

ASSESSING THE IMPACT OF INTERNET SHOPPING ON STORE SHOPPING AMONG MALL SHOPPERS AND INTERNET USERS

Soyeon Shim, Ph.D.

Professor

Mary Ann Eastlick, Ph.D.

Associate Professor

Sherry Lotz, Ph.D.

Assistant Professor

Retailing and Consumer Sciences, The University of Arizona, Tucson, Arizona



Overview

Using consumers' shopping behavioral intentions, we established the size of three market segments (primarily Internet shopper, product-situation specific cross-shopper, and primarily store-oriented shopper markets) for both the cognitive and sensory experiential product categories. The results indicate that Internet shopping has a relatively near-term competitive impact on traditional shopping for the cognitive product market, while the effect of the Internet on the sensory experiential market may not be as pronounced. Results also indicate that attitudes toward Internet shopping, past experience with Internet shopping and consumer background/demographic characteristics influenced information search intention and shopping through the Internet. Finally, information search mode was influenced by consumer attitude toward the Internet and by past experience. Practical implications are provided.



■ Introduction and Justification

Today's consumers are increasingly inundated with a myriad of choices—not only among different products and brands, but also among diverse retailer formats such as department stores, specialty stores, catalog retailers and online electronic shopping systems. Of the various alternatives, Internet shopping is the most rapidly developing shopping mode and is quickly gaining significant market share. It is reported that, in the United States alone, 39 million people shopped on line in 1999, up from 17 million in 1998. The average number of purchases has also grown from six purchases in 1998 to 13 purchases in 1999 (Ernst & Young LLP, 2000). According to Jupiter Communications, U.S. Internet sales of approximately \$11.9 billion in 1999 are expected to grow to \$41.1 billion by 2002 (“The On-Line Revolution,” 1999).

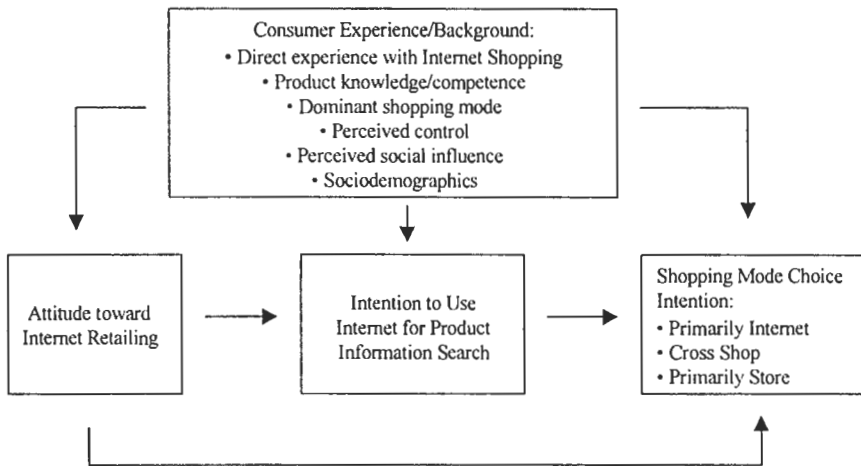
While some researchers believe that the Internet will eventually replace the more traditional “bricks-and-mortar” channel function (e.g., Burke, 1997), many analysts and researchers propose that e-commerce will simply be another retail distribution system available to consumers (e.g., Peterson, Balasubramanian and Bronnenberg, 1997). Nevertheless, considering the Internet's present growth rate and society's paradigm shift from an industrial to an information age, several questions regarding the competitive effects of Internet commerce on the marketplace arise. In order to address such questions as “What impact will new electronic retail distribution systems potentially have on traditional ‘bricks-and-mortar’ retail distribution systems?” and “Will e-commerce and traditional retailers compete directly or complement each other?” researchers emphasize the need to investigate other details first. For example, there is little knowledge about how consumers will use electronic versus traditional retailers for the various stages of the consumer decision-making process (e.g., need recognition, information search, evaluation and purchase) (e.g., Peterson, Balasubramanian and Bronnenberg, 1997). According to Ernst & Young LLP (1999) and IBM (Reedy, 1999), many consumers use the Internet solely to research information on products while making actual purchases via more traditional retail channels. Some researchers suggest that product categories and situational characteristics may influence the choice between electronic and traditional retail formats (Peterson, Balasubramanian and Bronnenberg, 1997).

■ Research Objectives and Theoretical Model

Because very little empirical research has been conducted to assess the potential competitive impact of Internet shopping on shopping through

traditional retail venues, the major objective of this study is to determine whether the *product category* being evaluated/purchased and the *situational context* of the shopping activity can be used to identify three consumer groups: 1) primarily Internet shoppers, 2) primarily traditional shopping mall retailer shoppers, or 3) cross-shoppers between Internet and shopping mall retail formats. Furthermore, other factors that may influence and predict consumers' decisions to use the Internet or stores for shopping will also be assessed, including attitude toward Internet shopping, intention to use Internet for product information search and background/experience variables. Adapting the *Theory of Planned Behavior* as a theoretical framework (Ajzen, 1985), the proposed model for the research project is shown in Figure 1.

FIGURE 1 ATTITUDE-BEHAVIOR MODEL: SHOPPING MODE CHOICE



Specific research objectives are as follows:

Objective 1.

Through a study of consumers' shopping intentions, the first objective is to examine whether the *product category* being evaluated/purchased and the *situational context* of the shopping activity can be used to segment Internet and traditional mall shoppers into three a priori consumer segments.

Primarily Internet-oriented Shoppers:

Shoppers who intend to purchase selected product categories largely through the Internet, *independent of the product category shopped and the task situation.*

Product-Situation Specific Cross-shoppers:

Shoppers who intend to purchase selected product categories through the Internet or stores, depending on *products and/or specific task situations*.

Primarily Store-oriented Shoppers:

Shoppers who intend to purchase selected product categories largely through stores, *independent of the product category shopped and the task situation*.

Objective 2.

After each market has been identified, the second objective is to investigate consumers' attitude toward Internet shopping, intention to use the Internet for product information search and background/experience characteristics related to membership within each shopping segment.

Objective 3.

The final objective is to identify factors that influence consumers' intention to use the Internet for product information search among such factors as Internet shopping attitudes and consumer experience/background variables.

■ Theoretical Framework and Background

The Theory of Planned Behavior.

The premise of earlier, traditional attitude and behavioral models—i.e., attitude-behavioral intention (Fishbein and Ajzen, 1975) and theory of reasoned action (Ajzen and Fishbein, 1980)—is that behavioral intention is the immediate antecedent of behavior and is determined by attitudes or subjective norms (i.e., social influence) or both. Depending on the specific nature of the behavior, the relative importance of attitude and subjective influence may fluctuate. More recently, Ajzen (1985, 1991) developed the theory of planned behavior, which is a more comprehensive concept incorporating perceived behavioral control, which accounts for behaviors that are not entirely under one's own volitional control, or the degree to which a behavior can be performed at will. In other words, perceived behavioral control represents a person's belief about how easy it would be to perform the behavior, considering the availability of resources or op-

portunities to do so. Accordingly, perceived behavioral control is thought to influence intention and behavior directly.

In this study, a choice model, including a consumer's behavioral intention to choose among specific alternatives—e.g., Internet versus store shopping modes—will be adopted. This model is especially valid for this purpose, given research findings that the attitude-behavioral model performs best in the context of choice decisions (Sheppard, Hartwick and Warshaw, 1988). We also propose to extend the theory of planned action model by incorporating other consumer-related variables such as product knowledge, direct experience with Internet shopping, dominant past shopping mode and socio-demographic characteristics.

Demographic Characteristics and Attitudes Toward Internet Attributes of Online Shoppers.

The majority of descriptive surveys to date have focused on identifying demographic characteristics of Internet users and aspects that might influence consumer use of e-commerce. Typical Internet users tend to be male, young, well-educated, married and in higher income brackets (Georgia Tech, 1999).

Other factors (e.g., convenience, access and type of connection to the Internet and privacy issues) have also been identified as important attributes influencing use of the Internet for commercial purposes (Ernst & Young LLP, 1998, 1999; Hoffman, Kalsbeek and Novak, 1996; Master Card International, 1996). A few academic researchers have also focused on identifying psychographic and/or innovation characteristics that influence consumer adoption of electronic-based shopping modes. Several characteristics or benefits of electronic shopping, such as the relative ease, the ability to try and observability, were found to be associated positively with consumers' willingness to adopt electronic shopping (Eastlick, 1996; Korgaonkar and Moschis, 1987; Shim and Drake, 1990).

■ Scope of the Study

Target Group.

This study focuses on both typical mall shoppers and computer users, although these groups may not be mutually exclusive. We are interested in studying both groups because mall shoppers represent a major market segment that traditional store retailers strive to maintain and increase, while computer users represent an attractive segment for Internet retailers to pursue. The U.S. personal computer penetration rate is reported to be

53% (Ernst & Young LLP, 2000). By focusing on both groups, we can determine the extent to which mall shoppers and computer users are likely to cross-shop or to shop exclusively from one or the other shopping venue.

Product Category and Purchase Situation.

In order to predict the consumer's intended shopping mode choice more precisely, the model will be evaluated in the context of two parameters: *product category* and the *purchase situation*.

Product categories may differ by the type of information that consumers typically need to evaluate the product prior to purchase. It is commonly believed that consumers seek evaluative information about particular products by experiencing the product through one or more of the five senses (e.g., touch, sight, smell); this is termed *sensory experiential* information. In contrast, consumers evaluate other products primarily through *cognitive* information. That is, they use perceptual and intellectual skills to examine various forms of product data (e.g., facts, figures, testimony of experts, etc.). These informational needs, which vary by product category, may affect consumers' shopping mode choice, as each format (i.e., Internet versus store) may have differing strengths and weaknesses associated with meeting these needs. This is consistent with Peterson, Balasubramanian and Bronnenberg's (1997) prediction that a retail channel's success in securing consumers is largely dependent on the successful matching of needs associated with the product and the channel's benefits. They proposed that these differing product qualities encompass search versus experience qualities. This is consistent with the concept proposed in this study.

One example is a potentially greater need for sensory experiential information regarding non-durables (e.g., apparel) as opposed to durables (e.g., computers). It is proposed that sensory experiential information may be more easily attained through store shopping. On the other hand, consumers may desire more cognitive types of information with respect to durables (e.g., computers). The Internet may be an excellent medium to meet this type of consumer need. We propose to investigate six broad merchandise categories representing a spectrum of sensory experiential and cognitive information needs: books, computer software, music, videos, apparel and accessories.

In addition to product category, *purchase situations* are known to have an influence on consumer purchase behavior. Situational influence is defined as a factor independent of consumer and object characteristics and particular to a specific time and place (Belk, 1975). One type of situation is *task*, designated as consumers' purchase goals and/or objec-

tives. An example of a task situational scenario is whether a purchase is for personal use or for a gift. The task situational factor may have an influence on consumers' Internet patronage decisions because particular attributes of the Internet shopping experience may become particularly important under certain shopping scenarios. For instance, a gift can be delivered directly to the gift recipient by the Internet retailer. Therefore, the convenience of Internet shopping may become especially critical when purchasing a gift rather than purchasing a product for oneself. Other situational influences may exist as well.

Shopper Segments.

The potential competitive impact of Internet shopping on traditional retail shopping will be evaluated according to the relative proportion of each segment indicating an intent to shop each mode exclusively, to cross-shop or both. In addition, descriptive results will reveal how each consumer market is affected by product type (i.e., whether consumer intention will be consistent or vary across product categories) and the consumer's situational tasks (i.e., self versus gift purchase). Furthermore, each shopper group will be profiled based on the following variables: attitude toward Internet shopping, intention to use Internet shopping for product information search and several consumer experience/background variables (see Figure 1).

■ Description of Methodology

Sampling and Data Collection.

Mailing labels comprised of 2000 names were obtained from a mailing brokerage firm. These names were selected from a database of personal computer (PC) owners who reside in 15 metropolitan cities (Seattle, San Francisco, Los Angeles, Denver, Phoenix, Dallas/Ft. Worth, Houston, Minneapolis/St. Paul, Chicago, New York, Washington DC, Atlanta, Orlando, New Orleans and Cleveland). A representation of malls by region was considered in selecting these cities (Gentleman, 1999). PC owners were selected because the ownership of a PC would be a minimum requirement for having access to the Internet for shopping. In addition, it would seem, intuitively, that the demographic characteristics of PC owners and mall patrons would overlap. Both males (60%) and females (40%), 18-55 years old, were targeted, using a random sampling method proportionate to the population size of each city.

A pre-contact postcard was mailed to 2000 subjects two weeks prior

to the first mailing of the survey questionnaire. An incentive—the chance to win up to \$100—was provided to increase the response rate. The survey questionnaire was mailed during the first week of October 1999, followed by a second mailing three weeks later. Before the survey was mailed, the questionnaire was pretested, using a small convenience sample, to ensure readability and a logical flow of questions.

A 36% response rate was obtained, including 706 out of 1974 delivered surveys. Of the 706 respondents, those who indicated not having a computer at home or work ($n = 22$) were excluded from the analysis since the sample population was limited to consumer households with access to a personal computer.

Measurement.

Shopping Mode Choice Intention.

Through the use of a choice model, purchase intentions involving the Internet and store shopping over the next three months for 12 product/situation-specific scenarios were measured. The six product categories comprised apparel, accessories, books, computer software, music and videos, while the two situations consisted of personal versus gift purchases. Using a 7-point semantic differential scale (1 = shopping entirely by store; 7 = shopping entirely by Internet), respondents were asked to indicate the likelihood that they would choose either a store or the Internet to shop for each of the products for the two respective situations. In order to reduce order effects, products were listed in a different order for each shopping situation.

Intention to Use Internet for Product Information Search.

The ease of conducting research through the Internet has been reported to be the second most important attribute for Internet shoppers, preceded by convenience (Reedy, 1999). The extent to which consumers use the Internet for their product information search prior to making a final patronage decision, and the influence of this information search on the choice of shopping venue, has not been studied. For what types of product information and under which situations are consumers likely to use the Internet for researching information? How will Internet information search patterns influence shopping mode choice?

The likelihood that respondents would use the Internet or a store to search for product information was assessed for each of the 12 product/situation-specific scenarios, using the same scale described earlier. Respondents were asked to indicate the likelihood that they would seek information about each of the products from either the Internet or from retail stores, regardless of where they would eventually buy these products.

Attitude toward Internet Shopping.

Attitude toward Internet shopping encompassed comprehensive attitudinal dimensions related to general attributes associated with shopping, such as products offered and perceived risks and benefits. Fishbein's multiattribute model was utilized to measure attitude toward Internet shopping. Comprehensive attributes were first identified through literature review (e.g., Ernst & Young LLP, 1998, 1999; Georgia Tech, 1999; Reedy, 1999). A total of 24 attributes was included, representing various aspects of shopping.

The first section measured the importance of the shopping attributes (e_i). Respondents were first asked to indicate on a 7-point scale (1 = not important at all; 7 = extremely important), how important each attribute was to them when choosing where to shop for the products in question for this study. The second section was used to measure respondents' evaluation of Internet shopping ($b_{i, Internet}$). Respondents were asked to indicate their perception of Internet shopping, regardless of whether they had shopped through the Internet, by indicating on a 7-point scale (1 = very unlikely; 7 = very likely) how likely they felt Internet shopping was to provide each of the pertinent attributes when they purchase products such as books, software, music, video, apparel and accessories. Each of the 24 attributes was presented in a different order in each section to avoid order effects. Finally, attitude toward Internet shopping was determined by computing the average of the sum of the multiplicative of each subject's importance and evaluation ratings for Internet attributes.

Product Categories.

Respondents were asked to indicate, on a 7-point scale (1 = not at all important; 7 = extremely important), the degree to which they need to experience each of the six products with one or more of their senses (e.g., touching, seeing, hearing, etc.).

Consumer Experience/Background.

It is proposed that various consumer experience variables will influence the likelihood that consumers will choose the Internet, rather than store retailing, as their shopping venue. Consumer experience variables will include perceived social influence, perceived behavioral control, direct experience with Internet shopping, dominant past shopping mode, product knowledge and socioeconomic variables. Each of these variables is operationally defined below.

Perceived social influence: This variable was assessed by asking the respondents to indicate, using a 7-point Likert scale, to what extent most people who were important to them thought that they should or should not use the Internet for shopping.

Perceived behavioral control: Two questions, arranged on a 7-point Likert scale, were asked regarding how easy or difficult it would be to shop through the Internet.

Direct experience with Internet shopping: Respondents were asked to indicate the number of purchases they had made through the Internet for each of the six products in the past 12 months.

Dominant past shopping mode: Respondents were asked to indicate, on a 7-point Likert scale (1 = never; 7 = very often), how often they shopped for books, software, music, video, apparel and accessories at four different retail formats (e.g., shopping malls—specialty/department stores, discount stores, Internet, catalog/mail order).

Product knowledge: Respondents were asked to indicate on a 7-point scale (1 = not at all knowledgeable; 7 = extremely knowledgeable) their level of knowledge about purchasing and finding information relative to books, software, music, video, apparel and accessories.

Socio-demographic, Computer ownership and use and Shopping behavior characteristics: Socio-demographic questions addressed age, gender, income, education, ethnicity and occupation. Questions were also asked regarding personal computer ownership at home and the use of a computer at work. Finally, to provide a comparison between the respondents in this study and the database of mall shoppers (Gentleman, 1999), questions were asked regarding the state in which respondents currently reside, the frequency of their shopping mall visits and the amount of money spent at shopping malls during the past three-month period.

Respondents Characteristics.

Demographic Characteristics.

Table 1 presents demographic characteristics of the respondents. As expected, all 15 metropolitan areas were represented. A slightly higher percentage of males (53%) was represented than females (47%). A wide range of age groups was represented, with the largest age category being 35–44 years old. In general, the respondents were highly educated; 58% held a four-year college degree or higher and 30% held a vocational or two-year college degree. Accordingly, they were employed in predominantly white collar and/or professional occupations. Almost 60% of the respondents indicated that their total household income was \$50,000 or higher. Approximately 76% of the respondents were Caucasian, and 24% represented different non-Caucasian ethnic groups (e.g., African-American, Asian-American, or Hispanic).

Respondents' General Mall Shopping Behaviors and Their Comparison with Those of Mall Shoppers.

Respondents in this study reported fewer mall visits but a relatively similar expenditure level as compared to mall shoppers in an ICSC database (Gentleman, 1999) (see Table 2). Table 3 presents a comparison of the

TABLE 1. DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS

Demographic Indicator	% (N = 684)	
Gender	Male	53%
	Female	47%
Age	18-24	9.3%
	25-34	28.4%
	35-44	29.6%
	45-54	29.6%
	55 or older	3.2%
Highest educational level	High school diploma or equivalent	22.2%
	Vocational or two-year college degree	30%
	Four-year college diploma	32%
	Master's, Ph.D. or professional degree	16%
Ethnicity	White	76.2%
	African-American	9.6%
	Asian-American	5.1%
	Hispanic or Spanish origin	5.6%
	Other	3.5%
Occupation	Laborer, machine operation	6.2%
	Service worker, sales/clerical	18.4%
	Manager, administrative personnel	30.3%
	Professional worker	45.1%
Total household income	Less than \$20,000	6.2%
	\$20,000-\$29,999	10.4%
	\$30,000-\$49,999	24.8%
	\$50,000-\$69,999	23.3%
	\$70,000-\$89,999	35.4%
The state in which you currently reside	Texas (Dallas-Ft. Worth, Houston)	23.6%
	Illinois (Chicago)	18.7%
	California (San Francisco, Los Angeles)	15.7%
	Arizona (Phoenix)	9.8%
	Minnesota (Minneapolis/St. Paul)	8.8%
	Ohio (Cleveland)	7.2%
	New York (New York)	3.0%
	Washington (Seattle)	2.6%
	Colorado (Denver)	2.6%
	Georgia (Atlanta)	2.3%
	Florida (Orlando)	2.0%
Louisiana (New Orleans)	2.0%	

respondents in this study with the ICSC database regarding regional representation. There appeared to be an overall similarity between the two studies in terms of regional representation, with a slightly greater percentage of shoppers from the Midwest represented in this study than in the ICSC report.

TABLE 2. FREQUENCIES OF SHOPPING MALL VISITS AND THE LEVEL OF EXPENDITURE

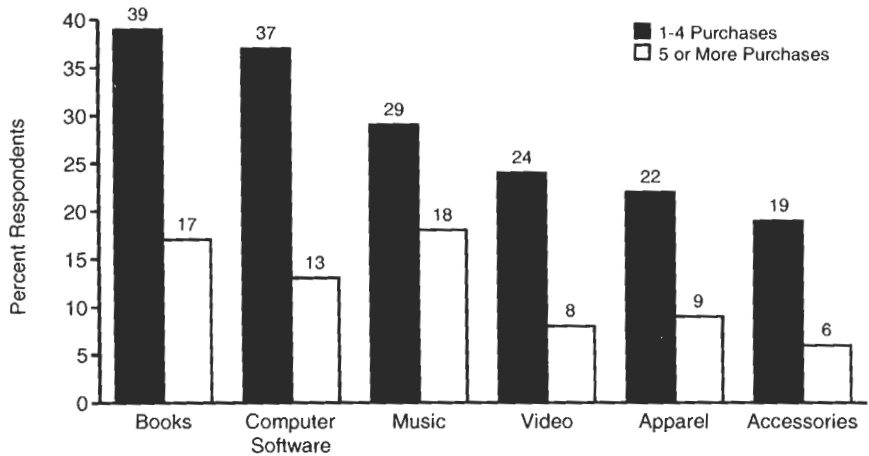
	Respondents in this/Study (N = 684)	Respondents in ICSC Database (1999)
Average visits in 3-month period	6.89	10.6
Total spent over 3 months	\$614	\$687
Average spent per trip	\$89	\$65

TABLE 3. A REGIONAL COMPARISON OF THE RESPONDENTS IN THIS STUDY WITH THE ICSC REPORT (1999)

Region	Distribution of Respondents in this Study	Distribution of Respondents in ICSC Database (1999)	Distribution of U.S. Mall GLA
Northeast	6%	20%	17%
Midwest	34%	23%	23%
South	4%	42%	35%
West	2%	26%	24%

Past Internet Shopping Behavior. Sixty percent of the respondents ($n = 431$) indicated that they had purchased products through the Internet in the past. Figure 2 presents the frequency with which various products were purchased in the past 12 months by those indicating they had made Internet purchases.

FIGURE 2 A PERCENTAGE OF RESPONDENTS WHO PURCHASED PRODUCTS THROUGH THE INTERNET IN THE PAST 12 MONTHS (N = 431)



■ Preliminary Statistical Procedures

Several initial analyses were conducted prior to the statistical procedures directed toward meeting the study's objectives.

Step 1. Factor analysis on product categories.

A factor analysis was conducted on questions that were designed to determine consumer perception of various products in terms of their need for sensory experiential information. Principal component factor analysis with varimax rotation revealed two distinct factors. The first factor included four products (books, computer software, music and video), and the second factor included two products (apparel and accessories). (See Table 4 for detailed results.)

Because the first factor contained products in which purchase decisions would involve predominantly perceptual and/or intellectual evaluations, and the second factor was comprised of products for which purchase decisions would involve predominantly experiential evaluations, these two product factors were labeled *Cognitive Products* and *Sensory Experiential Products*, respectively. Although one might expect music and video to be more associated with products requiring sensory information, consumers may have already heard the music and seen the video before making a typical purchase. Thus, these product categories might have proven to be more associated with cognitive products such as books and computer software.

TABLE 4. FACTOR ANALYSIS ON PRODUCT CATEGORIES

Factor	Items	Loadings	Variance Explained
Factor 1—Cognitive Products	Videos	.79	45%
	Computer Software	.77	
	Books	.77	
	Music	.67	
Factor 2—Sensory Experiential Products	Apparel	.89	22%
	Accessories	.88	

Step 2. Determination of situational influences.

The next step was to determine whether situational influences (i.e., shopping for self versus gifts) affect the respondents' intention to purchase products through the Internet versus stores. Paired t-tests for cognitive products ($t = -1.51$, $df = 679$, $p \geq .05$) and sensory experiential products ($t = -1.76$, $df = 679$, $p \geq .05$) revealed that respondents did not signifi-

cantly differ in their choice of shopping venues when they purchased for themselves or for gifts. Therefore, these results did not support a hypothesis that situational influence might affect this choice, at least for the six product categories included in this study. Since no differences were found between shopping for personal use and shopping for gifts, the two categories were combined for subsequent analysis.

Step 3. Determination of product influence.

The third step was to determine whether different types of product categories influence respondents' intention to use the Internet versus stores. A paired t-test ($t = 14.3$, $df = 679$, $p = .000$) indicated that a significant difference existed in selecting a shopping venue (i.e., Internet versus stores) when purchasing cognitive or sensory experiential products. Thus, it was necessary to treat the two product categories separately for subsequent analysis.

Before analyzing data for the second objective, the following preliminary steps were taken:

Step 1. A factor analysis of Internet shopping attitude.

Because the measurement of the respondents' attitude toward the Internet consisted of an evaluation of the importance of 24 attributes, it was necessary to run a factor analysis to identify underlying dimensions of attitude toward Internet shopping. A principal components factor analysis with varimax rotation revealed five factors (see Table 5 for specific results).

The first factor represented issues related to security, product guarantees, safety and privacy. This factor was labeled *transaction services*. The second factor included items related to the social, personal and recreational aspects of shopping and was labeled *social shopping*. The third factor, *speedy shopping*, consisted of four items related to speed and time of shopping. The fourth factor was related to the choice of products and shopping processes and was labeled *easy choices*. The final factor included two items related to sales and saving money. It was labeled *sales/money savings*.

Attitude toward Internet shopping was then computed for each attitude dimension by calculating the sum of the products of importance and evaluation measures for each attribute comprising a particular dimension and computing the mean. On each dimension this procedure resulted in minimum and maximum means that ranged from 1 to 49, respectively. The following formula defines the mathematical procedure that was followed for each attitude dimension:

$A = \sum(e_i b_i) / n_j$, where e_i represents the importance assigned each attribute; b_i represents the belief that Internet shopping possesses each attribute and n_j denotes the number of attributes comprising each attitude dimension.

TABLE 5. FACTOR ANALYSIS ON SHOPPING ATTRIBUTES

Factors	Items	Factor Loading	Variance explained
Factor 1—Transaction Services	Payment security	.73	32.0%
	Minimal cost/time for product return	.67	
	Return policy	.66	
	Product guarantees	.65	
	Consumer information privacy	.63	
	Safety	.61	
	The latest product information	.58	
Factor 2—Social Shopping	Fun place to visit	.78	9.0%
	Being around other people	.76	
	Seeing and experiencing new things	.61	
	Seeing/touching products	.56	
	Personal sales assistance	.55	
Factor 3—Speedy Shopping	Time savings	.79	7.1%
	Freedom from hassles	.67	
	24-hour accessibility	.67	
	Overall speed of shopping process	.66	
Factor 4—Easy Choices	Being able to pay with check or cash	.65	5.4%
	Ease of finding what I want	.58	
	Instant ability to get items that I want	.45	
	A variety of product/brand choices	.45	
Factor 5—Sales/Money Savings	Sales event	.68	4.5%
	Money savings	.65	

Step 2. Identification of covariates.

Prior to running multivariate and univariate analyses of variance, demographic characteristics of the three segments of shoppers were examined. Chi-square analyses revealed that three shopper segments (Internet shoppers, product-situation specific cross-shoppers and store shoppers) were significantly different in gender, ethnicity and education (see Table 12 for specific results). Of the three significant variables, only education was selected as a covariate for a number of reasons, following guidelines specified by Hair et al (1995). First, an effort was made to minimize the number of covariates, especially because the Internet shopper group size was smaller than other groups. Second, the effects of gender and ethnicity

did not appear to be homogeneous across the three groups as compared to those of education. Therefore, MANCOVA and ANCOVA procedures were run, using education as a covariate to account for its possible influence when testing group differences in a series of independent variables.

Step 3. Disparity of group sizes.

Because of the disparity in group sizes among the three segments of shoppers, the homogeneity of the covariance matrices was first tested using the Box test for both multivariate and univariate analyses. The majority of univariate homogeneity of variance tests (i.e., Barlett-Box $F = s$) were non-significant. However, most of the multivariate tests for homogeneity of dispersion matrices (i.e., Box $M F = s$) were significant. This was expected because the Box test is highly sensitive to deviations from normality (Hair et al. 1995). An inspection of the determinants of each matrix indicated that the covariance matrix of the larger groups tended to have a larger variance. Therefore, to guard against the possibility of falsely rejecting a hypothesis of no group differences (i.e., Type I error), a more conservative alpha level of .01 was established for determining significance (Hair et al, 1995).

■ Results

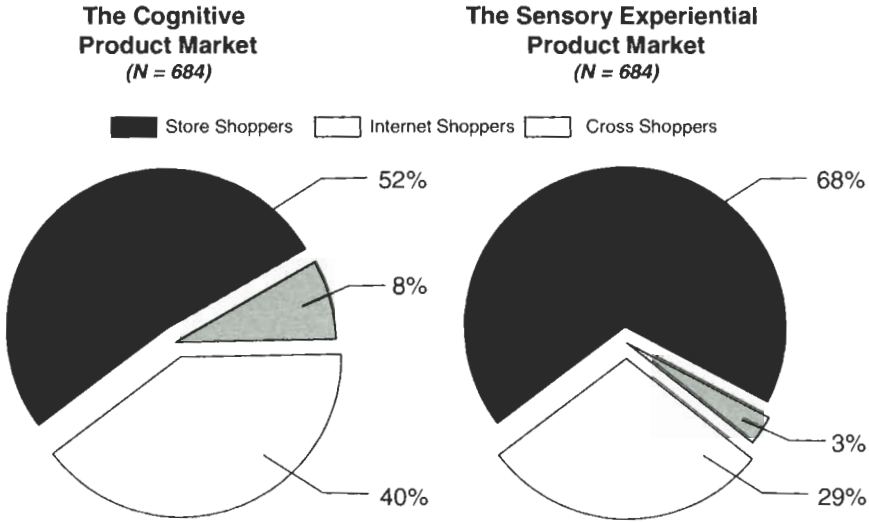
Objective 1. Identification of Situational and Product Effects on Intention to Use Internet versus Stores and Segmentation of Shopper Types.

Classification of respondents into three segments of shoppers.

Respondents were segmented by product category factors (i.e., cognitive and sensory experiential) within the context of the three shopper groups based on their intention to shop products through the Internet or stores, or to cross-shop both formats (see Figure 3). These groups were then defined for both the cognitive and sensory experiential product categories.

The cognitive product market. Those respondents who consistently indicated the intention to shop the Internet for *all* cognitive products (i.e., books, software, music and video) were classified as Internet shoppers (8%). These shoppers indicated that they would use the Internet *solely* for purchases of each of the cognitive products. Similarly, those respondents who indicated an intention *solely* to shop by store *consistently* across all cognitive products were classified as store shoppers (52%). Those respondents who indicated the choice of *either store or Internet* depending on the

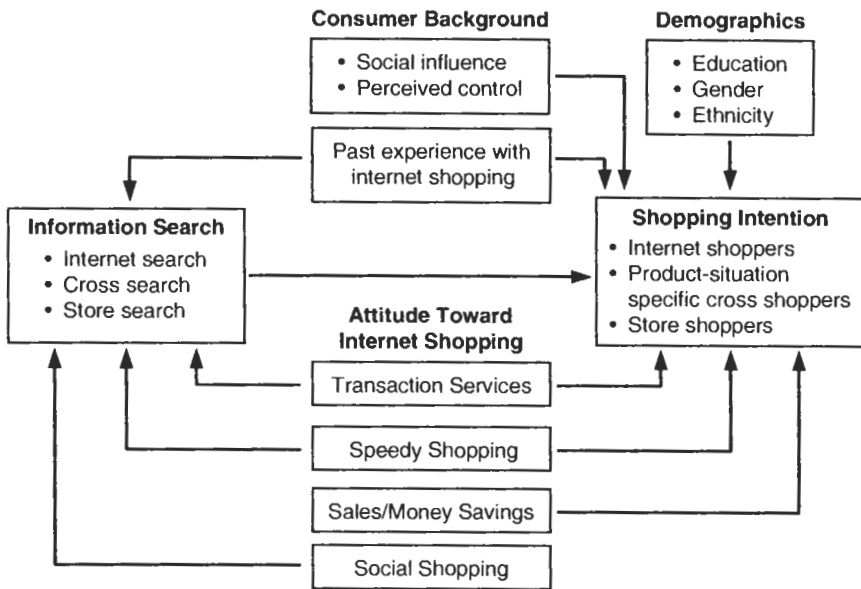
FIGURE 3 AN ESTIMATED MARKET SIZE OF DIFFERENT SHOPPER TYPES FOR COGNITIVE AND SENSORY EXPERIENTIAL PRODUCT MARKET.



desired products were classified as product-specific cross-shoppers (40%). For example, shoppers in this category may have chosen the Internet for book purchases but stores for music purchases, or vice versa.

The sensory experiential product market. The same three shopper groups were identified, in a similar manner to that employed with the

FIGURE 4 FACTORS INFLUENCING SHOPPING AND INFORMATION SEARCH MODE.



cognitive product market, for the sensory experiential product market (i.e., apparel and accessories): Internet shoppers (3%), store shoppers (68%) and product-specific cross-shoppers (29%).

Objective 2. Profiling Internet Shoppers, Product-specific Cross Shoppers and Store Shoppers.

The second objective was to profile each segment in terms of shoppers' attitude toward Internet shopping, Internet information search and other-variables.

Profiling the segments by Internet shopping attitude.

Table 6 presents the results of MANCOVA and ANCOVA for attitudes toward Internet shopping among the three groups, using education as a covariate. A separate analysis was conducted for cognitive and sensory experiential product markets.

Results indicated that the three segments of shoppers were significantly different in their attitudes toward Internet shopping for both the cognitive product market ($F = 14.5, p \leq .001$) and the sensory experiential product market ($F = 8.53, p \leq .001$). Further univariate analyses of covariance indicated that Internet shoppers exhibited significantly stronger attitudes toward the secure transaction, speedy process and sales/money savings benefits of Internet shopping than either cross-shoppers or store shoppers. Similarly, these attitudes were significantly stronger for cross-shoppers than for store shoppers. On the other hand, Internet and cross-shoppers were similar in their attitude toward the social shopping and easy choice benefits of Internet shopping but exhibited stronger attitudes regarding these benefits than store shoppers did.

Univariate analyses of covariance revealed that the three shopper groups displayed significantly different attitudes only toward the speedy process benefits of Internet shopping for the sensory experiential product market. For the remaining benefits, the attitudes of the Internet and cross-shoppers were similar but significantly stronger than those of store shoppers.

The relative strengths of attitudes toward Internet shopping were similar for both the cognitive product and sensory experiential product markets. Attitudes toward the speedy process benefits of Internet shopping were strongest, while those toward the social shopping benefits of Internet shoppers were weakest.

Profiling the segments by Internet information search intention.

Table 7 presents the results of the univariate analysis of covariance. The three segments of shoppers were substantially different in their intention

TABLE 6. MULTIVARIATE AND UNIVARIATE ANALYSIS OF COVARIANCE FOR ATTITUDE TOWARD INTERNET SHOPPING FOR THE COGNITIVE VERSUS SENSORY EXPERIENTIAL PRODUCT MARKETS

Product Market Variables	Group Means ¹				Univariate ²	
	Internet Shoppers	Cross Shoppers	Store Shoppers	F	Eta Square	Multivariate ³
The Cognitive Product Market	Transaction services	27.5	23.3	18.4	34.78***	F = 14.5***
	Social shopping	12.8 ^a	12.7 ^a	11.2	3.96*	Effect Size = .11
	Speedy shopping	36.2	28.8	23.0	53.56***	
	Easy choice	27.2 ^a	24.3 ^a	21.2	6.09***	
	Sales/money savings	29.1	24.9	18.9	42.98***	
The Sensory Experiential Product Market	Transaction services	28.6 ^a	24.4 ^a	20.2	19.97***	F = 8.53***
	Social shopping	13.5 ^a	13.2 ^a	11.5	5.04***	Effect Size = .07
	Speedy shopping	40.4	30.5	25.0	40.45***	
	Easy choice	29.4 ^a	25.1 ^a	22.1	13.77***	
	Sales/money savings	30.1 ^a	26.0 ^a	21.1	23.10***	

Note.

¹A possible mean range from 1 (the lowest possible attitude score) to 49 (the highest possible attitude score). A pair of the same superscripts indicates no difference between the two groups based on Scheffe test results.

²Univariate *df* = 2, 597.

³Multivariate *df* = 10, 1186.

p* < .05. *p* < .01. ****p* < .001.

TABLE 7. UNIVARIATE ANALYSIS OF COVARIANCE FOR INTENTION FOR INTERNET INFORMATION SEARCH FOR COGNITIVE VERSUS SENSORY EXPERIENTIAL PRODUCT MARKETS

Product Market Variables	Group Means ¹			Univariate ² F
	Internet Shoppers	Cross Shoppers	Store Shoppers	
The Cognitive Product Market	5.39	3.83	2.14	295.3***
The Sensory Experiential Product Market	4.90	3.49	1.87	166.8***
	Internet information search for cognitive products			
	Internet information search for sensory experiential products			

Note.

¹A possible mean range from 1 (search entirely by store) to 7 (search entirely by Internet). A pair of the same superscripts indicates no difference between the two groups based on Scheffe test results.

²Univariate $df = 2, 671$.

*** $p < .001$.

to search information for both cognitive ($F = 295.3, p \leq .001$) and sensory experiential products ($F = 166.8, p \leq .001$). Again, the extent to which the groups differed was more significant for the cognitive product market than for the sensory experiential product market. For both product categories, Internet shoppers were most likely to seek product information from the Internet prior to the purchase decision, while store shoppers demonstrated the strongest tendency to search for purchase information via traditional retail stores. Product-situation cross-shoppers exhibited a tendency to search for information from both the Internet and stores.

Profiling the segments by perceived control and social influence.

Table 8 presents the multivariate and univariate analysis of covariance regarding differences in perceived control and social influence among the three groups. Overall, the three groups were significantly different for both the cognitive product market ($F = 35.0, p \leq .001$) and the sensory experiential product market ($F = 20.6, p \leq .001$). Store shoppers displayed much greater difficulty in shopping through the Internet compared to Internet and product-situation specific cross-shoppers in both product markets. Internet shoppers perceived the highest level of social influence (i.e., a perception that people who were important to them thought they should use the Internet for shopping), followed by product-situation specific cross-shoppers and store shoppers.

Profiling the segments on the basis of direct experience with Internet shopping and dominant shopping modes.

Both multivariate and univariate analyses for all products indicated significant differences among the three shopper groups with regard to the reported frequency of direct Internet shopping experiences ($F = 28.2, p \leq .001$ and $F = 62.6, p \leq .001$ for the cognitive product market and sensory experiential product market, respectively) (see Table 9). As expected, Internet shoppers had the greatest shopping frequency for all products, followed by product-situation specific cross-shoppers. An interesting finding was that, for purchases of sensory experiential products, the frequency of direct Internet purchases was substantially greater for Internet shoppers than for cross-shoppers and store shoppers, as compared to purchases of cognitive products.

Table 10 presents differences among the three shopper groups in frequency with which they shopped (e.g., dominant shopping modes) a variety of retail formats including shopping malls, discount stores, the Internet and catalogs along with differences in mall shopping behaviors (e.g., frequency and expenditures). For the cognitive product market, there were significant differences among the groups in the extent to which all of the varied shopping modes were employed (Multivariate $F = 26.6, p \leq .001$). As expected, the major difference was due to group differences

TABLE 8. MULTIVARIATE AND UNIVARIATE ANALYSIS OF COVARIANCE FOR SOCIAL INFLUENCE AND PERCEIVED CONTROL FOR COGNITIVE VERSUS EXPERIENTIAL PRODUCT MARKETS

Product Market Variables	Group Means ¹				Univariate ²		Multivariate ³
	Internet Shoppers	Cross-Shoppers	Store Shoppers	F	Eta Square	F	
The Cognitive Product Market	2.49 ^a	2.94 ^a	3.87	37.4 ^{***}	.10	37.4 ^{***}	F = 35.0 ^{***}
Social influence	5.11	4.47	3.32	53.4 ^{***}	.14	53.4 ^{***}	Effect Size = .09
The Sensory Experiential Product Market	1.60	2.97	3.49	20.3 ^{***}	.06	20.3 ^{***}	F = 20.6 ^{***}
Social influence	5.45 ^a	4.70 ^a	3.71	33.8 ^{***}	.09	33.8 ^{***}	Effect Size = .06

Note:

¹A possible mean range from 1 (no difficulty) to 7 (a great deal of difficulty) for perceived control; and 1 (no social influence) to 7 (a great deal of social influence). A pair of the same superscripts indicates no difference between the two groups based on Scheffe test results.

²Univariate $df = 2, 647$.

³Multivariate $df = 4, 1292$.

*** $p < .001$.

TABLE 9. MULTIVARIATE AND UNIVARIATE ANALYSIS OF COVARIANCE FOR PAST INTERNET SHOPPING FREQUENCIES FOR COGNITIVE VERSUS SENSORY EXPERIENTIAL PRODUCT MARKETS

Product Market Variables	Group Means ¹			Univariate ²		
	Internet Shoppers	Cross-Shoppers	Store Shoppers	F	Eta Square	Multivariate ³
The Cognitive Product Market	3.21	2.06	1.15	80.7***	.21	F = 28.2***
Computer software	2.51	1.91	1.14	53.1***	.14	Effect Size = .15
Music	3.13	2.11	1.13	60.9***	.16	
Video	2.27	1.51	1.09	36.5***	.10	
The Sensory Experiential Product Market	4.00	1.78	1.14	117.2***	.27	F = 62.6***
Apparel	3.15	1.65	1.11	71.6***	.18	Effect Size = .15
Accessories						

Note:

¹A possible mean range from 1 (never) to 7 (11+ times). A pair of the same superscripts indicates no difference between the two groups based on Scheffe test results.

²Univariate *df* for the cognitive product market = 2, 646; Univariate *df* for the experiential product market = 2, 648.

³Multivariate *df* for the cognitive market = 8, 1284; Multivariate *df* for the experiential product market = 4, 1249.

***p < .001.

TABLE 10. MULTIVARIATE AND UNIVARIATE ANALYSIS OF COVARIANCE FOR ATTITUDE TOWARD INTERNET SHOPPING FOR DOMINANT SHOPPING MODES AND MALL SHOPPING BEHAVIORS

Product Market Variables	Group Means ¹				Univariate ²		Multivariate ³
	Internet Shoppers	Cross-Shoppers	Store Shoppers	Store Shoppers	F	Eta Square	
The Cognitive Product Market	Shopping malls	4.54 ^{ab}	4.98 ^{ac}	5.02 ^{bc}	2.06 ^{ns}	.01	F = 26.6 ^{***} Effect Size = .20
	Discount stores	4.77 ^{ab}	4.97 ^a	5.30 ^b	4.19 [*]	.01	
	Internet	5.11	3.56	1.72	165.0 ^{***}	.34	
	Catalogs/Mail order	4.46 ^a	3.96 ^a	3.64	5.59 ^{**}	.01	
	Mall shopping frequencies	5.85 ^{ab}	7.70 ^{ac}	6.75 ^{bc}	1.03 ^{ns}	.00	
The Sensory Experiential Product Market	Mall shopping expenditure	\$610 ^{ab}	\$699 ^{ac}	\$503 ^{bc}	2.35 ^{ns}	.01	F = 16.49 ^{***} Effect Size = .13
	Shopping malls	3.57	5.00 ^a	5.00 ^a	8.12 ^{**}	.02	
	Discount stores	3.90	5.05 ^a	5.16 ^a	6.09 ^{**}	.02	
	Internet	5.80	3.92	2.41	85.65 ^{***}	.21	
	Catalogs/Mail order	5.09 ^a	4.23 ^a	3.68	12.01 ^{**}	.04	
Mall shopping frequencies	5.28 ^{ab}	7.06 ^{ac}	9.02 ^{bc}	.92 ^{ns}	.00	F = 16.49 ^{***} Effect Size = .13	
	Mall shopping expenditure	\$781 ^{ab}	\$707 ^{ac}	\$555 ^{bc}	1.62 ^{ns}		.00

Note

¹A possible mean range for the dominant shopping modes from 1 (never) to 7 (very often). A pair of the same superscripts indicates no difference between the two groups based on Scheffe test results.

²Univariate $df = 2, 648$.

³Multivariate $df = 12, 1286$.

* $p < .05$. ** $p < .01$. *** $p < .001$. ^{ns} Not significant.

in Internet shopping as a dominant shopping mode (Univariate $F = 165.5$, $p \leq .001$). Internet shoppers demonstrated more frequent Internet use ($M = 5.11$), followed by cross-shoppers ($M = 3.56$) and store shoppers ($M = 1.72$). No differences among groups were found regarding shopping mall behaviors (i.e., extent of shopping mall use and mall shopping frequencies and expenditures). Both Internet and cross-shoppers were similar in the extent to which they used both discount stores and catalogs. However, compared to store shoppers, both groups indicated that they shopped from catalogs more often, while shopping from discount stores less often.

For the sensory experiential market, results were similar to those found for the cognitive product market, except that the extent of both shopping mall and discount store use was significantly lower for Internet shoppers ($M = 3.57$; $M = 3.90$) than for other shopper groups (cross-shopper, $M = 5.00$, $M = 5.05$; store shopper, $M = 5.00$, $M = 5.16$, respectively).

Profiling the segments by product knowledge.

There were no differences among the three segments of shoppers in their product knowledge for the sensory experiential product market (Multivariate $F = 1.09$, $p \geq .05$) (see Table 11). However, for the cognitive product market, differences among groups existed for product knowledge regarding books and computer software (Multivariate $F = 10.1$, $p \leq .001$). Compared to store shoppers, both Internet and cross-shoppers indicated similar, higher levels of product knowledge regarding books ($F = 7.67$, $p \leq .001$) and computer software ($F = 41.80$, $p \leq .001$).

Profiling the segments by demographic characteristics.

Chi-square analyses were conducted to assess differences in demographic characteristics among the three shopper groups (see Table 12). There were no differences among the three groups in terms of age, income and occupation for either the cognitive or the sensory experiential markets. However, the higher the level of education, the more likely respondents were to be Internet or product-situation specific cross-shoppers for purchases of cognitive products ($\chi^2 = 38.6$, $df = 6$, $p \leq .001$) and sensory experiential products ($\chi^2 = 23.0$, $df = 6$, $p \leq .001$). For instance, for the cognitive product market, almost 70% of Internet shoppers or product-situation specific cross-shoppers were four-year college graduates; almost 66% were postgraduates, while only 40% were high school graduates.

Similar results were obtained for the sensory experiential market. In terms of gender, a slightly greater percentage of males tended to be Internet shoppers or product-situation specific cross-shoppers for both the cognitive product market (male = 61%, female = 52%; $\chi^2 = 17.2$, $df = 2$, $p \leq .001$) and the sensory experiential product market (male = 36%, female = 27%; $\chi^2 = 8.53$, $df = 2$, $p \leq .05$). Finally, the ethnicity of shopper groups was different for both the cognitive product market ($\chi^2 = 13.6$,

TABLE 11. MULTIVARIATE AND UNIVARIATE ANALYSIS OF COVARIANCE FOR PRODUCT KNOWLEDGE FOR COGNITIVE AND SENSORY EXPERIENTIAL PRODUCT MARKETS

Product Market Variables	Group Means ¹				Univariate ²		Multivariate ³
	Internet Shoppers	Cross-Shoppers	Store Shoppers	F	Eta Square		
The Cognitive Product Market	Books	5.33 ^a	5.33 ^a	4.95	7.67 ^{***}	.01	F = 10.1 ^{***} Effect Size = .05
	Computer software	5.00 ^a	4.59 ^a	3.56	+1.80 ^{***}	.10	
	Music	5.42 ^{ab}	5.42 ^{ac}	5.18 ^{bc}	2.68 ^{n.s.}	.01	
	Video	5.16	5.29	5.10	1.71 ^{n.s.}	.00	
The Sensory Experiential Product Market	Apparel	5.38 ^{ab}	5.48 ^{ac}	5.31 ^{bc}	1.10 ^{n.s.}	.00	F = 1.09 ^{n.s.} Effect Size = .00
	Accessories	4.87 ^{ab}	5.09 ^{ac}	4.84 ^{bc}	1.93 ^{n.s.}	.00	

Note:

¹A possible mean range from 1 (not at all knowledgeable) to 7 (extremely knowledgeable). A pair of the same superscripts indicates no difference between the two groups based on Scheffe test results.

²Univariate *df* for the cognitive market = 2, 655. Univariate *df* for the experiential product market = 2, 668.

³Multivariate *df* for the cognitive market = 8, 1302. Multivariate *df* for the experiential product market = 4, 1334.

****p* < .001. ^{n.s.}: Not significant.

TABLE 12. CHI-SQUARE ANALYSIS OF GENDER, ETHNICITY AND EDUCATION BY SHOPPER TYPE FOR COGNITIVE AND SENSORY EXPERIENTIAL PRODUCT MARKETS

Product Market		Internet Shopper	Cross-Shopper	Store Shopper	χ^2
The Cognitive Product Market	Gender				
	Female (n = 315)	7%	45%	48%	17.2*** (df = 2)
The Sensory Experiential Product Market	Male (n = 356)	8%	53%	32%	
	Female (n = 318)	4%	23%	73%	8.53* (df = 2)
The Cognitive Product Market	Male (n = 355)	3%	33%	64%	
	Ethnic Group				
The Sensory Experiential Product Market	White (n = 509)	9%	48%	43%	13.6** (df = 2)
	Non-white (n = 165)	5%	65%	30%	
	White (n = 509)	4%	26%	70%	7.00* (df = 2)
	Non-white (n = 165)	1%	36%	63%	
The Cognitive Product Market	Education				
	High school (n = 149)	2%	38%	59%	38.6*** (df = 6)
The Sensory Experiential Product Market	2-year college (n = 203)	7%	54%	38%	
	4-year college (n = 217)	11%	58%	30%	
	Graduate (n = 107)	10%	56%	33%	
	High school (n = 149)	2%	15%	83%	23.0*** (df = 6)
The Sensory Experiential Product Market	2-year college (n = 203)	3%	30%	67%	
	4-year college (n = 217)	4%	33%	64%	
	Graduate (n = 107)	4%	38%	58%	

*p < .05. **p < .01. ***p < .001.

$df = 2, p \leq .01$) and the sensory experiential product market ($\chi^2 = 7.0, df = 2, p \leq .05$). A greater proportion of non-Caucasians (65% for the cognitive product, 36% for the sensory experiential product) tended to be cross-shoppers as compared to Caucasians (48% and 26%, respectively). On the other hand, a greater proportion of Caucasians (9% for the cognitive product market, 4% for the sensory experiential market) tended to be Internet shoppers than non-Caucasians (5% and 1%, respectively).

Predicting Internet information search intention.

Two stepwise multiple regression analyses were conducted, each using cognitive product Internet search intention and sensory experiential product Internet search intention as dependent variables, respectively. Independent variables included secure transaction, social shopping, speedy process, easy choice and sales/money savings attitudes toward Internet shopping, direct experience with Internet shopping, perceived control, social influence and demographic characteristics. Table 13 presents the results. Five independent variables were significant in predicting the likelihood of seeking information for cognitive products ($R^2 = .28, F = 33.2, p \leq .001$). Prior experience in purchasing cognitive products through the Internet ($\beta = .37, p \leq .001$) was the most significant predictor, followed by transaction services ($\beta = .25, p \leq .001$) and speedy process ($\beta = .21, p \leq .001$). Finally, perceived control ($\beta = -.17, p \leq .001$) and social shopping Internet shopping attitudes ($\beta = -.17, p \leq .01$) were negatively related to information seeking for cognitive products.

Three independent variables were significant in predicting the likelihood of seeking information for sensory experiential products ($R^2 = .22, F = 31.4, p \leq .001$). Prior experience in purchasing sensory experiential products ($\beta = .31, p \leq .001$) was the most significant predictor, followed by experience in purchasing cognitive products ($\beta = .17, p \leq .001$) and attitude toward Internet transaction services ($\beta = .14, p \leq .01$).

■ Discussion

Product-situation Shopper Segments.

The first objective of the study was to determine whether the product category being shopped and the shopping situation influenced behavioral intention toward selection of a retail shopping mode. It was proposed that the three segments of consumers would be identified per product/situation treatment, including primarily Internet-oriented shoppers, primarily store-oriented shoppers and cross-shoppers. The results of the study revealed that the situational task—whether the purchase was for oneself or for a gift—was not related to any of the three consumer seg-

TABLE 13. STEPWISE REGRESSION ANALYSIS OF PREDICTING INTERNET INFORMATION SEARCH INTENTION FOR THE COGNITIVE AND SENSORY EXPERIENTIAL PRODUCT MARKETS

Predictors	Beta (β) coefficient	
	Cognitive Product Internet Search	Sensory Experiential Product Internet Search
Attitude toward Internet Shopping		
Transaction services	.25***	.14**
Social shopping	-.17**	
Speedy shopping	.21***	
Easy choice	—	—
Sales/money savings	—	—
Direct experience with Internet Shopping		
Cognitive product purchase	.37***	.17***
Sensory experiential product purchase	—	.31***
Perceived control	-.17***	—
Social influence	—	—
Gender	—	—
Ethnicity	—	—
Age	—	—
Education	—	—
Occupation	—	—
Income	—	—
	R = .53	R = .46
	R ² = .28	R ² = .22
	F _(4, 344) = 33.2***	F _(3, 344) = 31.4***

** $p < .01$. *** $p < .001$.

ments. However, these three segments did exist for products falling into both cognitive and sensory experiential product markets. That is, for purchases of products that might be evaluated using perception and/or intellect such as books, computer software, music and videos, 48% of 684 consumers expressed an intention to shop either exclusively via the Internet or to cross-shop both stores and Internet, depending on the product being purchased. The results do indicate a relatively near-term competitive impact of Internet shopping on store shopping for potential purchases of these products. However, more research is needed to bring clarity to the issue. On the other hand, 52% indicated that they would shop only through stores, independent of the product being purchased.

For purchases of products requiring greater sensory interaction with the product, such as apparel and accessories (i.e., sensory experiential products), the effect of Internet shopping on store shopping may not be as imminent as it may be for cognitive products. Store-only shoppers accounted for over two-thirds of the market (e.g., 68% of 684), while Internet shoppers made up only 3% and cross-shoppers made up only 29% of consumers.

Considering the respective distributions of intended Internet and store-only shoppers versus cross-shoppers by each product market, the data suggest that the Internet may be the preferred shopping mode for products requiring a greater degree of perceptual and intellectual evaluation as a part of the purchasing process, such as books and computer software. On the other hand, for merchandise that consumers may feel compelled actually to see, touch and/or try-on prior to purchasing, store-based shopping may still be the preferred mode. The percentage distributions also suggest that, as a shopping format innovation, Internet shopping has reached a later stage of diffusion through its market segment for cognitive products than for sensory experiential products.

Finally, the greater levels of acceptance of Internet shopping for cognitive products should be expected, since perceived risk in the purchase of cognitive products is generally lower than for the purchase of sensory experiential ones. Additionally, as with other retailer formats, there may always be a segment of consumers who select only stores for shopping, especially for experiential-type products. However, future advancements with imaging and virtual reality technologies may enhance the experiential nature of Internet shopping and serve to dissipate risk associated with purchasing sensory experiential products.

Profiling Shopper Segments.

The study's second objective was to develop descriptive profiles of consumers in each segment, using attitudinal and consumer background/experience variables. In general, Internet-only shoppers tended to display stronger attitudes toward purchasing both categories of products from the Internet than either cross-shoppers or store-only shoppers. This finding was especially notable for purchases of cognitive products, with attitudes regarding speed of shopping, sales/money savings and transaction services being important factors differentiating the three shopper segments. From an innovation adoption perspective, the fact that cognitive product segments are clearly differentiated may also confirm that Internet shopping is diffusing more readily through this consumer market—a trend which is also supported by Internet sales trends for these products (Ernst & Young, LLP, 2000).

For purchases of sensory-experiential products, attitudes toward Internet shopping played a definitive role in differentiating Internet-only

and cross-shoppers from store-only shoppers. However, with the exception of their stronger attitude regarding the speed of Internet shopping, the attitudes of Internet-only and cross-shoppers toward other benefits associated with Internet shopping were similar. This finding is also consistent with sales trends for these types of products, indicating that general acceptance of Internet shopping across this market segment is developing more slowly than for cognitive products.

The results observed for other background/experience consumer variables followed a pattern supporting the idea that more positive overall feelings regarding Internet shopping were held by the Internet-shopping segment, followed by the cross-shopper segment, while more negative overall feelings were held by the store-shopper segment. In terms of consumers' intentions to use the Internet to search for information in both product markets, Internet shoppers indicated a strong motivation to search entirely by Internet, while store shoppers expressed a desire to search entirely by store. Similarly, cross-shoppers reported that they would cross-search both stores and the Internet, regardless of the product being shopped.

The perceived difficulty of shopping via the Internet and the extent of social influence in the choice of a shopping mode was also strongly related to membership in one of the three shopper segments, independent of the type of product being shopped. In general, Internet-only shoppers perceived Internet shopping to be of little difficulty for them and experienced greater social influence regarding Internet shopping, while store shoppers perceived a greater level of difficulty and experienced less social influence in this shopping mode. The only variations in the pattern of the relationships among these variables and membership in the three shopper segments for each product market was discovered in the differences between Internet-only and cross-shoppers. For purchasing cognitive products, Internet-only and cross-shoppers both expressed a perceived low level of difficulty. Similarly, there were no differences between these segments in the degree to which they perceived social influence regarding the purchase of sensory-experiential products.

Independent of product category, direct experience with Internet shopping was strongly related to membership in each segment, with Internet-only shoppers consistently reporting a statistically higher frequency of Internet shopping, followed by cross-shoppers and store-only shoppers, respectively. Similarly, Internet shoppers showed a significantly higher score on the use of Internet and catalog/mail-order shopping both for the cognitive and the sensory experiential product market relative to store-only shoppers. Also, the use of catalog shopping by both Internet-only and cross-shoppers was similar. No differences among the groups were found in their mall shopping behaviors (e.g., expenditure levels and

frequencies). These findings are consistent with other studies on nonstore shopping showing that previous nonstore shopping experience was a predictor of innovative forms of nonstore shopping (e.g., Eastlick and Feinberg, 1994; Eastlick and Lotz, 1999; Gehrt and Carter, 1992; Shim and Mahoney, 1991).

The importance of product knowledge for differentiating among the shopper segments on the basis of purchases in each product category was negligible. The only exception was found for such cognitive products as books and computer software in that store shoppers reported lower levels of knowledge than either Internet or cross-shoppers. The positive relationship between higher levels of product knowledge and purchasing intent is consistent with actual higher sales volumes reported for products such as books and computer software relative to apparel and accessory products (Ernst & Young LLP, 2000).

Finally, independent of the product market, Internet-only and cross-shoppers were more likely to be male and to have completed higher levels of education. Also, Internet-only and store-only shoppers were more likely to be Caucasian than non-Caucasian. However, a greater percentage of cross-shoppers were non-Caucasian. For the most part, these results are consistent with other demographic statistics reported for Internet users (Georgia Tech, 1999).

Factors Predicting the Intention to Search for Product Information.

The final objective of the study was to identify factors influencing consumers' intention to use the Internet to search for product information among Internet shopping attitudes and consumer experience/background variables. These predictors varied by product category. Previous purchasing experience with cognitive products was the strongest predictor of Internet search for cognitive products, while previous experience with experiential products was the strongest predictor of Internet search for experiential products. The two product categories differed in other predictors. Internet information search on cognitive products was also positively influenced by attitudes regarding the secure transaction and speedy shopping benefits of Internet shopping and negatively influenced by the perceived social shopping benefits of the Internet and the perceived difficulty of shopping from the Internet. Internet information search for experiential products was also positively influenced by the perceived social shopping benefits of Internet shopping for experiential products.

That the intent to search for information via the Internet for cognitive products relative to sensory-experiential products is more thoroughly explained by these data may be consistent with the idea that the acceptance of Internet shopping for cognitive products is more highly diffused through that market segment and has achieved greater market penetration than acceptance for sensory experiential products, in which penetration appears to be confined to innovators and a few early adopters of Internet shopping. As purchasing from new shopping formats diffuses through consumer segments, consumers develop better formed attitudes regarding shopping costs and benefits of the format. Among these attitudes, the best predictors of Internet use to search for information were prior purchasing experience, the prospect of a secure transaction and the likelihood of a speedy shopping experience. For purchases of sensory-experiential products, attitudes are not well formed. Rather, only prior purchasing experience and the social influence of other Internet shopping innovators are contributing to use of the Internet to shop for information search in this product area.

■ Conclusions and Implications

A multitude of strategies may be available to retail and shopping mall managers competing in the new "Internet shopping" era. The results of the present study may provide important implications for the development of these strategies. Two strategic alternatives include "bricks-and-mortar" retailers competing directly with Internet retailers by offering "Internet shopping-type benefits" and combining forces with Internet retailers in a synergistic effort to serve consumers from all shopper categories. In essence, the latter approach would use the superior characteristics of each channel to vie for a wide range of consumers.

In order to compete directly with Internet retailers for their shoppers, the research results suggest that "bricks-and-mortar" retailers expediting the shopping process is an important benefit for shoppers of both cognitive and experiential products. Mall developers have already begun to respond to this call for speedy service and product acquisition. For example, General Growth Properties, Inc. has begun to group competing stores together, to enhance directories for faster access to stores and to remove planters and other obstacles that hinder consumers' location of stores. These strategies have been implemented to decrease the time consumers spend in the mall (Coleman, 2000). In essence, by catering to the needs of time-starved consumer groups in a similar manner (i.e., making shopping a quick process by removing obstacles obscuring stores), strip malls have become a meaningful force in the mall industry (Walker, 1991). The newer mall prototype may give consumers more amenities

than the typical strip mall (i.e., provide more services) yet make the shopping experience more time-efficient than the present-day regional mall.

In an effort to vie for Internet consumers, mall developers must be careful not to "offend" the store-only shopper by radically changing the nature of the traditional mall shopping experience. This may necessitate a strategy whereby malls are targeted toward particular consumer segments, meeting their unique needs. Alternatively, malls may be built so that specific, smaller wings offer frequently-purchased items through high-speed processing and self-service for consumers drawn to an Internet-type environment. Another mall extension could be devoted to consumers desiring more services and a leisurely shopping experience, e.g., the traditional store-only consumer. These mall "extensions" might be clearly differentiated by product type, i.e., experiential sensory versus cognitive, given the importance of the traditional store experience for the former, and of the speedy, self-service Internet-type experience for the latter. This is consistent with Peterson, Balasubramanian and Bronnenberg's (1997) prediction that future consumers will choose a shopping medium based, in part, on product characteristics.

In the attempt to compete directly with the Internet, another factor that appears to be important, especially for purchasers of cognitive products, is that of secure transactions. One component of this factor is making available the latest product information. The Internet has been touted as the best medium for this type of communication (Peterson, Balasubramanian and Bronnenberg, 1997). Confirming this expectation, the lack of adequate information in stores has been cited as one of the reasons that consumers may initially be motivated to purchase products on the Internet (Underwood, 1994). Retailers and mall developers are presently making strides in this area through the installation of interactive, computer kiosks (e.g., Schwartz, 1992).

In addition to the importance of consumer attitudes, the linkage between the consumer's information search and shopping mode choice also appears to be quite critical. In this study, Internet-only shoppers tended to *search* for product information on the Internet to a greater extent than did cross-shoppers and store-only shoppers. Additionally, these Internet shoppers also *purchased* more merchandise via the Internet than did other shoppers. Therefore, these findings may dispel the notion that shoppers tend to use the Internet only for *product information search* with purchasing taking place at a *store location*. Rather, the results point to consistent choices between information search and purchasing channels. Thus, making product information easily available to consumers may be an important competitive tool that directly affects sales.

To compete with the Internet, some store retailers are incorporating consumer-to-consumer informational vehicles in their offerings. However, there may be less need for such consumer-to-consumer interaction, e.g., Internet-type chat rooms, in the “bricks-and-mortar” facility. No relationship was found between attitudes toward the social shopping aspects of the Internet and the experiential product Internet search. In fact, *negative* attitudes toward the social shopping aspects of the Internet predicted *greater intention* to search via the Internet! However, this should be understood in light of the fact that Internet-only shoppers and cross-shoppers deemed the Internet as significantly more “social” than did store shoppers. Future research is warranted to understand the seemingly contradictory nature of these results.

Lastly, retailers and mall developers should understand the greater importance of social influence on online shoppers and cross-shoppers, as compared to traditional store shoppers. Perhaps a competitive strategy could be utilized whereby promotions portray aspirational and/or peer members of Internet consumers describing their positive experiences as mall patrons.

Rather than competing with the Internet, some analysts suggest that “bricks-and-mortar” retailers incorporate it as part of their retail strategy (e.g., Ernst & Young LLP, 2000). This approach has been used successfully with other nonstore media, including toll-free telephone numbers, television shopping networks and catalogs (Burke, 1997). Recently, some food retailers have been particularly innovative in utilizing the synergistic approach. For example, consumers at Bashas’ grocery store have the option of purchasing groceries at a store or ordering their groceries on the Internet and subsequently having them delivered to their home. Other retailers have combined the positive aspects of both online and store purchases by allowing consumers to return Internet-purchased products to “bricks-and-mortar” retailers.

Because this research had its limitations, future research is warranted to extend and expand its scope. The present study was a cross-sectional research design. Therefore, trends over a period of time could not be determined. Longitudinal research would be most helpful in determining consumer patterns with respect to attitudes, behavioral intentions, etc. Also, consumers’ past behaviors were collected on a self-report basis. Perhaps future efforts could obtain the actual behavior of consumers through electronic data collection in order to avoid self reporting errors resulting from failed memory, etc. Lastly, the model used in this study may not have incorporated all of the relevant consumer variables. For instance, the consumer’s involvement with the product may well mediate or moderate choices between retailing media.

■ References

- Ajzen, I. (1985), "From Intentions to Actions: A Theory of Planned Behavior," In J. Kuhland and J. Beckman (eds.), *Action Control: From Cognitions to Behavior*, Heidelberg: Springer-Verlag, 11–39.
- (1991), "The Theory of Planned Behavior," *Organizational Behavior and Human Decision Process*, 50, 179–211.
- and M. Fishbein (1980), *Understanding Attitudes and Predicting Social Behavior*, Englewood Cliffs, NJ: Prentice Hall.
- Belk, R.W. (1975), "Situational Variables and Consumer Behavior," *Journal of Marketing*, 11, 156–163.
- Burke, Raymond R. (1997), "Do You See What I See? The Future of Virtual Shopping," *Journal of the Academy of Marketing Science*, 25(4), 352–360.
- Coleman, Calmetta Y. (2000), "Making Malls (Gasp!) Convenient," *Wall Street Journal*, February 8, p. B1, B4.
- Eastlick, Mary Ann (1996), "Consumer Intention to Adopt Interactive Teleshopping," *Marketing Science Institute Working Paper Report* (No. 96–113), Cambridge, Mass: Marketing Science Institute.
- and R.A. Feinberg (1994), "Gender Differences In Mail-Catalog Patronage Motives," *Journal of Direct Marketing*, 8 (Spring), 37–44.
- and Sherry Lotz (1999), "Profiling Potential Adopters and Non-Adopters of An Interactive Electronic Shopping Medium," *International Journal of Retail & Distribution Management*, 27(6), 209–223.
- Ernst & Young LLP (1998), *Internet Shopping: An Ernst & Young Special Report*, Washington D.C.: National Retail Federation.
- (1999), *The Second Annual Ernst & Young Internet Shopping: The Digital Channel Continues to Gather Steam*, Washington D.C.: National Retail Federation.
- (2000), *Global Online Retailing: An Ernst & Young Special Report*, Washington, D.C.: National Retail Federation.
- Fishbein, M. and I. Ajzen (1975), *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*, Reading, Mass: Addison-Wesley.
- Gehrt, K.C. and K. Carter (1992), "An Exploratory Assessment of Catalog Shopping Orientations," *Journal of Direct Marketing*, 6 (Winter), 29–39.
- Gentleman, K.L. (1999), "Mall Sales are Related to Customer Demographics and Shopping Habits: Combined Analysis of 1997 and 1998 Data," *ICSC Research Quarterly*, 6(2), 5–7.
- Georgia Tech (1999), "GVU's 10th WWW User Survey," at <http://www.cc.gatech.edu>
- Hair, J.F., R.E. Anderson, R.L. Tatham and W.C. Black (1995). *Multivariate Data Analysis with Readings*, (4th ed.). New York: Macmillan.

Hoffman, D., W.D. Kalsbeek and T.P. Novak (1996), "Internet and Web Use in the United States: Baselines for Commercial Development," at <http://www2000.ogsm.vanderbilt.edu>

Korgaonkar, P. and G.P. Moschis (1987), "Consumer Adoption of Videotex Services," *Journal of Direct Marketing*, 1 (Autumn), 63-71.

Master Card International (1996), "New Competitor or New Frontier?" *Stores*, 78 (February), 19-20: MC2-MC23.

Peterson, Robert A., Sridhar Balasubramanian and Bart J. Bronnenberg (1997), "Exploring the Implications of the Internet for Consumer Marketing," *Journal of the Academy of Marketing Science*, 25(4), 329-346.

Reedy, W. (1999), "Global Retailing and E-commerce in the New Millennium," Speech presented at the *4th Annual Global Retail Symposium*, (March), University of Arizona, Tucson, AZ.

Schwartz, Evan I. (1992), "The Kiosks Are Coming, the Kiosks Are Coming," *Business Week* (June 22), p. 122

Sheppard, B.H., J. Hartwick and P.R. Warshaw (1988), "The Theory of Reasoned Action: A Meta-Analysis of Past Research with Recommendations for Modifications and Future Research," *Journal of Consumer Research*, 15, 325-343.

Shim, S. and M.F. Drake (1990), "Consumer Intention to Utilize Electronic Shopping," *Journal of Direct Marketing*, 3 (Summer), 22-33.

——— and M. Mahoney (1991), "Electronic Shoppers and Nonshoppers Among Videotex Users," *Journal of Direct Marketing*, 3 (Summer), 29-38.

"The Online Revolution," (1999, July 21), *Wall Street Journal*, R6.

Underwood, Elaine (1994), "Mall Busters, Like Crime, A Boon for Home Shopping," *Brandweek*, 35(3), 18-20.

Walker, Chip (1991), "Strip Malls: Plain but Powerful," *American Demographics*, 13(10), 48-51.

■ Acknowledgments

The authors wish to thank their industry mentor, Mr. John Bucksbaum, Chief Executive Officer, General Growth Properties, Inc., for his insightful comments and assistance for the project. They also wish to thank the ICSC Educational Foundation for its continuous support for scholarly research projects.