

# Gender and Internet Consumers' Decision-Making

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## ABSTRACT

The purpose of this research is to provide managers of shopping websites information regarding consumer purchasing decisions based on the Consumer Styles Inventory (CSI). According to the CSI, one can capture what decision-making styles online shoppers use. Furthermore, this research also discusses the gender differences among online shoppers. Exploratory factor analysis (EFA) was used to understand the decision-making styles and discriminant analysis was used to distinguish the differences between female and male shoppers. The result shows that there are differences in purchasing decisions between online female and male Internet users.

## INTRODUCTION

ACCORDING TO A SURVEY conducted by a Taiwanese government agency, Institute for Information Industry (III), there were 9.05 millions Internet users with active access accounts in Taiwan in September 2004.<sup>1</sup> Another investigation conducted by the Taiwan Network Information Centre (TWNIC) found that Taiwan's Internet users above 12 years old had reached 12.74 millions (more than 60% of the age group) in July 2004.<sup>2</sup> Although the population of Taiwan's Internet users are 4.3% of the Asia region (the Asia region Internet users are 32.6% of the whole world), the Internet penetration of Taiwan is 50.9%, which ranks fifth.<sup>3</sup> The importance of the Taiwan's Internet users should not be ignored.

Increased time pressure on both genders, especially on women, has been cited as one of the principal advantages of catalog and online shopping. The stereotype of an Internet shopper as a youngish, well-educated man<sup>4</sup> has been broken gradually. Women were significantly less likely than men to use the Internet at all in the mid-1990s, but that gap had disappeared by 2000. Female Internet users were significantly increased since 1992.<sup>5-7</sup>

As reported by Nielsen/NetRatings, there are 35 millions of female Internet users in Europe, which is almost 42% of European Internet users. Likewise, other Western countries exhibit about the same level of female users.<sup>8</sup> The same phenomenon of female users being significantly increased can also be found in Asia-Pacific region.<sup>9</sup> Therefore, this study pays more attention to the gender differences.

Researchers of online consumer behavior are interested in knowing the motivation of consumers. Therefore, this research employs exploratory factor analysis to find consumers' decision-making styles using the Consumer Style Inventory (CSI) proposed by Sproles<sup>10</sup> and Sproles and Kendall.<sup>11</sup>

### *Literature review*

*Decision-making styles.* Decision-making style of a consumer is defined as a mental orientation characterizing a consumer's approach to making choices. It has cognitive and affective characteristics.<sup>11</sup> Extant research in this field has identified three approaches to characterizing consumer styles: (1) the Consumer Typology Approach; (2) the Psychographics/Lifestyles Approach; and (3) the Consumer Characteristics Approach. The Consumer Characteristics Approach is one of the most

promising as it deals with the mental orientation of consumers in making decisions.<sup>12</sup> This approach is based on Sproles's study, which identified 50 items related to this mental orientation.<sup>10</sup> Afterward, Sproles and Kendall reworked this inventory and developed a more parsimonious scale with 40 items; these items were named the "Consumer Style Inventory" (CSI). Many researchers cited this research when discussing consumers' decision-making styles.<sup>13-20</sup> Several of these studies found that female and male have different decision-making styles.<sup>17-19</sup>

*Gender differences in the Internet.* Gender differences in adopting the Internet may exist because of the characters of women and men such as socioeconomic status, which effects computer and Internet access and use.<sup>5,21-24</sup> In the past, women resisted the Internet perhaps because much of its content was directed at attracting and entertaining men. More men than women had web pages, and read and posted to newsgroups more frequently.<sup>25</sup> A growing number of women are getting online and are attracted to online books, medical information, cooking ideas, chatting, and something interesting.<sup>26</sup> A typical website for women is iVillage whereas a typical one for men is AskMen.<sup>27</sup> Therefore, there must be some differences while male and female online shoppers make decisions.

## METHODS

### *Instrument and data collection*

Translation and slight changes such as adding the phrase "online shopping" are used to prepare the 40-item CSI scale for the investigation. The 40-item CSI is a five-point scale from strongly disagree to strongly agree are shown as Table 1. This study uses the Internet questionnaire and the address of the questionnaire is posted on BBS and search engine such as Yahoo. Javascript programming was applied to it to check for missing responses. Moreover, letters of invitation were also sent by e-mail to ask for participation. All the participants were required to have experiences of shopping online. The total sample was 472, which consisted of 240 females and 232 males. The age of samples is about 20-30 years old, and education of them is almost above college. Demographics of online consumers are similar to the innovator and/or early adopter in product diffusion theory. They tend to be younger and with above average education.<sup>28</sup>

### *Statistical analysis*

For the sake of capturing online shoppers' decision-making styles, exploratory factor analysis (EFA) is employed. Exploratory factor analysis is used because results of past research showed that serious cross-loading existed.<sup>16</sup> Additionally, we have doubts whether the gender differences cause different decision-making styles.

The method we adopt to recognize gender differences is discriminant analysis. EFA and discriminant analysis are executed by SAS 8.2.

## RESULTS

### *Reliability and validity*

In social science research, one of the most widely-used indices of internal consistent reliability is Cronbach  $\alpha$ .<sup>29</sup> Reliability coefficient of the constructs in this research are all more than 0.7<sup>30</sup> (Table 2), so the questionnaire we use has internal consistent reliability. Besides internal consistent reliability, we should consider the validity of the questionnaire. The questionnaire has content validity because we adopt from CSI which was suggested by Sproles and Sproles and Kendall.<sup>10,11</sup>

### *Results of exploratory factor analysis*

EFA is performed to categorize online shoppers' decision-making styles. Consistent with Sproles and Kendall, principal components analysis with varimax rotation is used. Because principal components analysis does not produce a single solution but leaves the decision about the right number of factors largely to researchers, we choose eigenvalue-one as criterion to decide the number of factors.<sup>31</sup> Finally, six factors were classified. The results of EFA and the characteristics of each decision-making style are shown in Table 2.

- *Factor 1: Perfectionism consciousness.* Internet shoppers value the quality of products. When it comes to purchasing products, they try to get the very best or perfect choice. In general, they usually try to buy the best overall quality.
- *Factor 2: Brand consciousness.* Internet shoppers value the brand of products. The well-known national brands are best for them to choose, and they usually think the more expensive brands are their best choice.
- *Factor 3: Novel-fashion consciousness.* Internet shoppers who are early adopters like to buy the fashionable and novel goods. They keep their

TABLE 1. FORTY-ITEM CONSUMER STYLES INVENTORY SCALE (MODIFIED)

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1. Getting very good quality is very important to me.
  2. When it comes to purchasing products, I try to get the very best or perfect choice.
  3. In general, I usually try to buy the best overall quality.
  4. I make special effort to choose the best quality products.
  5. I really don't give my purchases much thought or care.
  6. My standards and expectations for products I buy are very high.
  7. I shop quickly, buying the first product or brand I find that seems good enough.
  8. A product doesn't have to be perfect, or the best, to satisfy me.
  9. The well-known national brands are best for me.
  10. The more expensive brands are usually my choices.
  11. The higher the price of a product, the better its quality.
  12. Nice online stores offer me the best products.
  13. I prefer buying the best-selling brands.
  14. The most advertised brands are usually very good choices.
  15. I usually have one or more outfits of the very newest style.
  16. I keep my wardrobe up-to-date with the changing fashions.
  17. Fashionable, attractive styling is very important to me.
  18. To get variety, I shop different stores and choose different brands.
  19. It's fun to buy something new and exciting.
  20. Online shopping is not a pleasant activity to me.
  21. Going online shopping is one of the enjoyable activities of my lifestyle.
  22. Shopping the online stores wastes my time.
  23. I enjoy online shopping just for the fun of it.
  24. I make my online shopping trips fast.
  25. I buy as much as possible at sale prices.
  26. The lower price products are usually my choice.
  27. I look carefully to find the best value for the money.
  28. I should plan my shopping more carefully than I do.
  29. I am impulsive when shopping.
  30. Often I make careless purchases I later wish I had not.
  31. I take the time to shop carefully for best buys.
  32. I carefully watch how much I spend.
  33. There are so many brands to choose from that I feel confused.
  34. Sometimes it's hard to choose which online stores to shop.
  35. The more I learn about products, the harder it seems to choose the best.
  36. All the information I get on different products confuses me.
  37. I have favorite brands I buy over and over.
  38. Once I find a product or brands I like, I stick with it.
  39. I go on the same online stores each time I shop.
  40. I change brands I buy regularly.
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wardrobe up-to-date with the changing fashions. Fashionable and attractive styling is very important to them.

- *Factor 4: Confused by overchoice.* Internet shoppers are worry about much information about products. It means that all the information they get on different products confuses them. Too much information will distract them from right purchase decisions. The more they learn about products, the harder it seems to choose the best.
- *Factor 5: Brand-loyal consciousness.* Internet shoppers are brand loyal, and once they have favorite

brands they will buy over and over and stick with it.

- *Factor 6: Impulsiveness.* Internet shoppers are impulsive when buying, regret this impulsive shopping behavior, and feel they should plan more carefully before purchasing online than actually they do.

#### *Results of discriminant analysis*

Before discriminant analysis, we should test if the means have significant differences between the two

TABLE 2. TAIWAN ONLINE SHOPPERS' STYLE CHARACTERISTICS: SIX-FACTOR MODEL

<i>Factor</i>	<i>Factor Items</i>	<i>loadings</i>	<i>Cronbach <math>\alpha</math></i>
Factor 1 (perfectionism)	1. Getting very good quality is very important to me.	0.64	0.83
	2. When it comes to purchasing products, I try to get the very best or perfect choice.	0.77	
	3. In general, I usually try to buy the best overall quality.	0.80	
	4. I make special effort to choose the very best quality products.	0.75	
Factor 2 (brand)	6. My standards and expectations for products I buy are very high.	0.50	0.74
	9. The well-known national brands are best for me.	0.63	
	10. The more expensive brands are usually my choice.	0.70	
	11. The higher the price of a product, the better its quality.	0.56	
	13. I prefer buying the best-selling brands.	0.40	
Factor 3 (novel-fashion)	15. I usually have one or more outfits of the very newest style.	0.46	0.79
	16. I keep my wardrobe up-to-date with the changing fashions.	0.70	
	17. Fashionable, attractive styling is very important to me.	0.72	
	18. To get variety, I shop different stores and choose different brands.	0.61	
	19. It's fun to buy something new and exciting.	0.47	
Factor 4 (confused)	33. There are so many brands to choose from that I feel confused.	0.54	0.71
	34. Sometimes it's hard to choose which stores to shop.	0.48	
	35. The more I learn about products, the harder it seems to choose to best.	0.70	
	36. All the information I get on different products confuses me.	0.67	
Factor 5 (brand-loyal)	37. I have favourite brands I buy over and over.	0.67	0.76
	38. Once I find a product or brands I like, I stick with it.	0.69	
Factor 6 (impulsiveness)	29. I am impulsive when shopping.	0.52	0.74
	30. Often I make careless purchases I later wish I had not.	0.52	

populations (females and males) on six factors by one-way MANOVA firstly. The results show that six factors' mean have significant differences between two populations (Wilks'  $\lambda = 0.92$ ,  $F = 6.38$ ,  $p < 0.0001$ ). Secondly, we choose the factors by stepwise discriminant analysis that could obviously discriminate difference between females and males. The results indicate that only two factors, Factor 2 and Factor 3, could differentiate females from males significantly. Finally, we use Factor 2 (Brand consciousness) and Factor 3 (Novel-fashion consciousness) to implement discriminant analysis. Because of two populations, there is only one discriminate function ( $L = -0.29F2 + 0.33F3$ ), and this function can be employed to classify an unknown observation by discriminate score. The total classification error rate is 0.38. This error rate means that we could classify correctly by this discriminant function with 62% correct rate. Differences between females and males' decision-making styles indeed exist, especially in Brand and Novel-fashion consciousness decision-making styles. Figure 1 shows the distribution of two populations by box-and-whisker plot.

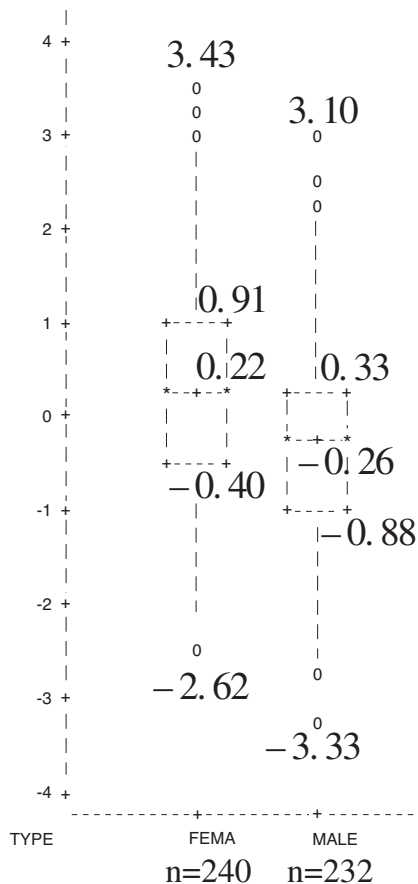


FIG. 1. Gender differences in decision-making styles (shown by box-and-whisker plot).

## DISCUSSION

According to the CSI, online shoppers can be categorized into six main decision-making styles: perfectionism consciousness, novel-fashion consciousness, confused by overchoice, brand consciousness, brand-loyal consciousness, and impulsiveness. Two categories in the work of Sproles and Kendal disappeared in our study: recreational and price-conscious consumers. This is because online shoppers tend to be programmed problem-solvers while making purchase decisions. When people adopt online shopping, they may have already thought it through carefully and get used to shopping through Internet. Shopping online is not thought of as a recreational activity. Besides, consumers may be willing to pay more for online shopping because of the convenience and timelessness of the Internet. Convenience thus offsets the price consciousness. When we compare the findings of this research with two non-online investigations on Chinese consumers,<sup>14,16</sup> we found significant differences. Consequently, consumers in cyberspace and non-online environment act differently to some degrees. Further researchers can use the six online shoppers' decision-making styles as segmentation variables to capture profiles of online shoppers.

Additionally, the gender differences among online shoppers indeed exist. The result shows that the differences rest with brand and novel-fashion consciousness. A female Internet consumer's decision-making is dominated by novel-fashion and a male Internet shopper's decision-making is dominated by brand. Managers of Internet shopping websites can focus on novel-fashion and brand issues for females and males, which may help managers to design a more suitable homepage and marketing mix.

Furthermore, cross-cultural issues of the Internet need to be mentioned. Because of the boundlessness of cyberspace, online consumers can order train or flight tickets, and print those "tickets" without mailing across two or more countries. If marketers want to be winners in the Internet marketing, they must create the marketing mix that suits online consumer's values.

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