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A SURVEY OF ONLINE PURCHASING DECISION FACTORS AND SHOPPING AND PURCHASING BEHAVIORS OF UNIVERSITY STUDENTS

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Abstract

Shopping and purchasing on retailers' websites continues to expand. According to ACNielsen's 2005 report, more than one tenth of the world population (627 million) have shopped online, and more than half of them have shopped (over 325 million) online within a month of the report's release (ACNielsen, 2005). Compared to the third quarter 2004, the third quarter of 2005 showed a 26.7% increase in online retail sales in the U.S., generating \$22.3 billion for online merchants (U.S. Census Bureau, 2005). Marketers and researchers have verified that university students are one of the most "wired" demographic groups of online users and continue to investigate the characteristics of shopping/purchasing behaviors among these students. The aim of this investigation is to further examine factors that drive university students' online shopping and purchasing decisions, and the types of items they shop for and purchase online.

Keywords: online shopping, purchasing decision factors, shopping behaviors, purchasing behaviors

Introduction and Background

Many researchers have focused attention on major factors influencing consumers' general usage of e-commerce. Among the key factors that have been identified are gender, computer and Internet experience, readily available Internet access, and perceptions of the security of online transactions. Comparing online purchasing in three different countries, Kuhlmerier and Knight (2005) found a positive relationship between consumer Internet use/experience and online purchasing potential. Han et al., (2001) identified a positive relationship between university students' intentions to shop online, time spent online, degree of computer experience, and experience using web tools. Although numerous empirical studies conducted by online market research firms have identified online behavior, shopping, and purchasing patterns for both university students and consumers in general, academic research on these topics has been much less voluminous.

For years, information search has been one of the main marketing research topics (Kulviwat et al., 2004). The expansion of B2C e-commerce both in the U.S. and worldwide has enabled information search to become a more compelling research topic. The Internet is the most powerful search medium for products, services, and most other types of information because it lowers both search cost and search time. As noted by Bakos (1997) Internet search

enables consumers to reduce imperfect information about products. To reduce uncertainty before making a purchasing decision, sophisticated online shoppers are able to benefit from a range of Internet search capabilities including comparing prices among similar products, comparing prices for the same product at multiple vendor sites, and trying virtual products (e.g. virtual models for "trying on" new clothing). Since consumers can easily find information about other consumers' experiences of products (Rha, 2002), reading customer-written products reviews has become an important aspect of online shopping for many consumers; the emergence of consumer-oriented Blogs has elevated this aspect of online shopping to new levels.

Recent research suggests that researching products prior to purchase is particularly important for university students. Burns (2006) summarizes the results of a study conducted by Experience, Inc. indicating that over half of their sample of college students reported spending up to two hours on product research prior to purchase. Another 17% indicated that they devote more than five hours to online product research prior to purchase.

Consumers continue to have concerns about the security of online transactions (NCL, 2001), and increases in phishing and identity theft have not helped to quell these concerns. Consumers continue to worry about credit card theft online, the abuse of personal information, and delivery fouts-ups -- e.g. the wrong product being delivered or paid products never being delivered (NCL, 2001). According to Greenspan (2003), payment security is one of the greatest fears of consumers who had not made online purchases, and more than 61% of consumers (both those who had made online purchases and those who had not) indicated that they would be more likely to purchase online if easy and secure alternatives to credit cards existed. McGann (2004a) cites a 2004 study conducted by TNS and TRUSTe that included 1071 consumers. This study found that the major reasons for reducing or halting online shopping include identity theft concerns (52%), fear of credit card theft (44%), concerns about spyware attacks (44%) and concerns about receiving spam from a Web site after making a purchase (42%). This study also found that more than 60% of respondents said they either did not know how to protect their personal information online or did not consistently take the steps needed to do so.

Despite persistent security concerns, total B2C e-commerce continues to climb both in the US and worldwide. McGann (2004b) notes that online behavior is maturing, and that there is an increasing percentage of consumers who do comparison shopping research online for purchases that they may make on- or offline. McGann cites a 2004 ACNielsen study of 1007 consumers who planned to shop online. When asked their reasons for shopping online, 78% said it saves time; 51% said it offers better prices; 43% cited a greater product selection; and 40% said that online shopping was more convenient. Other reasons included the ability to find more personalized gifts/products (28%) and that there was more information available about products (20%).

In this investigation, we examine the extent to which the major factors related to the online shopping and purchasing decisions of university students resembles those for mainstream consumers. It also examines whether there is any relationship between university students' shopping and purchasing decisions and their shopping/purchasing behaviors.

Research Questions

Popular Items for Shopping and Purchasing

Nelson classified products into two major categories, search products and experience products (Nelson, 1970). Search products are dominated by their products' attributes, and for those products sufficient information can be found prior to a purchase. Experience products cannot be known by their products' attributes, but primarily through experience with the product (Klein, 1998). Bei et al. (2004) studied search behaviors of consumers comparing these two product categories and found that consumers use online information more for experience products than search products. Consumers would shop for search products online since they can find full information online prior to a purchase. On the other hand, experience products are also shopped for online, but here the focus is on searching for information on other consumers' previous experiences (with a restaurant or a movie for instance), or for neutral sources of reviews (Bei et al, 2004). Of importance to the present investigation is whether the shopping and purchasing behaviors of university students demonstrate a similar pattern.

The Bei et al (2004) investigation also suggests that identifying which items are neither shopped for nor purchased online and which items are shopped for online but not purchased online may provide some important insights for

market researchers. By identifying such products marketers can better grasp what it is about the online experience that makes consumers less likely to shop for or purchase them online.

Some marketers have looked closely at which items are the most popular ones for online shopping and purchasing. According to ACNielsen (2005) the worldwide favorites are books, followed by videos /DVDs /games, airline tickets /reservations, and clothing /accessories /shoes. comScore Networks (2005) announced that apparel and accessories have become the most frequent types of products purchased online and that computer software was the fastest growing product category for online purchases for 2005. Home/garden, toys/hobbies, jewelry/watches, and event tickets are other popular items (comscore.com, 2005).

The present authors expect that online orders of these popular items for university students would be similar. The survey instrument used in this investigation enables such a comparison. The instrument enabled us to assess: (1) which types of products are purchased online by university students, (2) which types of products are shopped for but not purchased online, and (3) which types or products are neither shopped for nor purchased online. Responses to items in this section of the survey enable the creation of an online “shopping/purchasing intensity” variable that is useful in examining the relationship between online shopping/purchasing behavior and shopping/purchasing decision making factors.

Purchasing Decision-Making Factors

The online purchasing decision factors captured by the research instrument were derived primarily from empirical studies conducted by online market research firms. Questions related to ten major purchasing decision-making factors were asked including: price, product quality, product variety, website design, product information quality, quality of Web site product pictures, ease of ordering, delivery time, brand image, and customer service. These are summarized in Figure 1.

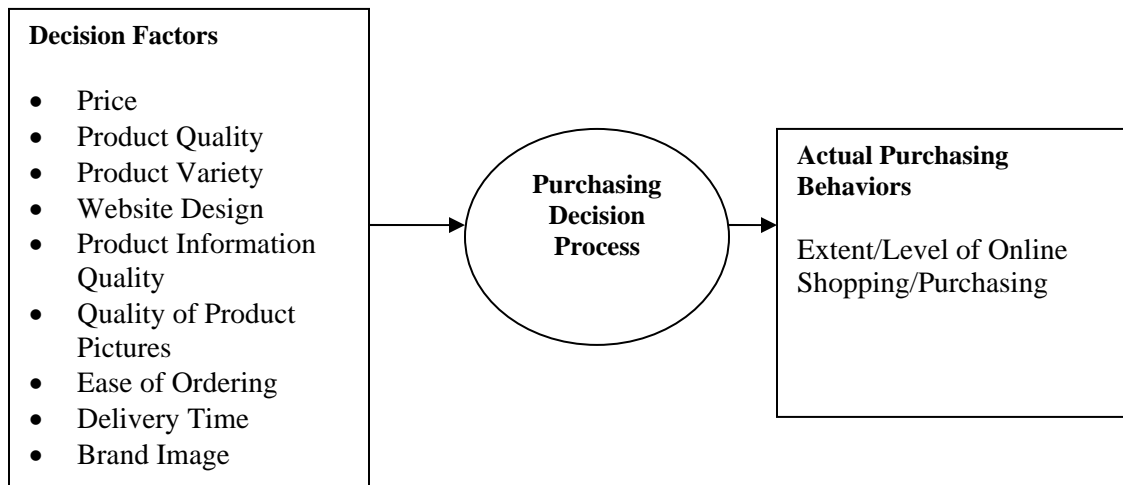


Figure 1. Purchasing Decision-Making Factors

Methodology

Researchers recruited students in their computer related classes to complete an online (WEbCT) survey (for extra credit) related to their online shopping and purchasing attitudes and behaviors. More than 400 usable survey responses were acquired from students at a medium-size, residential, public university in the Southeast.

Demographics

Eighty-four percent of the students were between the ages of 18 and 22; 14.7% were between the ages of 23 and 30, and 1.2% were between 31 and 40 years of age. 58% percent of the respondents were male and 34% were Freshmen or Sophomores while 66% were Juniors or Seniors.

Eighty-three percent of the students indicated that they used computers daily with 58% indicating that they used a computer for more than one hour each day. Seventy-eight percent indicated that they were daily Internet users and 52% indicated that they used the Internet for at least one hour each day. Six percent indicated that they had Internet access from their residence. Sixty-four percent indicate that they check e-mail daily and 26% indicate that they are daily instant messaging users.

Ability to purchase online was not an issue with these students. Ninety one percent indicated that had at least one credit card (60% indicated that they had two or more credit cards). Eighty six percent indicated that they had Internet access from their residence and all students had Internet access via on-campus labs. The following table summarizes the 406 subjects' reported online purchasing experience.

Table1. Reported online purchase experience

Number of Purchases	Frequency (N)	Percent (%)
None	29	7.1
1 to 10	150	36.9
11 to 25	125	30.8
26 to 50	60	14.8
51 to 100	34	8.4
Over 100	8	2

The vast majority of the subjects (92.9%) had online purchasing experience and 56% have made more than 10 online purchases. Responses to another survey item found that more than half of the respondents (56%) made their first online purchase in 2001 or later, while 30% began purchasing online prior to 2001.

Primary Analysis and Results

Products Commonly Shopped for and/or Purchased Online by Students

The research instrument included 37 items that enabled respondents to indicate the extent to which they have used the Internet to shop for and/or purchase different types of products. The response format for each item was: 1=have neither shopped for nor purchased, 2=have shopped for but have not purchased, and 3=have purchased. The descriptive statistics, including frequencies and percentages for each of the three options for the 37 items were performed. These are compared in the following tables.

Most Popular Purchased Product Categories among University Students

Table 2 summarizes the top ten product categories that our sample of respondents reported purchasing online. Table 3 summarizes the top ten types of products that our sample of students reports shopping for online but not purchasing. Table 4 summarizes the top ten types of products that our sample of students reports neither shopping for nor purchasing for online. Table 5 summarizes the mean responses for each of the 37 product categories.

Table 2. Products that are Most Commonly Purchased Online by Students

Product Category	Purchased (% of Respondents)
Clothing	59.36
Music	59.11
Hotel Reservations	56.90
Event Tickets	53.94
Gift Items	51.97
Books	51.23
Movies	48.28
Airline Tickets	44.83
Shoes/Footwear	39.41
Sporting Goods	31.53

Table 3. Product Types that Students Shop for Online but do not Purchase Online

Product Category	Shopped but not Purchased (% of Respondents)
Automobiles	71.18
Cameras	49.75
Home Entertainment/ Stereo Equipment	45.57
Shoes/Footwear	40.64
Jewelry	38.18
Cruise Reservations	37.19
Furniture	36.45
Movies	32.76
Video Games	31.77
Sporting Goods	31.77

Table 4. Product Types that Students neither Shop for nor Purchase Online

Product Category	Shopped but not Purchased (% of Respondents)
Gardening supplies	86.45
Food and grocery items	83.50
Beverage items (coffee, tea, wine, etc.)	80.54
Prescription Drugs	79.56
Cookware	76.60
Building supplies	76.11
Insurance	73.15
Pet Supplies	71.67
Major Appliances	70.20
Loans	67.98

Table 5. Mean Responses for all Product Categories

Rank	Item	Mean	Rank	Item	Mean
1	Clothing	2.48	21	Flowers	1.63
2	Music	2.47	22	Furniture	1.61
3	Hotel Reservations	2.40	23	Car Rentals	1.59
4	Gifts	2.35	24	Cosmetics	1.53
5	Event Tickets	2.34	25	Small Appliances	1.50
6	Movies	2.29	26	Fitness Equipment	1.48
7	Books	2.25	27	Stocks	1.46
8	Shoes/Footwear	2.19	28	Loans	1.41
9	Airline Tickets	2.17	29	Pets Supplies	1.37
10	Entertainment/Stereo	1.95	30	Major Appliances	1.35
11	Sporting Goods	1.95	31	Insurance	1.33
12	Computer SW	1.90	32	Building Supplies	1.31
13	Computer HW	1.86	33	Cookware	1.29
14	Video Games	1.85	34	Prescription Drugs	1.28
15	Automobiles	1.83	35	Beverages	1.26
16	Toys	1.76	36	Food /Grocery Items	1.22
17	Home Décor	1.74	37	Gardening	1.17
18	Jewelry	1.73			
19	Cameras	1.70			
20	Cruise Reservations	1.68			

As illustrated in Table 2, clothing, music, hotel reservations, gifts, and event tickets were the most popular items to be shopped and/or purchased by this sample of university students. Table 3 suggests that expensive items such as automobiles, cameras, home entertainment/stereo equipment, jewelry, and cruises are among the most popular items that students shop for online. It is interesting to note that only two of the more popular shopped for items (shoes/footwear and sporting goods) are ranked in the top ten for both online shopping and purchasing.

The percentages reported in Tables 1 and 2 stack up favorably to the results of studies conducted by online market research firms. Pastore (2000b), for example, summarized the results of a Greenfield Online study that found that 81% of the sampled college students had made an online purchase. This same study found that most commonly purchased items were CDs (64%), books (58%), clothing (42%), and concert/event tickets (32%). Greenspan (2004) summarizes the results of a NRF/BIGresearch study that found books, electronics equipment, clothing, and shoes as popular online purchases by college students.

Purchasing Decision-Making Factors

All ten of the online purchasing decision factors depicted in Figure 1 were rated (on a five-point Likert scale where 1=extremely unimportant, 5=extremely important) by this sample of university students to important when making an online purchasing decision. Mean ratings for each of these factors are summarized in Table 6.

Table 6. Means of Purchasing Decision-Making Factors

Purchasing Factors	N	Mean	Std. Deviation
Product Quality	406	4.42	0.879
Delivery time	406	4.30	0.936
Price	406	4.29	0.988
Customer Service	406	4.25	0.926
Ease of Ordering	406	4.23	0.905
Information Quality	406	4.04	0.930
Product Variety	406	3.92	0.904
Quality of Pictures	406	3.90	1.035
Website Design	406	3.79	0.943
Brand Image	406	3.77	0.948

Product quality, delivery time, price, customer service, and ease of ordering are considered to be more important than the other five factors. Brand image and the website design, while important, are collectively rated as being less significant than the other factors when making decisions about online purchases.

Table 7. A Summary of the Relative Importance of Each Decision Factor

	Extremely Important	Important	Neutral	Unimportant	Extremely Unimportant	Missing (N)
Price	54.9(%)	27.6(%)	12.1(%)	2.7(%)	2.2 (%)	
	223	112	49	11	9	2
Product Quality	61.3(%)	25.4(%)	9.1(%)	3.0(%)	1.0(%)	
	249	103	37	12	4	1
Product Variety	29.3(%)	39.4(%)	26.1(%)	3.9(%)	1.2(%)	
	119	160	106	16	5	
Design	23.6(%)	40.9(%)	28.8(%)	4.2(%)	2.2(%)	
	96	166	117	17	9	1
Information Quality	37.0(%)	37.2(%)	20.4(%)	3.9(%)	1.5(%)	
	150	151	83	16	6	
Quality of Pictures	33.3(%)	35.5(%)	22.2(%)	5.9(%)	3.2(%)	
	135	144	90	24	13	
Ease of Ordering	47.5(%)	34.2(%)	12.8(%)	4.4(%)	1.0(%)	
	193	139	52	18	4	
Delivery Time	53.7(%)	29.6(%)	11.6(%)	3.4(%)	1.5(%)	
	218	120	47	14	6	1
Brand Image	22.9(%)	42.1(%)	26.4(%)	6.4(%)	2.2(%)	
	93	171	107	26	9	
Customer Service	49.3(%)	33.3(%)	11.8(%)	4.4(%)	1.0 (%)	
	200	135	48	18	4	1

As noted in Table 7, among the ten factors, price, product quality, delivery time, and customer service had more than 50% of participants that answered “extremely important” while website design and brand image had the lowest number for the category “extremely important.” When the frequencies for “extremely important” and “important” were counted, the highest to lowest frequencies were ranked in the following order: product quality, delivery time, price, customer service and ease of ordering, information quality. It is interesting to note that at least 67% of our sample of students provided “extremely important” or “important” responses for each of the ten decision factors.

Table 8. Comparison of Two Shopping/Purchasing Groups

	Shopping/Purchasing	N	Mean	Std. Deviation	Std. Error Mean
Price	Low Intensity	204	2.40	.765	.054
	High Intensity	202	2.34	.790	.056
Product Quality	Low Intensity	204	2.50	.726	.051
	High Intensity	202	2.45	.726	.051
Product Variety	Low Intensity	204	1.89	.755	.053
	High Intensity	202	2.07	.795	.056
Website Design	Low Intensity	204	1.84	.735	.051
	High Intensity	202	1.92	.794	.056
Information Quality	Low Intensity	204	2.06	.769	.054
	High Intensity	202	2.16	.801	.056
Quality of Pictures	Low Intensity	204	1.89	.793	.056
	High Intensity	202	2.15	.797	.056
Ease of Ordering	Low Intensity	204	2.24	.758	.053
	High Intensity	202	2.35	.753	.053
Delivery Time	Low Intensity	204	2.31	.743	.052
	High Intensity	202	2.42	.777	.055
Brand Image	Low Intensity	204	1.85	.755	.053
	High Intensity	202	1.91	.750	.053
Customer Service	Low Intensity	204	2.32	.777	.054
	High Intensity	202	2.31	.743	.052

To examine whether there is any difference between the ten decision-making factors and actual shopping/purchasing behavior, a new variable “shopping/purchasing behavior intensity” was calculated summing each student’s responses to each of the 37 product categories. Recall that a three-level response format was used for each product category (1=have neither shopped for nor purchased, 2=have shopped for but have not purchased, and 3=have purchased). By summing across the 37 items, a respondent’s score could range from 37 (if he/she indicated “have neither shopped for nor purchased” to each of the 37 product categories) to 111 (if he/she indicated “have purchased” for each of the 37 product categories). A median split was used to categorize students on the basis of their shopping/purchasing behavior intensity scores. Two hundred and four students with sums from 37 to 64 were categorized in “Low Intensity” group while the other 202 students in our sample were categorized as “High Intensity”. The means, standard deviations, and standard error means for responses of the two groups on the ten purchasing decision-making factors are provided in Table 8.

The “Low Intensity” vs. “High Intensity” groups were compared on each of the ten purchasing decision factors by T-tests. Levene's test for equality of variances was used to verify whether the variances of the two groups are equal; variances were determined to be equal for each group on each purchasing decision factor. The results the T-tests are summarized in Table 9.

Table 9. Comparison of Low Intensity vs. High Intensity on Purchasing Decision Making Factors

	T	df	Sig.(2-tailed)	Mean Difference
Price	0.719	404.000	0.473	0.055
Product Quality	0.755	404.000	0.451	0.054
Product Variety	-2.303	404.000	0.022	-0.177
Website Design	-1.087	404.000	0.278	-0.083
Information Quality	-1.215	404.000	0.225	-0.095
Quality of Pictures	-3.250	404.000	0.001	-0.256
Ease of Ordering	-1.549	404.000	0.122	-0.116
Delivery Time	-1.420	404.000	0.156	-0.107
Brand Image	-0.710	404.000	0.478	-0.053
Customer Service	0.220	404.000	0.826	0.017

Only product variety and quality of pictures were found to be statistically different for the two groups. As may be observed from the means in Table 8, both product variety and quality of pictures were considered to be more important by students categorized as High Intensity online shoppers/buyers than students categorized as Low Intensity online shoppers/buyers.

Conclusions

The vast majority (92.9 %) of our sample of university students report that they have made online purchases and most have made numerous online purchases. The types of products that are most frequently purchased online by this sample include clothing, music, hotel reservations, and books. This sample was likely to use the Internet to shop for, but not purchase, more expensive "big ticket" items such as automobiles, home entertainment/stereo system equipment, and jewelry. Products that this sample of students neither shopped for nor purchased online include gardening supplies, food and grocery items, cookware, and major appliances. This is not surprising when you consider that these are young, single college single students who are not homeowners.

The fact that almost 93% students in our sample have made online purchases suggests that online retailers need to take university students seriously. This assertion is echoed by the results of numerous findings reported by online market research firms (e.g. Burns, 2006; Greenspan, 2003; Greenspan, 2004; Pastore, 2000; and Soltoff, 2004).

Our results suggest that there are at least ten factors that students consider to be important when making online purchasing decisions (product quality, delivery time, price, customer service, ease of ordering, product information quality, product variety, quality of product pictures, overall Website design, and brand image). Only two of these (product variety and quality of product pictures), however, were observed to more important to High Intensity online shoppers/buyers than to Low Intensity online shoppers/buyers. Overall, our results suggest that online retailers should focus particular attention on product quality, delivery time, price, customer service, and ease of ordering when marketing to the university-age online shopper.

There is evidence that exposure to online advertising also influences the purchasing decisions of university students. Burns (2006) summarizes a study conducted by Experience, Inc. that found that more than half of its sample of college students reported purchasing a product or service online after viewing an online ad. This study also found that more than a third of the students in the sample also considered Web ads to be the most influential channel of information when learning about a particular product or service.

The generalizability of our findings is limited, of course, by the fact that our sample of online consumers consisted solely of students enrolled in a single university in the Southeast. However, the fact that our findings are generally consistent with the results of studies conducted previously by online research firms suggests that our results may be reasonably robust despite the obvious limitations of our sample.

Future investigations should focus on the extent to which university students' online shopping and purchasing behaviors are similar to those of mainstream online consumers. That is, how are the online behaviors of students similar to general online consumers? How are they different? Are the online shopping and purchasing behaviors of university students accurate predictors of the online behaviors of mainstream consumers for particular product categories? Obtaining answers to these questions will go a long way to determining the importance of online purchases by university student to our overall understanding of online shopping and buying.

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