

Consumer Purchase Intention to Buy Mass Customized Products Online: Effects of Culture, Product Type and Price*

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Do culture, product type and price have an impact on consumer intention to buy mass customized products online? The initial hypotheses are that consumers' intentions to purchase mass customized products will be affected by individualism, uncertainty avoidance, power distance, and masculinity dimensions of a national culture. Also, it is hypothesized that consumers are more likely to buy mass customized search products than experience products, and their purchase intentions for a mass customized product will not be influenced by price premium up to some level.

Results indicate that individualism has a significant effect on the purchase intention for mass customized products. As expected product type has a significant effect and price premium does not have a significant effect on the purchase intention for mass customized products. Also, individualism by price interaction has a significant effect. Major findings and implications are discussed.

Key words: mass customization, personalization, national culture, product type, price effect, purchase intention, experimental design

I. INTRODUCTION

Mass customization strategies have become increasingly popular in various types of businesses (Goldsmith and Freiden, 2004). Mass customization involves offering products individually customized to customers' needs (Hart, 1995). Technological developments in flexible manufacturing as well as information technologies have enabled firms to implement mass customization.

Internet and related technologies have emerged as an essential vehicle for implementing mass customization in an economical way (Hanson, 2000; Wind and Rangaswamy, 2001). Obtaining accurate, timely, and relevant individual customer information is a key problem facing many companies trying to customize. By providing a direct connection between manufacturers and final customers, companies now have an efficient method of collecting the data they need to implement mass customization.

Firms have adopted web-based mass customization to successfully market a wide range of products from clothing, personal computers, eyeglasses, bicycles, and coffee to greeting cards. For example, Nike's internet homepage provides NIKEiD.com as a menu category to offer customers customized footwear, equipment, and collections. The customer can start with a blank item and add color and a personal id, through the step-by-step customization process, to design his/her own creation. Computer manufacturer Dell has met the diverse needs of different customers by producing thousands of different computer configurations and the sales volume of the customized personal computers has increased up to over 50 percent of total sales (Wind and Rangaswamy, 2001).

Online mass customization may provide a new direction in the long-lasting, however, not resolved debate in international marketing, which is the standardization versus customization debate (e.g., Jain, 1989; Zou and Cavusgil, 1996). One primary advantage argued for standardized marketing strategy over customization is a low cost, which is realized from its economies of scale in production and marketing (Zou, Andrus and Norvell, 1997). However, a standardization approach has an inherent weakness in that it is a product orientation, rather than a customer orientation. It has been suggested that a market orientation, in which custo-

mers and competitors are the focus of a company's strategy, can lead to enhanced business performance (Jarworski and Kohli, 1993; Narver and Slater, 1990). A company that emphasizes product costs can ignore differences in customer needs and preferences across countries, and become vulnerable to competitive attacks in individual foreign markets (Cavusgil and Zou, 1994).

It seems that mass customization can take advantages of both standardized and customized strategies because it offers individually customized products at costs that are almost the same as that of standardized production and mass marketing. While the concept of the global, mass customization sounds unique and exciting, it has not been validated with consumers (Goldsmith and Freiden, 2004).

Our understanding is very limited on consumer responses to and factors affecting consumer responses to mass customization. Therefore, we would like to examine consumer responses to mass customization across different cultures. More specifically, we would like to empirically examine issues that are vitally important for firms considering mass customization strategy. These issues include: How strongly do consumers intend to purchase a mass customized product? Do consumers of different national cultures show differential responses? Do consumer responses vary across product

types? How much does a price premium of mass customized products affect consumer responses?

In the following sections we develop the research hypotheses, describe the experimental study used to test the hypotheses, report the results, and discuss the implications of the findings.

II. CONCEPTUAL BACKGROUND AND HYPOTHESES

2.1 Mass Customization and Customer Perceived Value

Mass customization is defined as "the use of flexible processes and organizational structures to produce varied and often individually customized products and services at the low cost of a standardized, mass production system" (Hart, 1995). Early customization efforts were in the form of "made to order" products and services, which had long lead times and were not tied to flexible manufacturing systems. The recent advances in flexible manufacturing, coupled with the collection of detailed information about customers, and advances in database marketing enables firms to offer products tailored to customers' needs but at costs that are almost the same as that of stan-

dardized production and mass marketing.

Mass customization provides what a particular customer wants by transforming a standard product into a specialized solution for an individual (Pine and Gilmore, 1999). Von Hippel (1998) highlights the importance of customer involvement in designing products, as the customer has the best understanding of his or her needs. From the consumer perspective the essence of mass customization is to buy an individually tailored product rather than a standard product. Customization of product features increases the value of the bundle of benefits that the customer receives from a product or service. Mass customization can thus enhance customer perceived value.

Customer perceived value is the difference between the prospective customer's evaluation of all the benefits and costs of an offering, and the perceived alternatives (Kotler, 2003). Mass customization will increase value if the increase in the value of the bundle of benefits provided by the mass customized product is greater than any incremental cost associated with it. Being value-maximizers, consumers will be more likely to purchase customized products if these products provide greater value.

2.2 Mass Customization and Culture

Since Levitt (1983) some scholars posit

that globalization has created a progressively more homogenized world market, with an increasing number of consumers from diverse geographic locations and cultural backgrounds sharing the same preferences. The view that people around the world live in a more uniform pattern has facilitated the emergence of global brands with relatively standardized marketing strategies employed across cultural boundaries (Zou and Cavusgil, 2002).

Yet, other researchers report an evidence of increased divergence, especially among industrialized countries (Usunier, 1997). For example, in Europe, despite economic union and a progression toward the standardization of the political and social infrastructure, national cultural values are strongly rooted in history, and appear to be stable over time (De Mooij, 2000). It has been reported that consumers from different cultures have different attitudes, preferences and values, and remain reluctant to purchase foreign products even after much exposure to globalization (Suh and Kwon, 2002). Cultural differences impact consumer behaviors such as attitudes and persuasion (Aaker, 2000), diffusion of new products (Takada and Jain, 1991; Steenkamp et al., 1999), and product and service usage (Zaichkowsky and Sood, 1989).

Accordingly, we posit that consumers respond differentially to mass customized

products across different cultures. For example, New Zealand is a more individualistic, less uncertainty avoiding, less power distant, and more masculine society compared to Korea (See Hofstede, 1980) and the difference may affect consumer responses to mass customized products differentially between the two countries.

The four cultural dimensions suggested in Hofstede (1980) are likely to be relevant in explaining cross-cultural differences in consumers' purchase intention which is a multi-faceted concept. Individualism implies a loosely knit social framework in which 'I' consciousness and individual initiative are emphasized, whereas collectivism indicates a tight social framework in which 'We' consciousness and belonging to organizations and membership are emphasized (Hofstede, 1980). People of high individualism society value a private life, individual decisions, autonomy, and variety. In contrast, people of high collectivism society value group decisions, order, and security. For example, Chinese society has historically focused on harmony and conformity in governing all interpersonal relations, and de-emphasized personal goals (Neelankavil, Mathur, and Zhang, 2000).

On the other hand, in Europe and North America, individualism is a desirable trait worth striving for and thus the consumer in the regions is expected to express his/her

own individuality more strongly than the consumer in less individualistic countries. Mass customized products will help consumers express their unique characters because the products are individually customized to customers' preferences. Therefore, Hypothesis 1a is offered as:

Hypothesis 1a: Consumer intentions to purchase mass customized products online will be stronger for consumers of a more individualistic country than for those of a less individualistic country.

Uncertainty avoidance indicates the extent to which a society feels threatened by uncertain and ambiguous situations and tries to avoid these situations (Hofstede, 1980). Individuals of a high uncertainty avoidance society tend to establish more formal rules and not tolerate deviant ideas and behaviors. Consumers are likely to be more satisfied with a standardized product because being different from others is not desirable in a high uncertainty avoidance country. We posit that the tendency to seek a mass customized product designed for himself/herself will be weaker in a high uncertainty avoidance country than in a less uncertainty avoidance country. Therefore, Hypothesis 1b is offered as:

Hypothesis 1b: Consumer intentions to

purchase mass customized products online will be stronger for consumers of a less uncertainty avoiding country than for those of a more uncertainty avoiding country.

Power distance is the extent to which a society accepts the fact that power is distributed unequally (Hofstede, 1980). In societies with a high degree of power distance, status and age are very important and generally people tend to be less innovative. It was found that the coefficient of innovation was significantly lower in countries with high power distance (Yaveroglu and Donthu, 2002).

Power distance is related to conservatism and maintaining the status quo (Steenkamp, 2001). We posit that consumers will be less open to new ideas and products in high power distance countries. Consumers of a high power distance country are less likely to seek a mass customized product because a customized version will look new and different from a standardized product. Therefore, Hypothesis 1c is offered as:

Hypothesis 1c: Consumer intentions to purchase mass customized products online will be stronger for consumers of a less power distant country than for those of a more power distant country.

Masculinity indicates the degree to which

a society values assertiveness, achievement, and the acquisition of wealth (Hofstede, 1980). In masculine cultures, achievement and success are more important than caring for others, and improving the overall quality of life (Hofstede, 1980). A largely symbolic means of demonstrating achievement is by having the latest and most novel possessions (Yeniurt and Townsend, 2003). Having a customized product will help a consumer to demonstrate his/her achievement in this regard. The implication is that consumers are more likely to seek a mass customized product in more masculine countries than in less masculine countries. Therefore, Hypothesis 1d is offered as:

Hypothesis 1d: Consumer intentions to purchase mass customized products online will be stronger for consumers of a more masculine country than for those of a less masculine country.

2.3 Mass Customization and Product Type

As a retail channel, the Internet provides both marketers and consumers many benefits over alternative channel formats. Most notably, it eliminates time and space barriers, and facilitates efficient consumer information search (Hoffman and Novak, 1996; Peterson, Balasubramaniam, and Bronnenberg, 1997). Its major limitation is

that Internet shoppers cannot physically experience a product at the time of purchase. Indeed, the best-selling products on the Internet are products that can be digitized or that are dominated by search attributes (Rosen and Howard, 2000). This Internet sales pattern is consistent with the link between product characteristics and retail store patronage that has been noted in conceptual and empirical research (Alba et al., 1997; De Figueiredo, 2000; Sheth, 1983; Vijayarathy, 2002).

Search goods are products and services that are easy for a consumer to evaluate prior to purchase. A consumer can predict benefits and value from a search good with high accuracy because a search good provides few surprises (Hanson, 2000; Nelson, 1970, 1974). Experience goods tend to be difficult to evaluate until they are purchased and consumption begins. Experience goods are likely to be highly subjective, with personal taste being the most important determinant of usefulness.

The degree of imperfect observability of product attributes is related to a consumer's information costs and perceived risks (Erdem, Swait and Louviere, 2002). Many products can be ranked according to relative attribute observability. For example, calorie content may be a search attribute for frozen juice concentrate, and the observability of the level of that attribute should be perfect

if consumers expend some information costs to read and process information printed on containers. However, consumers can learn the taste of a juice only after trial.

The Internet significantly facilitates consumer search but does not enable consumers to directly experience a product before purchase, so it is more appropriate for selling search goods than experience goods (Citrin et al., 2003; Klein, 1998). A consumer can obtain full information on the dominant attributes of a search good without direct experience. The qualities of an experience good can not be determined by the consumer prior to purchase or use (Nelson, 1970, 1974). For experience goods, information search for dominant attributes is more costly or difficult than direct product experience (Klein, 1998; Nelson, 1970, 1974).

Choi, Han and Lee (2004) have examined if product type (search versus experience) moderates the relationship between consumer visit behavior and actual purchase. The authors have found that the moderating effect is larger for search goods than for experience goods. That is, consumers' web site visit is related to information search, however, not related to actual purchase in experience goods.

Girard, Silverblatt, and Korgaonkar (2002) found that consumers are more willing to shop from Internet retailers for search

products than experience products. Would mass customization make a difference in consumer willingness to purchase search versus experience goods in online settings? We would expect mass customization to make it more likely that search products would be purchased online; besides providing consumers specific information about important attributes, mass customization ensures that the attribute specifications match consumer preferences. The potential impact of mass customization on purchase intention for experience products is less clear. Mass customization does not let the customer try or use a product before purchase, except for products that can be digitized. The costs associated with buying customized experience products online are also likely to be higher than the costs associated with buying customized search products. Buying customized products generally involves non-monetary costs such as additional time, effort, and uncertainty as well as monetary costs like price premium (Broekhuizen and Alsem, 2002). Consumers are likely to spend more time and effort in evaluating experience products than search products. Participation in the process of mass customization, may however, contribute toward making the consumer more comfortable with buying experience goods online. The evaluation of experience goods can be highly subjective and personal

taste plays an important role in their purchase. Participation in the mass customization process may produce psychological benefits that might make consumers more comfortable in buying an experience product online than they would be otherwise. For example, consumers are more satisfied when they are allowed to specify their attribute preferences in selecting products than when they are not (Huffman and Kahn, 1998). Participation in the mass customization process can also provide consumers some sense of control over the exchange process. Van Raaij and Pruyn (1998) suggest that an increase in the sense of control should make customers more willing to buy a product. The potential beneficial consequences of mass customization for experience products, however, appear to be limited as compared to the potential beneficial consequences of mass customization for search products. Accordingly, Hypothesis 2 is offered as:

Hypothesis 2: Consumers' intentions to purchase mass customized search products online will be stronger than their intentions to purchase mass customized experience products online.

2.4 Mass Customization and Price

It has been suggested that customers are

often willing to pay a premium for customized products because their needs are better met (Broekhuizen and Alsem, 2002). If a company facilitates the creation of a co-production process to produce a product tailored to the customer's need and the product adds great value, the price becomes a less important factor (Wind and Rangaswamy, 2001). There is less incentive for customers to comparison shop based on price.

Similarity across competing products or brands is reduced with the mass customization, and making a direct price comparison will be more difficult for consumers. Consumer search cost for price is generally low in online (Bakos, 1997), however, the cost increases in this case. Consumer search cost for price and that for product attributes, such as product quality is a key concept in online price research. Lynch and Ariely (2000) found that price competition is reduced when the cost of searching for prices is high relative to the cost of searching for product attributes. Similarly, Zettelmeyer (1998) explores a scenario where firms compete with two distribution channels and control the amount of product information provided to consumers who are uncertain about their preferences. The author shows that firms can achieve finer consumer segmentation by strategically influencing search costs.

However, if the price goes up beyond a

certain range, customers may begin to substitute less customized products. Consumers search for information until the marginal cost of obtaining a unit of information is equal to the marginal benefit of possessing a unit of information (Urban et al., 1993). Thus price search will increase as the benefits of search increase. The benefits of consumer search should increase as the price of a seller's customized product goes up.

Also, the conventional wisdom is that the Internet lowers the cost of distribution and the cost of consumer search, thereby lowering barriers to entry and intensifying price competition (Alba et al., 1997; Bakos, 1997). The convenience, time-saving aspects, and product matching features of online markets can increase the consumers' motivation to search price information, indicating that consumers are becoming more sensitive to price (Jiang, 2002).

We should consider the generally negative implication of higher price as well as the positive implication of consumer willingness to pay premium price for and the reduced price comparison by mass customization. Therefore, Hypothesis 3 is offered as follows:

Hypothesis 3: A price premium up to some level will not affect customers' purchase intentions for mass customized products online.

III. RESEARCH METHODS

3.1 Experimental Stimuli

A pretest was conducted to identify both product stimuli for search and experience products and important product attributes to be customized. Forty seven undergraduate students at a large New Zealand university participated in the pretest.

Subjects were provided with four products including computer desks, desk lamp, sunglasses, and blue jeans. These products were selected because they are used extensively by college students and have been subjects of study in other research. The subjects were asked to rate the products on three items intended to capture the difference between search and experience products: 1) The quality of (name of product) can be judged by web-based information; 2) the quality of (name of product) can be judged without physical examination; and 3) the quality of (name of product) can be judged without trial use. The responses used a seven-point Likert scale (1 = Do not agree at all, 7 = Agree completely).

The mean rating on the three items to identify search and experience products was highest for the computer desks and lowest for sunglasses. We thus selected the computer desks as the experimental stimulus for the

search product and sunglasses for the experience product. Computer desks (CD) and sunglasses (SG) were significantly different from each other in terms of each item's score and average score of the three items (CD = 5.93, SG = 4.67, $t=5.16$, $p<.001$).

For each product in the set of products, subjects were provided with eight product attributes and asked to rate the importance of these attributes for purchase. The product attributes were identified using *Consumer Reports* and student input.

To become a meaningful customization the product or service should provide attributes that customers truly care about (Pine, 1993). Thus, product attributes of the two products should be important and the two sets of product attributes should not be different from each other in terms of perceived importance. Construction, height, width, and CPU storage were selected for CD and lens material, lens diameter, nose bridge length, and frame material were selected for SG. Respondents were asked to evaluate the importance of the attributes in purchasing the products. The average score of the four attributes was 5.29 for CD and 5.31 for SG, and there was no significant difference between them ($F=0.004$, $p=.94$).

3.2 Experimental Design and Procedure

In this study culture is coded by the

subject's nationality and hence is a within-subjects factor. Product type factor has two levels, that is, computer desks as a search product and sunglasses as an experience product. Price has three levels: same as, 15% higher, and 30% higher than a standard price. The price levels were set keeping in mind customer perceptions of value. Assuming customized products better match customers' needs, customers should be willing to pay a premium price for them. They can obtain maximum value from mass customized products if they are available at a price similar to the standardized mass produced product. Thus, the same price level and two price levels at intervals of a 15 percent increase beyond the standardized price were selected.

Subjects were assigned randomly to one of the six between-subjects, experimental conditions. Subjects were told that an Internet shopping mall was evaluating its mass customized products on a small scale. They were asked to assume that they happened to find an information window while surfing this Internet shopping mall. They were shown an announcement offering customers a customized computer desks (sunglasses). Then, subjects were shown an ad manipulation of product type and price where they could choose from different specifications for four important product attributes. Appendix 1 shows the ad for the sunglasses.

Subjects assigned to the computer desks conditions could make choices regarding construction, height, width, and CPU storage. Subjects assigned to the sunglasses conditions could make choices regarding lens material, lens diameter, nose bridge length, and frame material. The delivery information, free delivery in five working days, was the same for all experimental conditions.

3.3 Measures and Subjects

The dependent variable, purchase intention, was measured by adapting items used in previous research (Dodds, Monroe, and Grewal, 1991). The four items of the scale were: 1) I will purchase the computer desks (or sunglasses), 2) Given a choice, my friends will choose the computer desks (or sunglasses), 3) There is a strong likelihood that I will buy the computer desks (or sunglasses), and 4) I would like to recommend the computer desks (or sunglasses) to my friends. All four items were ranked on a seven-point Likert scale (1: Do not agree at all, 7: Agree completely).

To assign scores for each of the four cultural dimensions the subject was asked to name the country that she/he was born. The cultural dimension scores for the named countries were taken from Hofstede (1983). The foreigner respondents residing in New Zealand for five or more than five years

were classified as New Zealand residents. Some studies report that immigrants are acculturated as they reside in a host country for more than 3 years (e.g., Sonderregger and Barrett, 2004). We adopted a more conservative rule because a few studies have found little or no relationship between time of residence and acculturation (e.g., Gentry, Jun and Tansuhaj, 1995)

A total of 116 undergraduate and graduate students of a large New Zealand university participated in this research. In terms of nationality of origin 35 students were Chinese (30.2%), 33 were New Zealanders and no other nationality took more than 5 percent of the sample. The total number of nationality of origin was 30 in this study.

IV. RESULTS

4.1 Reliability

Cronbach alpha value was .86 for the four-item purchase intention scale and the value indicates that the scale has satisfactory reliability. The average score of the scale was computed and used in statistical analysis.

4.2 Manipulation Checks

We compare the importance ratings of the

four product attributes for the computer desks (CD) and for the sunglasses (SG) to check the manipulation for product attribute importance. There is no difference on the perceived average importance of the attributes for the two products (CD=5.27, SG=5.10, F=1.31, p=.25). Nor do the two products differ from each other on any pair of individual attributes. Therefore, we can conclude that any effect on the dependent variable is not attributable to differences in the importance of the product attributes for the two products.

The computer desks and the sunglasses were rated differently from each other on each of the three items of product type manipulation: 1) can be judged by web-based information (CD = 5.17, SG = 4.50, F = 7.45, p < .001); 2) can be judged without physical examination (CD = 4.88, SG = 4.30, F = 7.56, p < .001); and 3) can be judged without trial use (CD = 4.80,

SG = 4.29, F = 6.28, p < .01). The two products were also different from each other on the average score of the three items (CD = 4.95, SG = 4.36, F = 8.98, p < .001). These results indicate that the product type manipulation was successful.

4.3 Preliminary Analysis on Culture Effects

A regression analysis was performed with purchase intention as the dependent variable, and the four cultural dimension scores, taken from Hofstede (1983), as independent variables (Model 1 of Table 1). Only individualism dimension had a significant regression coefficient among the four dimensions ($\beta=.42$, $t=1.96$). Almost the same result was obtained when each observation was coded as either high or low on each of the dimensions as in Hofstede (1980) and ANOVA was conducted.

Two factors emerged with having over 1

<Table 1> Regression Analysis Results

Model 1	Variables	Beta	t
Four dimensions as Independent variables (Model F=3.32, p<.05)	Individualism	.42	1.96*
	Power distance	-.29	-1.39
	Masculinity	.02	.20
	Uncertainty avoidance	-.07	-.72
Model 2	Variables	Beta	t
Two factors as independent variables (Model F=3.29, p<.05)	Factor 1	.22	2.41*
	Factor 2	-.08	-.87

*:Statistically significant at p<.05

eigenvalue when the four dimensions were factor analyzed using principal component analysis. As shown in Table 2 the first factor consists of individualism, power distance, and masculinity and explains about 55 percent of total variance. The second factor contains only uncertainty avoidance dimension and explains about 26 percent of total variance.

Another regression analysis was performed with purchase intention as the dependent variable and factor scores of the two factors as independent variables (Model 2 of Table 1). The first factor had a significant regression coefficient at $p < .05$, whereas the second factor did not have a significant coefficient.

The two regression analyses indicate that individualism dimension represents the largest effect of the four cultural dimensions on purchase intention. We may conclude that the other three dimensions do not significantly affect consumers' purchase intention or at least their direct effect on

purchase intention is not as large as that of individualism. On the basis of the preliminary analyses only individualism dimension, among the four dimensions, is to be used for further analysis.

4.4 Tests of Hypotheses

Table 3 shows the results of an analysis of variance model where individualism dimension, product type and price level are the factors and purchase intention is a dependent variable. For each observation's country of origin individualism dimension score was taken from and coded as either high or low as in Hofstede (1980, 1983).

The overall model is statistically significant ($F = 2.76, p < .005$). As main factors the individualism dimension of national culture is significant ($F = 3.89, p < .05$) and the product type is significant ($F = 5.08, p < .05$). However, the price factor is not significant at $p < .05$. As an interaction effect the individualism dimension by price

〈Table 2〉 Factor Analysis Results: Standardized factor loadings and eigenvalues

Variables	Factor	
	1	2
Individualism	.93	.14
Power distance	-.88	-.30
Masculinity	.68	-.36
Uncertainty avoidance	.10	.91
Eigenvalue (% of variance)	2.18(54.61)	1.02(25.72)

is significant ($F = 3.04, p < .05$) and individualism dimension by product type and price is significant ($F = 3.12, p < .05$).

Table 4 shows cell means and standard deviations and Table 5 shows marginal means. Combined with the preliminary analysis ANOVA results indicate that individualism dimension of culture significantly affects consumers' purchase intention for online, customized products. As predicted by Hypothesis 1a consumers' purchase intention is greater in high (3.89) than low individualism condition (3.43). Therefore Hypothesis 1a is supported, whereas Hypotheses 1b, 1c, and 1d are not supported.

Hypothesis 2 regarding product type effect is supported. As predicted purchase intention is greater in search product (computer desks: 3.92) than experience product (sunglasses: 3.40).

As shown in Table 3 price factor is not significant and a multiple comparison test does not indicate difference in any pair of

the three price levels. Thus, Hypothesis 3 suggesting no price effect up to some level is supported. We can note a recognizable pattern in marginal means in Table 5, although the means are not significantly different from each other. Consumers' purchase intention goes up as the price charges a 15 percent premium and then goes down as the price charges a 30 percent premium.

The interaction terms show an interesting pattern. It seems that the three-way interaction effect is significant mostly due to the significant individualism by price effect. In Table 4 (See also Figure 1) we can note that for sunglasses purchase intention of high individualism consumers is greater than that of low individualism consumers in the same price condition. (3.22 vs 3.08) and 15 % higher condition (5.00 vs 2.69). However, the order of magnitude is reversed in 30% condition (3.00 vs 3.40). The same pattern is observed for computer desks.

<Table 3> Analysis of Variance Results

Source	Sum of Squares	F	p
Model	40.00	2.76	<.005
Individualism	5.12	3.89	<.05
Product Type	6.68	5.08	<.05
Price	3.66	1.39	.25
Individualism x Product Type	1.21	0.92	.33
Individualism x Price	7.99	3.04	<.05
Product Type x Price	1.43	0.54	.58
Individualism x Product Type x Price	8.21	3.12	<.05

<Table 4> Means and Standard Deviations

Individualism	Product Type	Price	Mean	Standard Deviations
High	Computer Desks	Same	4.33	.97
		15% Higher	4.12	.64
		30% Higher	3.67	1.32
		Total	4.09	1.02
	Sunglasses	Same	3.22	.83
		15% Higher	5.00	.81
		30% Higher	3.00	1.00
		Total	3.36	1.12
Low	Computer Desks	Same	3.60	.84
		15% Higher	4.00	1.00
		30% Higher	3.81	1.07
		Total	3.77	.95
	Sunglasses	Same	3.08	1.83
		15% Higher	2.69	1.31
		30% Higher	3.40	1.14
		Total	2.96	1.49

<Table 5> Marginal Means

Individualism	Mean	Product Type	Mean	Price	Mean
High	3.89	CD	3.92	Same	3.56
Low	3.43	SG	3.40	15% Higher	3.95
				30% Higher	3.47

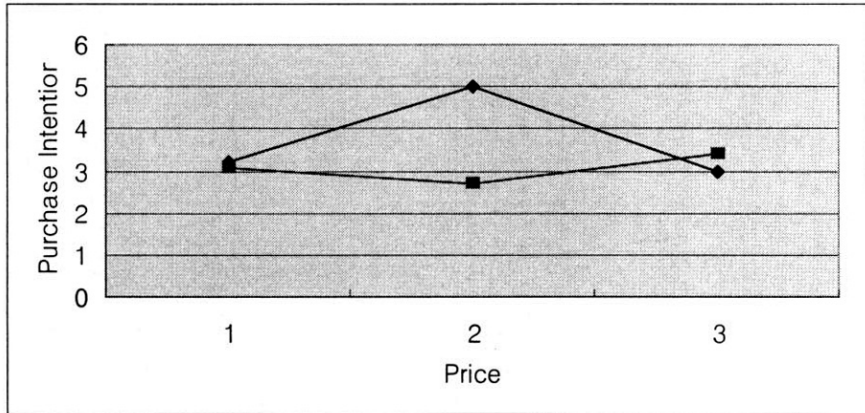
V. DISCUSSION AND CONCLUSION

There are three primary findings in this research. First, individualism dimension of national culture significantly affected consu-

mer purchase intentions for both the customized computer desks and sunglasses. It was found that consumers of individualistic countries are more likely to purchase customized products online than those of collectivistic countries. Also, indivi-

<FIGURE 1> INDIVIDUALISM × PRICE INTERACTION PATTERN FOR SUNGLASSES:

■ : Low Individualism Condition ◆ : High Individualism Condition



dualism dimension is the only significant factor among the four cultural dimensions in explaining consumer purchase intentions for online, customized products.

This result is not surprising since extant research has reported the significant impact of individualism in various consumer behaviors such as consumer attitudes and preferences, product and service usage, and diffusion of new products (e.g., Aaker, 2000; Gentry, Jun and Tansuhaj, 1995; Suh and Kwon, 2002; Takada and Jain, 1991). This research expands existing knowledge in that it empirically examines cross-cultural effects on consumers' response to mass customized products. The result implies that firms may attempt to reach consumers in more individualistic countries as a primary target when marketing

customized products online. For example, New Zealand, Australia and U.S. should be better than China, Japan and Korea as initial targets.

However, the significant individualism by price interaction indicates that firms should consider varying price sensitivities to mass customized products across different cultures. Consumers in more individualistic countries tend to respond to the products more favorably than those in more collectivistic countries when the customized products charge the same price as or a moderate price premium up to 15% of a standard product. However, their purchase intentions decrease considerably and are lower than those of more collectivistic consumers when firms charge up to 30% price premium. Interestingly, purchase intentions of con-

sumers in more collectivistic countries do not decrease even at this price level. They tend to more tolerate a higher price to obtain customized benefits.

The second primary finding is that product type effect was significant. This result is consistent with extant research indicating that internet retailing is more appropriate for selling search goods than experience goods (Citrin et al., 2003; Girard, Silverblatt, and Korgaonkar, 2002; Klein, 1998). This result implies that the potential beneficial consequences of mass customization for experience products are limited as compared to those of mass customization for search products.

To exploit the marketing potential of the Internet, the challenge for marketers of experience goods is to make the buyers of experience goods comfortable with buying such products online. It seems that providing choice options is not attractive enough to make customers more willing to buy experience products online. Extra efforts may need to be exercised to help consumers evaluate the qualities of an experience good prior to purchase or use.

Third, price did not significantly impact consumer purchase intentions for both the customized computer desks and sunglasses. Purchase intentions were not significantly different across the three price levels. In fact, as shown in Table 5 purchase inten-

tions increased with the 15 percent price premium, although declined in response to the 30 percent premium.

This result has two implications for the pricing of mass customized products. First, firms need to determine the increase in customer value that their customization creates and the price premium consumers would be willing to pay for the incremental value. Second, that consumers are likely to pay more for the better match provided by a customized product has important ramifications for the bargaining power between a firm and its customers. A firm loses some pricing power when it is marketing online because the Internet reduces information asymmetry between the customer and the firm; the buyer gains power (Murthi and Sarkar, 2003). The insignificant price effect we find indicates that mass customization might be an effective way to counter a firm's loss of pricing power in online settings.

It is especially beneficial to a firm when it can charge a price premium for mass customized products, but not incur disproportionate costs for the service. Technological advances have made it possible to produce customized products at costs similar to standardized products (Hart, 1995). Therefore this issue should be considered even before deciding standardization versus customization in approaching customers around the world through internet.

There are some limitations to our research, mainly that it is based on a laboratory experiment involving student subjects. It suffers from the limitations associated with laboratory experiments using student subjects, and the findings may not be generalizable to situations beyond those specified in its design.

Only two products that are familiar to students were examined and due to this limitation we cannot exclude product category-specific, idiosyncratic effects in this research. Also, only one product was employed to manipulate each of search and experience product. Future research can examine the impact of mass customization using different search and experience products and different product attributes.

Two levels of price premium, that is, 15 percent and 30 percent were examined and we might miss certain response patterns in other price ranges. Future research can examine the impact of mass customization using more diverse price levels.

Future research needs to collect data from multiple countries and compare results among different countries. In this research subjects were originally from 30 different countries. However, there may be a bias in this sample because all the subjects are currently staying in New Zealand.

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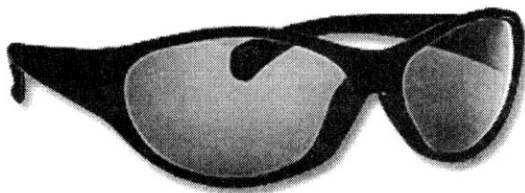
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<Appendix 1>: A Sample Experimental Manipulation

“ Get the Sunglasses Right for You”

Developed by Top Manufacturer!



Priced Only 15%
Higher than a
Standard Product!

Free Delivery
In Five Working Days

Select freely from the following options

- ◆ Lens Material (Tempered Glass-Polycarbonated Plastic)
- ◆ Frame Material (Metal-Plastic)
- ◆ Lens Diameter (10 choices from 48mm to 62mm)
- ◆ Nose Bridge Length (5 choices from 13mm to 17mm)

대량맞춤제품에 대한 구매의도: 문화와 제품유형 및 가격의 영향

문준연*

요 약

이 연구는 문화와 제품유형 및 가격이 소비자의 대량맞춤제품에 대한 구매의도에 영향을 미치는지 분석하였다. 관련 문헌을 토대로 세 가지 가설이 설정된다. 첫째, 소비자의 구매의도가 국가문화의 네 가지 차원(개인주의, 불확실성 회피성향, 권력 격차, 남성주의)에 의해 영향을 받는다는 것이다. 둘째, 소비자의 구매의도가 대량맞춤 경험재에 비하여 대량맞춤 탐색재의 경우에 더 높다는 것이다. 셋째, 대량맞춤제품의 가격이 표준제품에 비하여 일정 수준 상승하여도 소비자 구매의도가 감소하지 않는다는 것이다.

이 연구의 주요 결과는 다음과 같이 요약된다. 첫째, 국가문화의 차원 중 개인주의가 대량맞춤제품의 구매의도에 유의적 영향을 미친다. 둘째, 가설에서 제시된 것처럼 제품유형은 유의적 영향을 미치고, 가격은 유의적 영향을 미치지 않는다. 셋째, 개인주의와 가격의 상호작용효과가 유의적으로 나타나 가격효과의 해석에 주의를 기울여야 한다.

마지막으로 연구 결과가 제시하는 함의와 연구의 한계 및 향후 연구방향이 제시되었다.

주제어: 대량맞춤화, 대량맞춤제품, 개인화, 문화, 제품유형, 가격효과, 구매의도, 실험디자인

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