficiency would be weaker for higher man-nature orientation consumers than lower man-nature orientation consumers. Table 4.7 showed that the path coefficient for the higher man-nature orientation group was non-significant whereas the path coefficient for the lower man-nature orientation group was significant. Additionally, the Chi-square value dropped by 5.89 ($p \leq .05$) after relaxing the restriction of equal paths across the lower and higher man-nature orientation groups. Therefore, this hypothesis was supported.

Table 4.7 Testing for moderating effects of man-nature orientation

<table>
<thead>
<tr>
<th>Path</th>
<th>Std path coefficients</th>
<th>Drop in Chi$^2$</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Man-nature orientation</td>
<td>Lower</td>
<td>Higher</td>
</tr>
<tr>
<td>H6a</td>
<td>Price → Economic value</td>
<td>-.429***</td>
<td>-.526***</td>
</tr>
<tr>
<td>H6b</td>
<td>Price → Efficiency</td>
<td>-.26***</td>
<td>-.05</td>
</tr>
<tr>
<td>H6c</td>
<td>Cust level → Economic value</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>H6d</td>
<td>Cust level → Enjoyment</td>
<td>.22**</td>
<td>.25**</td>
</tr>
<tr>
<td>H6e</td>
<td>Cust level → Escapism</td>
<td>.20**</td>
<td>.15</td>
</tr>
<tr>
<td>H7a</td>
<td>ROI → Behavioral intention</td>
<td>.45***</td>
<td>.44***</td>
</tr>
<tr>
<td>H7b</td>
<td>PPQ → Behavioral intention</td>
<td>.182*</td>
<td>.217**</td>
</tr>
<tr>
<td>H7c</td>
<td>Playfulness → Behavioral intention</td>
<td>.346**</td>
<td>.363**</td>
</tr>
</tbody>
</table>

Note: * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Hypothesis 6d posited that the effect of customization level on enjoyment would be weaker for higher man-nature orientation consumers than lower man-nature orientation consumers. Table 4.7 shows that the path coefficients of the higher and lower man-nature orientation groups were similar. The change in Chi-square value did not exceed the minimum value of 3.84. Therefore, this hypothesis was not supported. Hypothesis 6e posited that the effect of customization level on escapism would be weaker for higher man-nature orientation
consumers than lower man-nature orientation consumers. This hypothesis received partial support because the higher man-nature orientation group had a non-significant path coefficient compared to the significant path coefficient for the lower man-nature orientation group, but the change in Chi-square did not exceed 3.84.

Hypothesis 7a posited that the effect of ROI on behavioral intention would be weaker for higher man-nature orientation consumers than lower man-nature orientation consumers. There was neither a difference in the significance level of the path coefficient between the higher and lower man-nature orientation groups nor a significant drop in Chi-square value. Therefore, this hypothesis was not supported. Similarly, hypothesis 7c positing a negative moderating effect of man-nature orientation on the relationship between playfulness and behavioral intention was not supported.

Hypothesis 7b posited that the effect of PPQ would be stronger for higher man-nature orientation consumers than lower man-nature orientation consumers. The path coefficient of the higher man-nature orientation group was more significant than the lower man-nature orientation group. However, the drop in Chi-square did not exceed the minimum of 3.84. Therefore this hypothesis received only partial support.
CHAPTER 5. DISCUSSION AND CONCLUSIONS

This chapter summarizes the research findings and provides interpretations of the findings. Conclusions, implications, limitations, and recommendations for future research are presented.

5.1 Summary and discussion

This study investigated the perceived value derived from mass customization by Chinese consumers and the influence of Chinese cultural values on perceived value. The study was conducted in two stages. In the first stage, I investigated the relationships between a) two marketing attributes (product price and customization level) and perceived value and b) between perceived value and behavioral intention towards an apparel mass customization website. Table 5.1 provides a summary of results for hypotheses tested in this stage. In the second stage, I investigated the moderating effects of Chinese cultural values on the causal relationships proposed in the first stage. Table 5.2 provides a summary of results for the hypotheses tested in the second stage.

Table 5.1 Summary of causal model testing

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Proposed effect</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1a</td>
<td>Price → Economic value</td>
<td>-</td>
</tr>
<tr>
<td>H1b</td>
<td>Price → Efficiency</td>
<td>-</td>
</tr>
<tr>
<td>H1c</td>
<td>Price → PPQ</td>
<td>-</td>
</tr>
<tr>
<td>H2a</td>
<td>Customization level → Economic value</td>
<td>+</td>
</tr>
<tr>
<td>H2b</td>
<td>Customization level → Efficiency</td>
<td>-</td>
</tr>
<tr>
<td>H2c</td>
<td>Customization level → PPQ</td>
<td>+</td>
</tr>
<tr>
<td>H2d</td>
<td>Customization level → Enjoyment</td>
<td>+</td>
</tr>
<tr>
<td>H2e</td>
<td>Customization level → Escapism</td>
<td>+</td>
</tr>
<tr>
<td>H3a</td>
<td>ROI → Behavioral intention</td>
<td>+</td>
</tr>
<tr>
<td>H3b</td>
<td>PPQ → Behavioral intention</td>
<td>+</td>
</tr>
<tr>
<td>H3c</td>
<td>Playfulness → Behavioral intention</td>
<td>+</td>
</tr>
</tbody>
</table>

Note: + Positive effect
- Negative effect
s. Significant
n. Non-significant
### Table 5.2 Summary of testing for moderating effects

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Proposed effect</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Moderating variable: relational orientation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H4a Price → PPQ</td>
<td>+</td>
<td>n.t.</td>
</tr>
<tr>
<td>H4b Cust level → Economic value</td>
<td>-</td>
<td>n.t.</td>
</tr>
<tr>
<td>H4c Cust level → PPQ</td>
<td>+</td>
<td>s.</td>
</tr>
<tr>
<td>H4d Cust level → Enjoyment</td>
<td>-</td>
<td>p.</td>
</tr>
<tr>
<td>H4e Cust level → Escapism</td>
<td>-</td>
<td>n.</td>
</tr>
<tr>
<td>H5a ROI → Behavioral intention</td>
<td>+</td>
<td>r.</td>
</tr>
<tr>
<td>H5b PPQ → Behavioral intention</td>
<td>+</td>
<td>r.</td>
</tr>
<tr>
<td>H5c Playfulness → Behavioral intention</td>
<td>-</td>
<td>s.</td>
</tr>
</tbody>
</table>

**Moderating variable: man-nature orientation**

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Proposed effect</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H6a Price → Economic value</td>
<td>-</td>
<td>n.</td>
</tr>
<tr>
<td>H6b Price → Efficiency</td>
<td>-</td>
<td>s.</td>
</tr>
<tr>
<td>H6c Cust level → Economic value</td>
<td>-</td>
<td>n.t.</td>
</tr>
<tr>
<td>H6d Cust level → Enjoyment</td>
<td>-</td>
<td>n.</td>
</tr>
<tr>
<td>H6e Cust level → Escapism</td>
<td>-</td>
<td>p.</td>
</tr>
<tr>
<td>H7a ROI → Behavioral intention</td>
<td>-</td>
<td>n.</td>
</tr>
<tr>
<td>H7b PPQ → Behavioral intention</td>
<td>+</td>
<td>p.</td>
</tr>
<tr>
<td>H7c Playfulness → Behavioral intention</td>
<td>-</td>
<td>n.</td>
</tr>
</tbody>
</table>

Note: + Positive moderating effect  
- Negative moderating effect  
n. Non-significant  
n.t. Not tested  
p. Partially supported  
r. Significant, but in a reverse direction to the original hypothesis  
s. Significant

### 5.1.1 Relationships between marketing attributes, perceived value, and behavioral intention

Hypotheses 1 through 3 predicted the relationships between marketing attributes and perceived value and between perceived value and behavioral intention. The overall causal model (Figure 2.3) was broken down into two sub-models (Figure 3.1, 3.2) for hypothesis testing. Sub-model 1 focused on the effects of marketing attributes on perceived value and the sub-model 2 focused on the effects of perceived value on behavioral intention. These sub-models were tested using structural equation modeling with a maximum-likelihood estimation procedure.
Testing of sub-model 1 supported the proposed negative effects of product price on economic value and efficiency (H1a and H1b), but did not support the proposed positive effect of product price on PPQ (H1c). The failure to find a significant effect of price on quality was not consistent with previous studies (Agarwal & Teas, 2001; Chen & Dunbinsky, 2003; Dodds, Monroe, & Grewal, 1991). I present two possible explanations for this result. First, consumers may not believe that a wide range of quality exists for the product type, t-shirts. Second, the participants may have been influenced by other information about the product on the website. In order to create a realistic shopping experience, the experimental website provided product descriptions including printing method, wash durability, fabric structure, yarn density, fiber content, and finish, which more directly relate to product quality than price. Consumers may rely less on price for judgment of quality when this information is available.

Results of the test of sub-model 1 also supported the hypothesized positive effects of customization level on PPQ, enjoyment, and escapism respectively (H2c, H2d, and H2e). These findings support the use of mass customization to enhance aspects of perceived value for Chinese consumers. Chinese consumers may generally regard mass customized products as having higher quality. This suggests advertisements that emphasize the enhanced product quality of mass customization may be effective in the Chinese market. Additionally, the present study found that apparel mass customization enhances enjoyment and escapism from the shopping process for Chinese consumers. The shopping process is filled with trial and error activities in order for a consumer to design a product (Franke & Schreier, 2006). These activities are exhilarating and absorbing and provide value to consumers irrespective of the products they may get. Fiore et al.’s (2004) study, similarly, found that apparel mass customization enhances shopping enjoyment for U.S. consumers.

In sub-model 1, the hypothesized positive effect of customization level on economic value was not supported (H2a). The premise that consumers may perceive higher economic value from customer-designed t-shirts because these products offer added creativity and personal expression was not supported. This finding is inconsistent with the findings of previous studies using Western consumers (Franke & Piller, 2004; Franke & Schreier, 2006). Franke and Piller (2004) studied customer-designed watches and found that consumers were
willing to pay more for watches they designed than regular products. Similarly, Franke and Schreier (2006) found that consumers were willing to pay more for t-shirts they designed than regular products. Failing to find a significant effect of customization level on economic value in the present study suggests that expressing one’s creativity and personality may not provide added value to Chinese consumers. A possible alternative explanation is that the product design functions of the mass customized product treatments were not sufficient for users to express creativity and personality. This explanation is weakened by the result of manipulation check test, which showed that the participants perceived significantly higher ability to design t-shirts for the mass customized product treatments than the standard product treatments. The first explanation fits the description that Chinese consumers emphasize conformity to group norms, which restrains the expression of individual personality in consumption (Schutte & Ciarlante, 1998).

As discussed in the literature review, mass customization of apparel can focus on providing uniquely-designed products (e.g., Customink.com, Zazzle.com) and/or products with customized functions such as a “custom fit” (e.g., Landend.com). The experimental website focused on the former. The results of H2a do not preclude “custom fit” from offering economic value to Chinese consumers. The effects of “custom fit” on consumers’ perceived value need to be researched in future studies.

The non-significant negative effect of customization level on efficiency (H2b) is advantageous for mass customization firms. Website efficiency and ease of use are important factors affecting consumer behaviors (Lee, Fiore, & Kim, 2006). This finding suggests that the added complexity of the transaction and extra time and energy spent on product design may not reduce Chinese consumers’ perception of efficiency in using mass customization websites. This finding is inconsistent with the finding of Dellaert and Stremersch’s (2005) study for the U.S. consumers, which found that complexity of transaction significantly reduced product utilities for mass customized personal computers. But, it may not be appropriate to attribute the inconsistent findings to cultural differences because different product categories were used in these studies. Further research is needed to clarify whether culture plays a role in the relationship between customization level and efficiency.

Although the manipulation of customization level displayed significant effects on PPQ,
enjoyment, and escapism, it explained a small amount of variance for these variables. This suggests that a simple transition to a mass customization website may not offer a dramatic increase in perceived value for Chinese consumers. Therefore, marketers must pay attention to other marketing factors that affect perceived value such as brand name, site layout, and return policies when implementing apparel mass customization on the Internet because these factors are strongly associated with perceived value (e.g., Chen & Dunbinsky, 2003; Dodds, Monroe, & Grewal, 1991; Wood, 2001).

Sub-model 2 tested the proposed positive effects of perceived value dimensions (ROI, PPQ, and playfulness) on behavioral intention (H3a, H3b, and H3c). Results supported all hypothesized effects. The three dimensions of perceived value accounted for 87 percent of the variance for behavioral intention, indicating these dimensions explained behavioral intention well. Order of the magnitude of the effects suggests that ROI had the strongest predictive power for behavioral intention, followed by playfulness, and PPQ. The order suggests the relative importance of the perceived value dimensions that consumers weight in consumption decisions. Previous studies generally have found that utilitarian or extrinsic value was more important than experiential or intrinsic value in relation to behavioral intentions or satisfaction in various consumption settings (e.g., Fiore et al., 2004; Kim et al., 2002; Lee & Overby, 2004; Mano & Oliver, 1993; Marianna, 2006). However, in these studies, PPQ and ROI were enmeshed with each other in the utilitarian or extrinsic value. It is not possible to directly compare the relative importance of PPQ, ROI, and playfulness in these studies.

5.1.2 Moderating effects of cultural values

Hypotheses 4, 5, 6 and 7 predicted moderating effects of two Chinese cultural values (relational orientation and man-nature orientation) on the proposed relationships in the causal model. Results statistically supported hypotheses 4c, 5c, and 6b, partially supported hypotheses 4d, 6e and 7b, and did not support hypotheses 4e, 5a, 5b, 6a, 6d, 7a, and 7c. Among the non-supported hypotheses, the moderating effects for hypotheses 5a and 5b were statistically significant but in the inverse directions to the original hypotheses. Hypotheses 4a, 4b, and 6c were not tested because the corresponding paths in the causal models were not
significant. The significant moderating effects suggest that the relationships between marketing attributes and perceived value and between perceived value and behavioral intention are subject to the influence of cultural values.

5.1.2.1 Relational orientation
The results provided evidence for the moderating effects of relational orientation on the relationships between customization level and perceived value. Results related to hypothesis 4c showed that the positive effect of customization level on PPQ was more significant for higher relational orientation consumers than for lower relational orientation consumers. This suggests that providing mass customized products enhances perceptions of product quality more significantly for higher relational orientation consumers than lower relational orientation consumers. This finding reinforces the proposition by Schutte and Ciarlante (1998) that relation-oriented consumers are more likely to use external indicators such as brand name, price, and country of origin to make quality judgments in order to reduce the risk of disapproval by peer group members.

The results partially supported the moderating effect of relational orientation on the relationship between customization level and enjoyment (H4d). Participating in product design enhances shopping enjoyment more significantly for lower relational orientation consumers than higher relational orientation consumers. Relational orientation stresses the conformity of one’s behavior to group norms and discourages showing of uniqueness in consumption. Therefore, it will limit the enjoyment that Chinese consumers may obtain from participating in product design.

Hypotheses 5a through 5c posited that relational orientation moderates the effects of perceived value on behavioral intention. As expected, the positive effect of playfulness (intrinsic value) was more significant on behavioral intention for lower relational orientation consumers than higher relational orientation consumers (H5c). This indicates that relational orientation reduces the importance of playfulness in consumption decision making for Chinese consumers. The results for H5b and H5c were unexpected; they were in the inverse direction to what were hypothesized. ROI and PPQ (extrinsic value) were found to be more important for lower relational orientation consumers than higher relational orientation
consumers. I submit two possible explanations for this finding. First, higher relational orientation consumers tend to be less sensitive to price when consuming products to be worn in public, such as t-shirts. Schutte and Ciarlante (1998) indicated that a premium price reduces the economic value but may greatly enhance the status (i.e., face) of the consumer when consuming publicly-used products. The consumer could be motivated by the enhanced status and may disregard or accept a higher price tag if his/her self-concept is oriented toward an interdependent self. Second, higher relational orientation consumers are more likely to receive financial cushioning from family and relatives, which makes them less averse to financial risks compared to individualistic consumers (Malhotra & McCort, 2001). Thus ROI and PPQ may be less important in determining behavioral intention for higher relational orientation consumers than lower relational orientation consumers in consumption.

The perceived value dimensions researched in the present study were generally less important to higher relational orientation consumers compared to lower relational orientation consumers. This suggests that higher relational orientation consumers possibly weigh other aspects of perceived value in consumption decisions. Schutte and Ciarlante (1998) suggested that Asian consumers, who are interdependent in personal relationships, may be strongly motivated by other-oriented value (Holbrook, 1999; Smith, 1999) such as affiliation, status, and admiration. These aspects of perceived value were separate from performance of the product and the shopping experience (Holbrook, 1999). When consuming products that are publicly used (i.e., t-shirts) relational orientation tend to lead consumers to a status-seeking consumption pattern (Schuttee & Ciarlante, 1998). The purchase criterion for these products is the capacity of the product to deliver the right meaning according to accepted norms and standards. Such meanings are transmitted through signals such as price, brand name and packaging rather than inherent product quality. The other-oriented aspects of perceived value were not tapped by the perceived value dimensions in the present study. Including these aspects of perceived value may better explain behavioral intention for higher relational orientation consumers.

5.1.2.2 Man-nature orientation

Results supported that man-nature orientation negatively moderates the relationship
between price and efficiency (H6b). Man-nature orientation reveals how strongly a consumer believes in Yuan, which predetermines one’s relations with other objects or individuals (Yau, 1994). In consumption settings, higher man-nature orientation consumers may attribute the relationship with a high-priced product to Yuan. When a high price curbs consumers from purchasing, they may attribute it to lack of Yuan with the product instead of developing a negative feeling such as inconvenience about the retail outlet.

The results partially supported the hypothesized negative moderating effect of man-nature orientation on the relationship between customization level and escapism (H6e). This finding supports the proposition that man-nature orientation limits Chinese Consumers’ interest and desire to be involved in modifying the design of the product. Higher man-nature orientation consumers are not likely to be absorbed in the design activities to the point that they feel removed from the mundane world. Apparel mass customization that concentrates on providing an enjoyable and absorbing shopping experience may make better sense for lower man-nature orientation consumers than higher man-nature orientation consumers.

The results did not support the hypothesized moderating effects of man-nature orientation on the relationships between perceived value dimensions (ROI, PPQ, and playfulness) and behavioral intention. But the moderating effect of man-nature orientation on the relationship between PPQ and behavioral intention received partial support (H7b). Man-nature orientation enhances the relative importance of PPQ in consumers’ decision making about using a retail website. Marketing efforts that concentrate on improving consumers’ perception of product quality may be most effective with higher man-nature orientation consumers.

5.2 Conclusions and implications

The present study examined the effects of marketing attributes (customization level and product price) on various aspects of perceived value. On the one hand, mass customization of apparel significantly enhanced Chinese consumers’ perceptions of product quality. In addition, mass customization significantly enhanced enjoyment and escapism from the consumption experience. On the other hand, the increased price associated with mass
customized apparel may negatively affect economic value and efficiency of a consumption experience. The present research sends an encouraging message to firms wishing to market mass customized apparel to Chinese consumers because various aspects of perceived value (product quality, enjoyment and escapism) were positively associated with mass customization.

The present study focused on apparel mass customization that offers customer-designed products (e.g., designing a t-shirt with a special slogan). Customer-designed apparel concentrates on providing an outlet for creative expression. The findings show that Chinese consumers do not attach enhanced economic value to self-designed apparel probably because of the pressure to conform to group norms. Marketers must consider which aspects of perceived value to promote when marketing customer-designed apparel in the Chinese market. They may need to focus on product quality, shopping enjoyment, and escapism rather than enhanced economic value of customer-designed apparel.

The present study makes clear that the influence of cultural values on consumer responses must be taken into consideration when developing marketing approaches. Table 5.3 provides a summary of the influence of cultural values on consumer responses. Chinese consumers with different cultural values attach different perceived value to mass customization. Marketers may need to use different strategies when targeting consumers with different cultural values. Higher relational orientation consumers are more likely to perceive enhanced product quality from mass customization than lower relational orientation consumers. But higher relational orientation consumers may derive less enjoyment from the shopping experience with apparel mass customization compared to lower relational orientation consumers. Promotional campaigns that stress the enhanced product quality of mass customized apparel may be more effective with higher relational orientation consumers whereas campaigns that stress enhanced shopping enjoyment may be more effective with lower relational orientation consumers. Regarding man-nature orientation, lower man-nature orientation consumers tend to derive more escapism from the shopping experience than higher man-nature orientation consumers. Promotional campaigns that stress the absorbing shopping experience of apparel mass customization may be more effective with lower man-nature orientation consumers than higher man-nature orientation consumers. In addition,
the study found that man-nature orientation affects consumers’ perception about price. A high price makes consumers feel decreased efficiency about an retail outlet or website because the price curbs them from buying. However, consumers with a higher level of man-nature orientation are less likely to feel decreased efficiency due to a high price compared to consumers with a lower level.

Table 5.3 Summary of the influence of Chinese cultural values on consumer responses

<table>
<thead>
<tr>
<th>Relational orientation</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less likely to perceive enhanced product quality from mass customization</td>
<td>More likely to perceive enhanced product quality from mass customization</td>
<td></td>
</tr>
<tr>
<td>More likely to perceive enjoyment from mass customization</td>
<td>Less likely to perceive enjoyment from mass customization</td>
<td></td>
</tr>
<tr>
<td>Regard economic value as more important in consumption decisions</td>
<td>Regard economic value as less important in consumption decisions</td>
<td></td>
</tr>
<tr>
<td>Regard product quality as more important in consumption decisions</td>
<td>Regard product quality as less important in consumption decisions</td>
<td></td>
</tr>
<tr>
<td>Regard playfulness as more important in consumption decisions</td>
<td>Regard playfulness as less important in consumption decisions</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Man nature orientation</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More Likely to perceive escapism from mass customization</td>
<td>Less likely to perceive escapism from mass customization</td>
<td></td>
</tr>
<tr>
<td>More likely to perceive decreased efficiency about a website due to high prices</td>
<td>Less likely to perceive decreased efficiency about a website due to high prices</td>
<td></td>
</tr>
<tr>
<td>Regard product performance and quality less important in consumption decisions</td>
<td>Regard product performance and quality more important in consumption decisions</td>
<td></td>
</tr>
</tbody>
</table>

The present study found that Chinese cultural values influence the relative importance of perceived value dimensions in relation to behavioral intention. The results showed that lower relational orientation consumers may regard economic value as more important in consumption decisions compared to higher relational orientation consumers. This suggests that lower relational orientation consumers are more likely to rationally evaluate the returns (i.e., product utilities) and investments (i.e., financial costs, time) of a transaction. In addition, these consumers are also more concerned with product quality than higher relational
orientation consumers. Further, lower relational orientation consumers may be more motivated by the experiential part of a shopping process. They are more likely to be involved with an apparel website for the enjoyment and escapism of the shopping process compared to higher relational orientation consumers. Regarding man-nature orientation, higher man-nature orientation consumers appear more concerned with product performance and quality in decision makings about apparel products compared to lower man-nature orientation consumers. These findings suggest a great potential of using Chinese cultural values as bases for market segmentation. Marketers must adjust their marketing strategies when targeting consumers with different cultural values.

The present study contributes to the growing body of research on mass customization of apparel (e.g., Anderson et al., 1997; Fiore et al., 2004; Franke and Piller, 2004; Franke & Schreier, 2006; Kamali & Loker, 2002; Lee, 2004; Lee, Kunz, Fiore, & Campbell, 2002). A number of studies (Fiore et al., 2004; Franke and Piller, 2004; Franke & Schreier, 2006; Kamali & Loker, 2002) have empirically examined consumers’ perceived value from mass customization, but these studies used Western consumers. The present study used the Experiential Value Model as a framework for perceived value. The findings support that this framework may be useful in explaining consumer behavior of non-Western consumers. Therefore, the present study contributes to the knowledge of “global consumer behavior” by attempting to test Western-based constructs and theories in the non-Western (Chinese) context.

5.3 Limitations

First, this study used a non-probability sample composed mostly of college students in major cities, which does not represent the general consuming population of China. Regional imbalance in economic development (e.g., developed South East and underdeveloped North West, wealthy urban areas and impoverished rural areas) (Carter, 1997; Kanbur & Zhang, 1999; Shen, 1998; Yang, 1999) and diverse cultures within China (Chen, 1996; Oakes, 2000) suggest that generalization of the findings to the general Chinese population is not warranted.

Second, the experimental setting was not fully controlled. Participants accessed the research website using different Internet browsers and connection speeds, which may affect
the impression of the experimental website. Different Internet browsers and resolution settings of monitors can affect the display of the website, although measures were taken in the website design to minimize their impact. Speed of the Internet may affect the users’ interaction with the website and greatly impact their responses toward the site (Cho, Byun, & Sung, 2003; Demangest & Broderik, 2006; Geisster, 2001). The actual time that participants spent on the site was not controlled. The level of exposure with the site may affect the responses. Zajonc (1980) indicated that affective responses may increase simply due to more exposure with a stimulus.

Third, during the moderating effect tests, the sample was split into lower cultural value and higher cultural value groups using the medium value for each Chinese cultural value variable. This median split method transformed the cultural value variables, measured as continuous variables, into two categorical variables. To retain the number of cases needed to run the statistical test, I did not eliminate the middle portion of cases to create more distinguishable lower and higher groups. This transformation might account for some of the non-significant moderating effects. An alternative approach for testing moderating effects is linear regression, with which continuous moderating variables would be used. However, linear regression lacks the ability to factor out measurement errors of the multi-item measurements, compared to the structural equation modeling approach used in the present study.

Fourth, many of the measurement scales in this study were originally developed for tapping aspects of Western consumers. It was assumed that these measurement items would be equally meaningful to the Chinese consumers. Moreover, many terms were not directly translatable. Even when there was a direct translation, different connotations may be associated in the two languages. Results of the present study should take these limitations into consideration as they may affect both internal and external validity.

5.4 Future studies

The present study adds to research examining consumer responses toward mass customization. Whereas many of these studies look at U.S. consumers, the present study is
likely the first effort to empirically investigate Chinese consumers’ responses towards mass customization. Along with future studies comparing the effect of similar mass customization websites on value perceived by U.S. and Chinese consumers, further studies should include consumers from other non-Western cultures to test for similarities and differences among cultures. Research has shown a great diversity in Asian consumer behaviors (Trompenaars, 1993; Schutte & Ciarlante, 1998), which suggests that validation with other Asian cultures should be completed instead of generalizing from the present study. Further, since great regional differences in culture and economic development status have been found within China (Chen, 1996; Oakes, 2000), including samples from other regions of China and comparing consumers from these regions are necessary to enhance the external validity of this study. These comparisons are necessary for marketers who would like to extend a mass customization offering into Asian markets.

This study investigated the influence of two Chinese cultural values, relational orientation and man-nature orientation, because they received relatively more attention in the past research and their influence on Chinese consumers’ behaviors were more clearly discussed. This suggests a possibility of an exploratory study that includes other Chinese cultural values such as man-to-himself orientation, time orientation, and activity orientation in a similar research setting as this one.

As suggested by the findings, product type might influence consumers’ perceived value for mass customization. T-shirts are often publicly worn by consumers with ages similar to the sample. Perceived value for privately used products (e.g., underwear), may be very different. Future research may investigate whether mass customization of various product types affects perceived value and consequent behavioral intentions.

Moreover, the present study examined Chinese consumers’ responses toward customer-designed apparel, which is only one form of mass customization for apparel. Mass customization can also focus on providing customized product functions such as “custom fit”. Because these two forms of apparel mass customization may provide different value to consumers, the findings of the study cannot be generalized to apparel mass customization that offers “custom fit”. Future studies can investigate perceived value and behavioral intention towards “custom fit”.
APPENDIX A: MAIN STUDY QUESTIONNAIRE
Part I. We would like to know how you think of the website. For each of the following statements, please select an answer that best describes your opinion.

1. By browsing the website, I think the likelihood that the fabric of the product would be comfortable is…
   
   [Very low] 1 2 3 4 5 6 7 [Very high]

2. The price on this website is…
   
   [Very low] 1 2 3 4 5 6 7 [Very high]

3. The interactivity of the website is…
   
   [Very low] 1 2 3 4 5 6 7 [Very high]

4. The extent to which this website allows me to personalize my product is…
   
   [Very low] 1 2 3 4 5 6 7 [Very high]

5. If this website is launched, I would recommend this site to my friends or family.
   
   [Strongly disagree] 1 2 3 4 5 6 7 [Strongly agree]

6. Shopping from this website would give me a chance to get away from it all.
   
   [Strongly disagree] 1 2 3 4 5 6 7 [Strongly agree]

7. Products on this website are a good economic value.
   
   [Strongly disagree] 1 2 3 4 5 6 7 [Strongly agree]

8. By browsing the website, I think the quality of the products on this website is probably…
   
   [Very low] 1 2 3 4 5 6 7 [Very high]

9. I would enjoy shopping from this website for its own sake, not just for the items I may purchase.
   
   [Strongly disagree] 1 2 3 4 5 6 7 [Strongly agree]

10. The price on this website is too high for a product of its kind.
    
    [Strongly disagree] 1 2 3 4 5 6 7 [Strongly agree]

    If I were to purchase a t-shirt from this website, it would be hard to manage my time.

11. [Strongly disagree] 1 2 3 4 5 6 7 [Strongly agree]

12. By browsing this website, I think the workmanship of the products is likely to be…
    
    [Very low] 1 2 3 4 5 6 7 [Very high]

13. Overall, I am happy with this website’s prices.
    
    [Strongly disagree] 1 2 3 4 5 6 7 [Strongly agree]

14. I would shop from this website for the pure enjoyment of it.
    
    [Strongly disagree] 1 2 3 4 5 6 7 [Strongly agree]

15. If I were to purchase a t-shirt, shopping from this website would make my task easier.
    
    [Strongly disagree] 1 2 3 4 5 6 7 [Strongly agree]
16. Shopping from the website made me feel like I am in another world.  

17. If this website starts to operate, I would be willing to visit this site again.  

18. By browsing the website, I think the likelihood that the products on this website would be reliable is…  

19. When talking about apparel websites with other people, I am willing to say positive things about this site.  

20. I would get so involved when I shop from this website that I would forget everything.  

21. By browsing the website, I think the durability of the products on this website is likely to be…  

22. I would be willing to purchase a product available on this site if this website starts operate.  

23. If I would like to purchase a t-shirt, shopping from this Internet site would save my time.  

24. If this website is launched, I would come to this website to search for product information.  

Part II. We would like to know your attitudes toward life. For each of the following statements, please select an answer that best describes your opinion.

1. Even when I strongly disagree with group members, I avoid an argument.  

2. I have respect for the authority figures with whom I interact.  

3. I respect people who are modest about themselves.  

4. I will sacrifice my self interest for the benefit of the group I am in.
5. I should take into consideration my parents' advice when making education/career plans.  
   1 2 3 4 5 6 7 Strongly agree

6. I feel my fate is intertwined with the fate of those around me.  
   1 2 3 4 5 6 7 Strongly agree

7. I feel good when I cooperate with others.  
   1 2 3 4 5 6 7 Strongly agree

8. If my brother or sister fails, I feel responsible.  
   1 2 3 4 5 6 7 Strongly agree

9. I would offer my seat in a bus to my professor (or my boss).  
   1 2 3 4 5 6 7 Strongly agree

10. My happiness depends on the happiness of those around me.  
    1 2 3 4 5 6 7 Strongly agree

11. I will stay in a group if they need me, even when I am not happy with the group.  
    1 2 3 4 5 6 7 Strongly agree

12. It is important to me to respect decisions made by the group.  
    1 2 3 4 5 6 7 Strongly agree

13. It is important for me to maintain harmony within my group.  
    1 2 3 4 5 6 7 Strongly agree

14. I usually go along with what others want to do, even when I would rather do something different.  
    1 2 3 4 5 6 7 Strongly agree

15. I often have the feeling that my relationships with others are more important than my own achievement.  
    1 2 3 4 5 6 7 Strongly agree

The following statements are some Chinese proverbs. For each of the proverbs, please select an answer that best describes how much you agree with it.

16. Life and death are fated; wealth and honors hinge on the will of providence.  
    1 2 3 4 5 6 7 Strongly agree

17. Fate is predestined.  
    1 2 3 4 5 6 7 Strongly agree

18. Do all that is humanly possible and leave the rest to the will of providence.  
    1 2 3 4 5 6 7 Strongly agree

19. He who submits Heaven shall live; he who rebels against Heaven shall perish.  
    1 2 3 4 5 6 7 Strongly agree
Part III. We would like to know some of your personal information.

1. Your gender is:  ____female  ____male
2. Your age is ____________
3. Your occupation is ______________
4. Your education level is…
   ____Junior middle school  ____high school/professional school  ____college
   ____graduate school
5. Your monthly income is…(RMB)
   ___ < 499  ___500-999  ___1000-1999  ___2000-4999  ___5000-9999
   ___ < 10000
6. How many times do you shop online in a month?
   ___less than one time  ___one time  ____two to three times
   ____four or more than four times
7. How long have you been using the Internet.
   ___less than one year  ___about one year  ____two to three years
   ____four or more than four years
8. Have you ever purchased any personalized products? (Compared to standard products,
   personalized product allows a customer to change the design of the product according
   to one’s preferences and needs before the product is produced rather than selecting from the
   products that have already been produced.)
   ___yes  ___no
9. Did you ever browse a website similar to this?
   ___yes  ___no
   If yes, do you remember the name of the website? ____________________

If you would like to participate in prize drawing, please input your e-mail address. If you
would not like to participate, please skip this question and submit your questionnaire.
E-mail: _____________________
(Main study questionnaire Chinese translation)

第一部分. 我们想了解您对该网站的看法。对于以下每一项描述，请在他们右边的七个选项中，选择一个与你的看法最接近的。

<table>
<thead>
<tr>
<th>序号</th>
<th>描述</th>
<th>选项</th>
<th>选项</th>
<th>选项</th>
<th>选项</th>
<th>选项</th>
<th>选项</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>通过浏览该网站，我认为其产品面料的舒适性可能是...</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>该网站的价格...</td>
<td>非常低</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>该网站的互动性...</td>
<td>非常弱</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>该网站可以提供我个性化商品的程度...</td>
<td>非常低</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>如果这个网站开始运营，我会把这个网站推荐给朋友或家人。</td>
<td>非常不同意</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>在该网站上购物时，我可以将其他事情抛诸脑后。</td>
<td>非常不同意</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>该网站的产品的价格很实惠。</td>
<td>非常不同意</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td>通过浏览该网站，我想该网站产品的质量可能是...</td>
<td>非常低</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>我觉得在该网站购物的乐趣，是因为购物的过程本身，而不是因为要买的东西。</td>
<td>非常不同意</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10</td>
<td>该网站的价格对于这类商品来说太高了。</td>
<td>非常不同意</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11</td>
<td>如果在该网站购买 T 恤，我将难以管理我的时间。</td>
<td>非常不同意</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12</td>
<td>通过浏览这个网站，我认为该网站产品的做工可能是...</td>
<td>非常低</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13</td>
<td>总的来说，我对该网站产品的价格感到满意。</td>
<td>非常不同意</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14</td>
<td>我会仅仅为了享受一种乐趣，而在这个网站购物。</td>
<td>非常不同意</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15</td>
<td>如果我要在该网站购买 T 恤，使用该网站将使任务更容易。</td>
<td>非常不同意</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16</td>
<td>在该网站购物可以使我感到仿佛置身于另一个世界。</td>
<td>非常不同意</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17</td>
<td>如果这个网站开始运营，我愿意再次访问该网站。</td>
<td>非常不同意</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18</td>
<td>通过浏览该网站，我认为其产品在使用上的可靠性可能是...</td>
<td>非常低</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19</td>
<td>当和其他人谈到服装商业网站时，我愿意正面评价这个网站。</td>
<td>非常不同意</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
20. 在该网站上购物时，我会如此沉浸其中，以至于忘记一切其他事情。非常不同意 1 2 3 4 5 6 7 非常同意

21. 通过浏览该网站，我想其产品的耐用性可能是... 非常低 1 2 3 4 5 6 7 非常高

22. 如果这个网站开始运营，我会愿意在该网站购买商品。非常不同意 1 2 3 4 5 6 7 非常同意

23. 如果我要购买 T 恤，在该网站购买能节约时间。非常不同意 1 2 3 4 5 6 7 非常同意

24. 如果这个网站开始运营，我会到该网站来查询商品信息。非常不同意 1 2 3 4 5 6 7 非常同意

第二部分. 我们想了解您对生活当中的一些问题的态度。对于以下每一项描述，请在右边的七个选项中，选择一个与你的看法最接近的。

1. 即使我非常不同意其他成员的意见，我也会避免争论。非常不同意 1 2 3 4 5 6 7 非常同意

2. 我通常会尊重权威人物的意见。非常不同意 1 2 3 4 5 6 7 非常同意

3. 我尊重谦虚的人。非常不同意 1 2 3 4 5 6 7 非常同意

4. 我会为了群体的利益而牺牲自己的利益。非常不同意 1 2 3 4 5 6 7 非常同意

5. 在做教育和职业方面的打算时，我应该会考虑父母的建议。非常不同意 1 2 3 4 5 6 7 非常同意

6. 我感到我的命运与周围的人的命运是相关的。非常不同意 1 2 3 4 5 6 7 非常同意

7. 和别人合作时我感觉良好。非常不同意 1 2 3 4 5 6 7 非常同意

8. 如果我的兄弟姐妹失误了，我感到自己也有责任。非常不同意 1 2 3 4 5 6 7 非常同意

9. 我会在公共汽车上给我的教授（或老板）让座。非常不同意 1 2 3 4 5 6 7 非常同意

10. 我的快乐取决于周围人的快乐与否。非常不同意 1 2 3 4 5 6 7 非常同意

11. 即使我不喜欢某个群体，但是如果他们需要我，我会留在该群体。非常不同意 1 2 3 4 5 6 7 非常同意

12. 尊重集体的决定对我而言是重要的。非常不同意 1 2 3 4 5 6 7 非常同意

13. 和我所在的群体保持和谐是重要的。非常不同意 1 2 3 4 5 6 7 非常同意

14. 我通常会顺着其他人的想法，即使我本来的想法有所不同。非常不同意 1 2 3 4 5 6 7 非常同意

15. 当达成个人目标和人际关系发生矛盾的时候，我常常感到人际关系比达成个人目标更重要。非常不同意 1 2 3 4 5 6 7 非常同意
下面列出了一些中国古语，对于这些古语，你的认同度是？

16. 生死由命，富贵在天。 非常不同意 1 2 3 4 5 6 7 非常同意
17. 命天注定。 非常不同意 1 2 3 4 5 6 7 非常同意
18. 谋事在人，成事在天。 非常不同意 1 2 3 4 5 6 7 非常同意
19. 顺天者昌，逆天者亡。 非常不同意 1 2 3 4 5 6 7 非常同意

第三部分. 我们需要了解您个人的大致情况

1. 你的性别是: ___女 ______男
2. 你的年龄是 ______________
3. 你的职业是 ______________
4. 你的教育程度是__________
   ___初中  ___高中/职校/中专  ___大学/大专  ___硕士/博士
5. 你每个月的收入（或生活费）是（单位：元）:
   ___< 499    ___500-999    ___1000-1999    ___2000-4999    ___5000-9999
   ___< 10000
6. 你每个月在网上购物的次数平均是?
   ___小于一次    ___一次    ___两到三次    ___四次或四次以上
7. 你的网龄有多长?
   ___小于一年    ___一年    ___两到三年    ___四年或四年以上
8. 你曾经在网上购买过任何个性化商品吗？
   （个性化商品是相对于标准化商品而言的。顾客在购买个性化商品时，可以在该商品生产出来之前，根据自己的喜好和需要改变商品的设计，而不是在已经生产出来的商品中做出选择。）
   ___是    ___否
9. 你有没有浏览过和该网站类似的网站
   ___是    ___否
   如果是，你能回忆起网站的名字吗？ ____________________

如果您愿意参加抽奖请输入您常用的电子邮件地址。如果你不想参加抽奖，请直接提交。
电子邮件: ____________________
APPENDIX B: STANDARD PRODUCTS AND LOWER PRICE TREATEMENT
Enter into questionnaire

All products: 25 RMB/pc
Screen Printing, wash durable
High density flat knit, pre-shinked
Complete colors and sizes

Twelve pre-determined designs (four for each style) that cannot be modified.
All products: 25.00 RMB/pc
Screen Printing, wash durable
High density flat knit, pre-shinked
Complete colors and sizes

Select sizes

Size chart

Enter into questionnaire
APPENDIX C: STANDARD PRODUCTS AND HIGHER PRICE TREATEMENT
Enter into questionnaire

All products: 95 RMB/pc
Screen Printing, wash durable
High density flat knit, pre-shinked
Complete colors and sizes

Twelve pre-determined designs (four for each style) that cannot be modified.

Female
Male

Enter into questionnaire
All products: 95 Yuan/pc
Screen Printing, wash durable
High density flat knit, pre-shrinked
Complete colors and sizes

Select sizes

Size chart

<table>
<thead>
<tr>
<th></th>
<th>S</th>
<th>M</th>
<th>L</th>
<th>XL</th>
<th>XXL</th>
</tr>
</thead>
<tbody>
<tr>
<td>女</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>155</td>
<td>160</td>
<td>165</td>
<td>170</td>
<td>175</td>
<td></td>
</tr>
<tr>
<td>男</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>165</td>
<td>170</td>
<td>175</td>
<td>175</td>
<td>185</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX D: MASS CUSTOMIZED PRODUCTS AND LOWER PRICE TREATMENT
**Personalized Shirt**

- **Fabric color**
  - Male
  - Female
- **Print design**
  - Five image categories
- **Slogan design**
  - Add text:
  - Font:
- **Sleeve Options**
  - Regular
  - Wider
  - Cap sleeve
  - Short sleeve
  - Long sleeve
- **All products:**
  - 25 RMB/pc
  - Screen Printing, wash durable
  - High density flat knit, pre-shinked
  - Complete colors and sizes

**Enter into questionnaire**

Waiting for www2.hs.iastate.edu...
Select sizes

Size chart

Female
Male

Enter into questionnaire
APPENDIX E: MASS CUSTOMIZED PRODUCTS AND HIGHER PRICE TREATEMENT
<table>
<thead>
<tr>
<th>Fabric color</th>
<th>Image design</th>
<th>Slogan design</th>
</tr>
</thead>
<tbody>
<tr>
<td>All products: 95.00 RMB/pc</td>
<td>Screen Printing, wash durable High density flat knit, pre-shinked Complete colors and sizes</td>
<td>Enter into questionnaire</td>
</tr>
</tbody>
</table>
All products: 95.00 RMB/pc
Screen Printing, wash durable
High density flat knit, pre-shinked
Complete colors and sizes

Select sizes

Size chart

<table>
<thead>
<tr>
<th>Size</th>
<th>S</th>
<th>M</th>
<th>L</th>
<th>XL</th>
<th>2XL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>155</td>
<td>160</td>
<td>165</td>
<td>170</td>
<td>175</td>
</tr>
<tr>
<td>Men</td>
<td>165</td>
<td>170</td>
<td>175</td>
<td>175</td>
<td>185</td>
</tr>
</tbody>
</table>

Enter into questionnaire
The Institutional Review Board (IRB) Chair has reviewed the project, “Influence of Chinese Cultural Values on Consumers’ Perception of Online Apparel Mass Customization,” and declared the study exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b)(1) and (2). The applicable exemption category is provided below for your information. Please note that you must submit all research involving human participants for review by the IRB. Only the IRB may make the determination of exemption, even if you conduct a study in the future that is exactly like this study.

The IRB determination of exemption means that this project does not need to meet the requirements from the Department of Health and Human Service (DHHS) regulations for the protection of human subjects, unless required by the IRB. We do, however, urge you to protect the rights of your participants in the same ways that you would if the project was required to follow the regulations. This includes providing relevant information about the research to the participants.

Because your project is exempt, you do not need to submit an application for continuing review. However, you must carry out the research as proposed in the IRB application, including obtaining and documenting (signed) informed consent if you have stated in your application that you will do so or if required by the IRB.

Any modification of this research should be submitted to the IRB on a Continuation and/or Modification form, prior to making any changes, to determine if the project still meets the Federal criteria for exemption. If it is determined that exemption is no longer warranted, then an IRB proposal will need to be submitted and approved before proceeding with data collection.

CC: Professor Ann Marie Fiore

Exempt Categories:

(1) Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

ORA 05/06 – Exempt
REFERENCES


*Customer Clothing Today.* (n.d.). Retrieved March, 10, 2007 from:

http://www.bodyscan.human.cornell.edu/scene0605.html


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