

# COLLEGE STUDENTS' PERCEIVED ATTRIBUTES OF INTERNET WEBSITES AND ONLINE SHOPPING

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The purpose of this study was to examine perceptions of attributes of clothing retailers' Internet websites in relation to previous and intended future purchase from the websites. Survey data from 414 U.S. college students, non-married and aged 18-22 with online clothing shopping experience and favorite clothing websites were used. Five clothing website attributes were identified by factor analysis (i.e., product information, customer service, privacy/security, navigation, auditory experience/comparison shopping). Multiple regression results showed positive relationships between frequency of previous purchase from websites and perceived product-information, customer-service, and privacy-and-security attributes of the websites, and between future intended purchase from websites and perceived customer-service attributes of the websites. Implications were discussed for effective website design by clothing marketers and for consumer education of college students.

A growing percentage of U.S. consumers' shopping and purchasing over recent years have been taking place through the Internet. A related trend has been rapid expansion of retailers' direct marketing to consumers via the Internet, with sales growth outpacing traditional retailing (Burns, 2005; Levy & Weitz, 2001). The U.S. Census Bureau estimated online retail spending at \$47.8 billion in 2002 and projected \$130 billion by 2006 (as cited in Case & King, 2003). Online sales accounted for 6.5% of total retail sales in 2004, up from 5.4% in 2003, and were expected to account for 7.7% in 2005 (Burns, 2005). With the consumers' increased use of retail-

ers' Internet Websites for searching out product information and purchasing, the websites have become key tools for retailers to communicate with current and prospective customers and the attributes of a retailer's website are crucial for attracting shoppers to the site and convincing them to become or remain customers.

Consumers across the age spectrum shop online, but college students aged 18 to 22 have been identified as the Internet's "hottest" market and a prime source of future growth in online sales (Silverman, 2000). College students' yearly expenditures reach near \$200 billion (as cited in PROMO Xtra, 2003). They are heavy users

of the Internet and have more access to this medium than most other population segments (Jasper & Lan, 1992; Kim & LaRose, 2004; U.S. Department of State, 2002). According to Harris Interactive (2002), 92% of college students own a computer and 93% access the Internet. Their online spending exceeds that of any other demographic group in the U.S. (O'Donnell & Associates, LLC, 2004). Roemer (2003) noted that U.S. college students' online purchases came to \$1.4 billion in 2002 following a 17% increase over the previous three years. In this vein, it is important for retailers and consumer educators to better understand college students' online shopping behavior.

Despite e-tailing's rapid growth, conversion rates, the proportion of consumers who buy from websites out of all who visit them, remain low at only 4.9% (Kerner, 2005). According to the survey by Shop.org (2001), although 72% of Internet users search online for products at least once a month, this high level of search activity does not translate into similarly high purchase levels. A BizRate.com survey of 9,500 online shoppers revealed that as many as 55% abandoned their "shopping carts" before checkout and 32% did so at the point of sale (as cited in Shop.org., 2001). Recent studies also have shown that increasing numbers of consumers use the Internet for collecting product information while still relying on offline stores (e.g., department stores) for purchasing products (Doyle, 2003; Gray, 2005). Elliot and Fowell (2000) reported evidence of Internet shoppers' frustration with Websites, particularly in regard to navigability, customer service, checkout processes, and the

privacy and security of personal information provided online. A consumer survey cited in Greenspan (2003) showed that price, convenience, and selection are primary reasons for shopping online, but lags in delivery and lack of tactile gratification impede some consumers' online shopping.

Existing evidence from research showed the importance of website attributes to consumers' online shopping behavior, as well as certain attributes that help create demand for online purchasing and increase store transactions and sales (Lohse & Spiller, 1998; Swaminathan et al., 1999; Zellweger, 1997). Some research also noted that website attributes influence not only consumers' current purchases but also future purchase intentions (Watchravesringkan & shim, 2003). The purpose of this study is to examine the relationship between U.S. college students' perceptions of the attributes of clothing retailers' Internet websites and the students' previous and intended future purchase from the websites. Investigating online consumers' perceived attributes of websites and their online shopping behavior is important for e-tailers to develop an effective website that can attract online shoppers to the company's Internet website. In addition, this study will provide useful information for consumer educators to understand online college students' online shopping behavior and give guidance for them to be responsible consumers.

In this study, we focus on apparel websites because clothing is one of college students' most popular Internet shopping categories: 25% have bought clothing online (Case & King, 2003). These statistics align with other evidence that clothing

is among the top product categories bought online by young consumers (Gunter & Furnham, 1998; Ossorio, 1995; Stoneman, 1998). It may be no surprise that young consumers spend more online for clothing than most other goods in light of the critical role of clothing during adolescence (Elkind, 1978; MacGillivray & Wilson, 1997).

#### LITERATURE REVIEW AND RESEARCH HYPOTHESES

Existing evidence from research showed that store attributes affect consumers' decisions on where to shop and what to purchase in stores (Dailey, 1978; Scott, 1985). This notion applies to website store fronts. As consumers can obtain information about products and services or purchase them, the attributes of a website storefront become important in attracting customers and keeping them in the electronic marketplace. Previous studies showed that website attributes played a major role in consumers' online shopping behavior. Lohse and Spiller (1998) found that monthly traffic and sales at Websites were positively affected by the number of hyperlinks to other Websites and the provision of promotions, product lists, and customer service feedback. Park and Stoel (2002) found that rich descriptive information provided on websites results in increased online purchasing. Kim and Stoel (2004) analyzed the relationship between online shoppers' perceptions of clothing website quality and their satisfaction with those websites. They found a positive relationship between satisfaction with Websites and perceptions of informational fit-to-task, transaction capability,

and response time. Siddiqui et al. (2003) noted that appealing web page designs, easy navigation, guaranteed security, and good return policies encourage consumers to buy clothing online. Other research also has indicated that some keys to increase online sales are low prices and shipping costs, convenience, easy comparison shopping, timely delivery, information security, good customer service, and quick e-mail response (Lorek, 2003; Magee, 2003; Maloy, 2003; Retail Merchandiser, 2003; Rowley & Okelberry, 2000). A study by Watchravesringkan and Shim (2003) revealed that the more positive were consumers' attitudes toward Websites' processing speed and transaction security, the stronger their intentions to search online for clothing-product information and to buy clothing online. Similarly, in a study by Swaminathan et al. (1999), customer satisfaction and likelihood of repeat purchasing increased with the perceived ease of placing and canceling orders.

On the basis of previous research on the relationship between website attributes and consumers' online shopping behavior, the following hypotheses were proposed with respect to online shoppers' favorite clothing Websites.

*H1: Online shoppers' perceptions of the attributes of their favorite clothing Websites will be correlated with their previous purchase of clothing items from those Websites.*

*H2: Online shoppers' perceptions of the attributes of their favorite clothing Websites will positively affect their future intentions to purchase clothing from those Websites.*

## METHODS

### *Sampling and Data Collection*

The population for this research is 18 to 22 year old, non-married college students with online apparel shopping experience and favorite clothing Websites. We excluded married students under the assumption that theirs and non-married students' lifestyles are sufficiently distinct to result in different consumer behavior. Indeed, online purchases by married and non-married consumers have been shown to differ. The purchases of the married relate more to home life (e.g., garden supplies, educational software) and those of singles relate more to entertainment (Nielsen/NetRatings, 2003). In addition, the sample includes only Internet shoppers who responded affirmatively when asked whether they had favorite clothing Websites, that is, Websites they especially liked to visit for information about clothing products or stores and/or for buying clothing. Shoppers with favorite clothing Websites presumably have sufficient experience with online clothes shopping to have formed perceptions of clothing websites. A research sample that included respondents without favorite clothing websites might have produced spurious results arising from such respondents' inexperience with online clothes shopping.

A systematic random sample of 15,000 students was generated from the student directories of an eastern and a Midwest US university. Each student was sent a self-administered online questionnaire by e-mail twice, with the second mailing a week after the first. We received 1,344 completed questionnaires, for a 9.0% return rate. After eliminating those completed

incorrectly and from students who did not meet the sample criteria (i.e., non-married, 18 to 22 year old Internet shoppers with favorite clothing websites), 414 remained for analysis. Most of these (75%) were from female respondents. The respondents' age distribution was 7.2% aged 18, 22.0% aged 19, 28.7% aged 20, 25.6% aged 21, and 16.4% aged 22.

### *The Questionnaire and Research Variables*

The first part of the questionnaire completed by the respondents contained forced-choice questions on age, gender, and student and marital status, as well as questions on whether the respondents had favorite clothing websites and, if so, their names. The answers to those questions were used to screen out respondents who did not meet the sample criteria. The next part of the questionnaire measured perceptions of the attributes of the favorite clothing Websites using 36 statements that each described a Website attribute. Respondents were asked to indicate their degree of agreement, from "strongly disagree" (1) to "strongly agree" (4), with each of those statements as to whether their favorite clothing Websites had the described attribute. Of the 36 statements, 28 were modified from ones used in previous studies on Website attributes (Childers, Carr, Peck, & Carson, 2001; Liu, Arnett, & Litecky, 2000; Shim et al., 2001; Szymanski & Hise, 2000) and eight were developed by the researchers.

The questionnaire then asked about previous purchase of clothing items from favorite clothing Websites. Respondents were asked to indicate on a 4-point ordinal scale (1 = never; 2 = seldom; 3 =

occasionally; 4 = a lot) how frequently over the past 12 months they had purchased clothing from their favorite clothing Websites. The researchers developed previous-purchase question and framed the response format in broad relative terms because of potential difficulty in recalling exact information search and purchase frequencies in the past. The questionnaire's final part asked about future intentions to buy clothing from favorite clothing Websites. Respondents were asked to indicate on a 4-point Likert scale how likely (1 = extremely unlikely; 4 = extremely likely) they were to purchase clothing within the next 6 months from their favorite clothing Websites. The purchase-intention question was adapted from a question used by Shim et al. (2001). A time frame was incorporated at the advice of Ajzen and Fishbein (1980), who stressed the importance of specifying a time frame in questions about behavioral intentions.

#### DATA ANALYSIS AND RESULTS

Table 1 shows the mean values for the perceived attributes of favorite clothing websites. The tabulation shows that a high proportion of the respondents agreed or strongly agreed that their favorite clothing Websites had most of the described attributes. The response distribution for a few attributes, however, implies that some respondents perceived those attributes to be lacking in their favorite clothing Websites. Such attributes include some not found in many Websites (e.g., plays music). Also, the frequent perception that the favorite Websites did not offer many different brands may reflect the Website owners' focus on select brands. Although we did not

ask why certain Websites were considered favorites, the data in Table 1 suggest such possible reasons as the provision of favored brands, ease of use, and security for credit card numbers.

As to previous purchase over the past 12 months after finding clothing items at favorite clothing websites, 66.3% of the respondents said they had bought clothing respectively from their favorite clothing websites. As to purchase intentions within the next 6 months after finding clothing items at favorite clothing Websites, 62% of the respondents said they were likely or very likely to buy clothing, respectively, from their favorite clothing websites. The result for favorite clothing websites implies pervasive loyalty intentions among the research participants with respect to those websites.

Data analysis for testing the hypotheses was conducted in two stages. The first was a factor analysis of the data on perceived attributes of favorite clothing Websites to identify the number and nature of the underlying variables, or dimensions, within those data. In the second stage, the identified factors were used as variables in testing the research hypotheses.

#### *Factor Analysis*

Principal components exploratory factor analysis (EFA) with varimax rotation was used to identify the dimensions of the perceived attributes of favorite clothing Websites. Several parameters of the 36-item data set were examined before conducting the EFA in order to assess the appropriateness of the factor analysis. These included the anti-image correlation matrix, sphericity according to Bartlett's

TABLE 1: Mean Values for Perceived Attributes of Favorite Clothing Websites

Attributes	Favorite Websites
1. I can easily browse the website.	3.42
2. I can shop and place orders quickly.	3.43
3. It offers many different brands.	2.28
4. It offers many different products.	3.33
5. I can easily find what I want.	3.39
6. It gives information about the fabrics and care instructions for the products.	2.74
7. It shows all the sizes available for each product.	3.45
8. It shows all the colors available for each product.	3.49
9. It gives up-to-date information about products.	3.15
10. It tells the policy for shipping and handling of products.	3.40
11. Paying for products is easy.	3.42
12. I can track the status of my order.	3.18
13. I know that information I give about myself is kept confidential.	3.45
14. I can quickly receive items I order.	3.27
15. It gives detailed written descriptions of products.	3.20
16. It has the brands I like.	3.41
17. I can see and hear new things on the website.	2.78
18. It's fun to visit.	3.19
19. The different screens come up quickly.	3.15
20. The screens are not cluttered.	3.20
21. I can easily follow the search path on the screen.	3.28
22. I can easily compare competitors' products.	2.14
23. I can get personal sales assistance by e-mail or 1-800 phone numbers.	3.07
24. I can re-check that my order is correct.	3.31
25. I know my credit card number won't be stolen.	3.49
26. If I want to return a product I've bought on the website, I will get my money back quickly.	3.21
27. It uses sound to describe products.	1.82
28. It tells the prices of products.	3.56
29. It has good quality photos of products.	3.47
30. I can get to the website quickly.	3.43
31. I can return products if I am not happy with them.	3.38
32. Information I provide is confidential.	3.48
33. It tells about follow-up services.	2.92
34. It plays music.	1.85
35. It truthfully shows the color of the products.	3.35
36. It has a sizing chart.	3.26

*Note.* The possible range of the score for each item is 1- 4.

test, and the Kaiser-Meyer-Olkin measure of sampling adequacy (Hair et al., 1998). The results on these parameters indicated that the data set was suitable for factor analysis. According to the criteria set for

the EFA, only items with rotated factor loadings of 0.50 or more and only factors with eigenvalues greater than 1.0 were retained. To ensure only one dimension in each identified factor, any item loading on

**TABLE 2: Factor Solution on Perceived Attributes of Favorite Clothing Websites**

Website Attribute Factors	Item	Factor Loading	Percent of Variance Explained	Cronbach Alpha
Total			63.0	.86
<b>Product Information</b>	It shows all the colors available for each product.	.86	16.8	.85
	It shows all the sizes available for each product.	.81		
	It tells the prices of products.	.70		
	It gives up-to-date information about products.	.64		
	It has good quality photos of products.	.62		
	It truthfully shows the colors of the products.	.60		
<b>Customer Service</b>	I can return products if I am not happy with them.	.75	13.3	.78
	I can get personal sales assistance by e-mail or 1-800 phone numbers.	.69		
	If I want to return a product I've bought on the website, I will get my money back quickly.	.65		
	I can re-check that my order is correct.	.64		
	I can track the status of my order.	.59		
<b>Privacy and Security</b>	I know that information I give about myself is kept confidential.	.86	11.9	.89
	I know my credit card number won't be stolen.	.82		
	Information I provide is confidential.	.81		
<b>Navigation</b>	The screens are not cluttered.	.74	11.2	.72
	It's fun to visit.	.69		
	The different screens come up quickly.	.69		
	I can easily follow the search path on the screen.	.59		
<b>Auditory Experience/ Comparison Shopping</b>	It uses sound to describe products.	.88	9.8	.73
	It plays music.	.85		
	I can easily compare competitors' products.	.64		

multiple factors and having a loading score of 0.40 or more on a factor was eliminated from the analysis. Furthermore, because a variable's communality represents the amount of variance in the factor matrix explained by that variable, variables with communalities less than 0.40 were deleted because of insufficient contribution to explaining the variance. The two one-item factors were also eliminated. The resulting factor solution retained 21 of the 36 original items on perceived Website attributes. Five multi-item dimensions of the attrib-

utes were identified (see Table 2), which together explained 63% of the total variance in the factor matrix. The five factors were named product information, customer service, privacy and security, navigation, and sensory experience/comparison shopping.

#### *Hypothesis Testing*

H1 predicted that the online shoppers' perceptions of the attributes of their favorite clothing websites would be correlated with their previous purchase of clothing from,

**TABLE 3: Pearson Correlations of Perceived Attributes of Favorite Clothing Websites with Previous Purchase from the Websites**

	Mean	Standard Deviation	Correlation with Previous Purchase from Favorite Clothing Websites
Purchase from favorite clothing websites	1.36	0.84	
Website attribute factors			
Product information	3.41	0.43	0.100*
Customer service	3.23	0.44	0.264***
Privacy and security	3.46	0.54	0.145**
Navigation	3.20	0.41	0.084
Auditory experience/comparison shopping	1.93	0.65	0.016

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

respectively, those websites. To test this hypothesis, the Pearson correlation was calculated between the relevant previous-purchase variable and each of the five factors on perceived Website attributes. The results showed that previous purchase from favorite clothing websites was significantly and positively correlated with three of the factors: product information, customer service, and privacy and security (see Table 3). Note in Table 2 that those three factors had higher Cronbach alphas and explained larger percentages of the variance in the factor matrix than did the other two identified factors. According to these results, H1 was partially supported.

H2 predicted that online shoppers' perceptions of the attributes of their favorite clothing websites would positively affect their future intentions to purchase clothing from, respectively, those Websites. Multiple regression was used to test this hypothesis. The dependent variable for testing H2 was future intention to purchase clothing from those clothing websites. The independent variables were the five per-

ceived-attribute factors. Although each independent variable in the regression to test this hypothesis has a positive coefficient, only the coefficient on customer service is significantly different from zero. Customer service is thus the only one of the five perceived-attribute factors that significantly affected future intentions to purchase from favorite clothing Websites (see Table 4). This result indicates that the respondents' perceptions of the customer-service attributes of their favorite clothing Websites had a positive effect on their future intentions to buy clothing from those Websites. H2 was partially supported.

## DISCUSSION OF RESULTS

In this study, five constructs of favorite clothing website attributes were identified (i.e., product information, customer service, privacy/security, navigation, auditory experience/comparison shopping). The results of this study highlight the importance of websites' customer service features to online shoppers' purchases.

**TABLE 4: Regression Results for H2 on Future Purchase Intention from Favorite Clothing Websites**

Variables	Standardized Coefficient ( $\beta$ )	Squared Part Correlation	t-value
Website attribute factors			
Product information	0.024	0.018	0.37
Customer service	0.227	0.172	3.47*
Privacy and security	0.062	0.049	0.99
Navigation	0.001	0.001	0.02
Auditory experience/comparison shopping	0.058	0.059	1.14

\* $p < 0.001$ .

Although product information, customer service, and privacy and security perceived in websites were all positively related to previous purchase from the websites, customer service was the only type of website attribute that influenced future intended purchase from the websites. This finding may imply that websites' customer-service attributes are fundamental, indeed so much so that good customer service is reason enough to anticipate future buying from a website, suggesting that Internet clothing retailers should give high priority to customer service aspect given in their websites in order to promote online sales to college students. Perhaps the crucial influence of customer-service attributes on our respondents' future intentions to buy from websites reflects an expectation that good customer service can avoid or resolve most problems that might arise in buying from a website, as by being able to return unsatisfactory products or receive help by e-mail or phone in addressing problems.

Websites' customer service attributes take center stage in our results, perhaps reflecting a heavy influence of customer service features on college students' clothing purchase decisions. The more they

perceived that their favorite clothing websites had the attributes in the customer-service factor, the more frequently they had purchased from those websites and the stronger were their future intentions to purchase from the websites. Nevertheless, the results also suggest the importance of product information and privacy and security to such students' purchasing from websites. Specifically, the more our respondents perceived that their favorite clothing websites had the attributes in the product information and privacy-and-security factors, the more frequently they had purchased from those websites.

The positive relationships between previous purchase from clothing websites and perceptions of the websites' product-information, customer-service, and privacy-and-security attributes could mean that our respondents bought more frequently from the websites when they perceived that the sites had the described attributes of those types. Another interpretation is that the respondents came to perceive those attributes in the websites as a result of purchasing from the websites. Either interpretation would suggest that clothing retailers' websites should have the

attributes listed in Table 2 that relate to not only product information, but also customer service and privacy and security. The customer-service attributes shown in Table 2 involve return policies, personal sales assistance, money back, and order rechecking and tracking. The privacy-and-security attributes involve confidentiality of personal information and security of credit card numbers. Perceptions of these and the product-information attributes may be based on experience or on assurances given in websites; for example, respondents may have received remittance for returned garments and had never had their credit card numbers stolen after buying from the websites, or assurances given in the websites may have instilled trust and helped lower the perceived risk in transactions through the websites.

Some customer-service attributes shown in Table 2 involve convenience (e.g., order-tracking capability), but a theme that pervades the customer-service and privacy-and-security attributes is lowering perceived risk in online transactions. The need to build in attributes that help lower consumers' perceived risk applies to any website, not just clothing. Certain attributes, however, may be especially germane to clothing websites. Prime examples are the two customer-service attributes that involve product returns: being able to return unsatisfactory products and receive money back quickly for returned products. The importance of these two attributes to our respondents' online clothing purchases may reflect recognition that, regardless of what clothing-product information a website gives, they buy clothing online without having the information obtained by actu-

ally experiencing garments, as by touching or trying on. The inability to experience garments before buying them online may mean that the potential for dissatisfaction with clothing bought online is higher than with that bought in physical stores.

It is interesting that our results show that perceived privacy-and-security attributes of websites were positively related to previous purchase from the websites, but did not influence future intentions to purchase from them (see Tables 3 and 4). Perhaps our respondents believed that privacy and security issues in online purchasing would be resolved in the next 6 months or they may not appreciate the risk of shopping on the Internet, such as identity theft, and the need to be wary about giving merchants personal identifying information. This belief, however, would run counter to the rising concern among the general populace about fraud and identity theft on the Internet (Gray, 2005). The Internet Fraud Complaint Center reported that 10,000 individuals in the U.S. lost a total of \$17.8 million in online fraud operations in 2001 (as cited in Rupley, 2002). According to Case and King (2003), college students' use of credit cards for online purchasing has increased dramatically to the point that nearly 40% use credit cards to purchase on the Internet. Considering the growth and prevalence of college students' purchasing on the Internet and payment with credit cards for online purchases, it may behoove both parents and universities to provide guidance to help students be responsible Internet consumers. Parents should communicate with their children about planning their spending and about risks related to credit card use and

identity theft. Universities could help educate students about managing personal finances and information, as by providing information through student affairs or other offices and expanding the offering of courses on personal financial management. Both parents and universities have a stake in educating students to be responsible consumers.

This research offers new insights into the relationship between college students' perceptions of website attributes and their purchase behavior in Internet. In identifying website attributes that appear to encourage college students to buy clothing from Internet, the results give evidence of these students' use of Internet websites as mediums for purchase. The study, nevertheless, has limitations. Despite our use of systematic random sampling, confining the sample to 18 to 22 year old college students at two U.S. universities limits generalization of the results to all college students and indeed all young consumers and the larger consumer population. Future research should include online shoppers at different colleges and also of different ages. High school students, for example, are active Internet users with great potential for shopping online.

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