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# To Look or Book: An Examination of Consumers' Apprehensiveness toward Internet Use

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In a series of three studies, a two-factor measure of apprehension toward Internet use was developed and tested among three independent samples of consumers. The relationship between general Internet apprehensiveness (GIA) and transactional Internet apprehensiveness (TIA) was examined in concert with the relationship between consumers' online information seeking, purchasing intentions, and behaviors. Results indicated that (1) a two-factor measure of GIA and TIA demonstrated construct validity across three independent samples of potential Internet users, (2) GIA is more strongly related to perceptions of Internet use for information seeking compared to online purchasing, and (3) TIA is more strongly related to perceptions of online purchasing activities and reported online purchasing behavior compared with perceptions of online information-seeking behavior. Implications for management practice and further research are presented.

## **Keywords**

Internet apprehension, innovation resistance, Internet consumerism

## **Disciplines**

Hospitality Administration and Management | Other Computer Sciences | Tourism and Travel

## **Comments**

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## **To Look or Book: An Examination of Consumers' Apprehensiveness toward Internet Use**

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### **Abstract**

In a series of three studies, a two-factor measure of apprehension toward Internet use was developed and tested among three independent samples of consumers. The relationship between general Internet apprehensiveness (GIA) and transactional Internet apprehensiveness (TIA) was examined in concert with the relationship between consumers' online information seeking, purchasing intentions, and behaviors. Results indicated that (1) a two-factor measure of GIA and TIA demonstrated construct validity across three independent samples of potential Internet users, (2) GIA is more strongly related to perceptions of Internet use for information seeking compared to online purchasing, and (3) TIA is more strongly related to perceptions of online purchasing activities and reported online purchasing behavior compared with perceptions of online information-seeking behavior. Implications for management practice and further research are presented.

*Keywords:* Internet apprehension; innovation resistance; Internet consumerism

### **To Look or Book: An Examination of Consumers' Apprehensiveness toward Internet Use**

The Internet is now an established marketing and transaction channel for a variety of consumer goods and services. In a report of U.S. e-commerce in 1999, the U.S. Department of Commerce reported that while e-tail contributed 0.5%, or \$15 billion, of total retail sales in 1999, the travel industry saw ecommerce revenue responsible for 21% of total revenues (<http://www.census.gov/econ/www/papers/estatstext.pdf>). Travel-related products and services have consistently been identified as a product category with a good fit to online marketing with a high potential for online consumer-provider relationship building (Kierzkowski et al. 1996; Weber and Roehl 1999). Travel-related products are expected to continue to lead online retail spending, with an estimated \$12.8 billion in annual retail sales by the year 2002 (Canedy 1999). The travel industry is well on its way to reaching this estimated level of online spending, as 21 million Americans purchased online travel products and services in 2000 (Pastore 2000).

Given the growth potential for online marketing, researchers have begun to closely examine (1) consumers' Internet usage patterns (Cartellieri et al. 1997; Hoffman and Novak 1996), (2) the products and services that appear best suited to Internet marketing (Kierzkowski et al. 1996; Alba et al. 1997), (3) technological developments surrounding Internet implementation and use in marketing and Internet commerce (Steinfeld, Kraut, and Chan 1998), and (4) the consumer profile of the Internet users based on specific behavioral and sociodemographic characteristics (Bonn, Furr, and Susskind 1999; Weber and Roehl 1999).

With the recent surge of Internet usage and availability came an increased potential for information overload. Seasoned Web navigators and novices alike find it overwhelming at times to sort through numerous search engines (cf. Hotelrooms.com 2001), irrelevant advertisements and links, and misleading or inaccurate information. With these limitations of Internet usage still

present after several years of exponential growth in both the business-to-business and business-to-consumer domains, consumers remain cautious about how they use and approach the Internet to gather information and purchase products and services.

While the Internet has applications in many business settings, this investigation is presented to examine the Internet consumer in a business-to-consumer setting. We will investigate the Internet as a communication and transaction channel and describe how retail consumers view the Internet, with a specific focus on their perceptions of online information seeking and online retail-based transactions. Based on existing research in communication and marketing, there are three specific objectives of this article. The first objective is to develop, test, and validate a two-factor measure of consumers' Internet apprehensiveness that describes consumers' perceptions of the Internet for use as an information-seeking tool and as a medium to conduct retail transactions. Our second objective is to examine the relationship between Internet apprehensiveness and consumers' perceived online information-seeking and purchasing behaviors. Our third objective is to assess the relationship between consumers' Internet apprehensiveness and reported online expenditures.

### **Communication and the Internet**

A number of studies have examined marketing and marketing activities as a form of communication exchange (cf. Boorum, Goolsby, and Ramsey 1998; Duncan and Moriarty 1998; Hoffman and Novak 1996). These studies have demonstrated that communication and marketing processes are complementary and parallel in many ways (Duncan and Moriarty 1998). The Internet as a marketing resource, however, is still in its infancy (Hagel and Sacconaghi 1996; Hoffman and Novak 1996), and this point is exemplified in two investigations examining communication exchange and consumer information-seeking behaviors. One investigation

offered a detailed typology of tourist information-seeking strategies but did not identify the Internet as a potential information source in its analyses (cf. Fodness and Murray 1998). A second investigation identified a parallel between the process of marketing and the process of communication by presenting the communication-based issues of message production, message sending and receipt, and feedback in the information exchange process (cf. Duncan and Moriarty 1998). While identifying technological innovations in a general sense, they too did not address the unique communicative properties of the Internet in their arguments. From these investigations, it is clear that our understanding of the Internet as a marketing tool is still developing and that communication is an inherent part of the marketing process.

The Internet potentially offers a rich, dynamic environment for the exchange of information and resources, and it can be used for consumer-based and firm-based activities (Alba et al. 1997; Deighton 1997). There are many potential benefits to Internet use in the retail market. Internet users typically have access to enhanced information-seeking capabilities, a large number of vendors or sellers to choose from, and/or enhanced price comparison capabilities (Pastore 2000). On the other hand, Internet users face several limitations when they approach the Internet as an informational resource (Sarkar, Butler, and Steinfield 1998) and as a transactional medium (Deighton 1997; Jarvenpaa and Todd 1997). First, because no firm “rules” govern the credibility of Internet postings, Internet users are generally not protected from retrieving false, outdated, or misleading information. Second, the Internet and its related technologies are not necessarily compatible with the wide range of software, hardware, Web site locations, and citation addresses; these incompatible features may limit an Internet user’s ability or desire to use or access certain data types over the Internet. Finally, the security of consumers’ identities and payment information often raises concerns among Internet users when gathering information or

making purchases online (Bonn, Furr, and Susskind 1999; Hotelrooms.com 2001). In addition to the issues noted above, consumers have also reported complaints surrounding the degree of personal attention received while using Internet services (i.e., customer service), difficulty in locating specific products or services, and lack of competitive pricing (Jarvenpaa and Todd 1997). Many of these limitations or concerns are being addressed with the advent of Internet-based companies, such as Amazon.com, who offer a wide variety of price-competitive products, user-friendly Websites, “secure” transactions, and a high level of customer service. However, one limitation that is not likely to be addressed as quickly is the lack of unmediated face-to-face interaction, which results from more traditional communication-based consumer-provider exchanges (Deighton 1997). For Internet users to become more comfortable in acquiring information, goods, and services through the Internet, providers and users alike need to effectively deal with the limitations noted above, namely, credibility, accuracy, technology, and security.

### **Communication Apprehension**

Communication apprehension is presented here as a guiding theoretical framework to examine Internet consumers’ perceptions of Internet use in online information-seeking and purchasing activities. We introduce the concept of Internet apprehensiveness as an integration of the concepts of communication apprehension (cf. Allen and Bourhis 1996; McCroskey 1977, 1978) and resistance to innovation (cf. Ram 1989; Sheth 1981). Communication apprehension is defined as the unwillingness of an individual to engage in communication behavior as either a sender or a receiver (Pate and Merker 1978). Communication apprehension has been studied mostly in terms of public speaking, stage fright, and participation in groups (Allen and Bourhis 1996). Research examining communication apprehension has indicated that communication



apprehension is moderately correlated ( $r = .22$ ) with computer anxiety (Carlson and Wright 1993). When considering Internet communication, the relationship between communication apprehension and computer anxiety is particularly relevant given that communication using the Internet necessarily involves a computer and its related technology. Communication apprehension has been primarily identified as a behavioral construct, with psychological elements that carry across communication episodes or events, in the form of attitudes and perceptions toward communication (Daly 1978; Parks 1980). Therefore, communication apprehension surrounds specific communication behaviors and influences an individual's perception of, and desire to, engage in those behaviors.

### **Communication Apprehension and the Internet**

The Internet is one of the newest avenues for information seeking and business transactions (i.e., communication). It is likely that Internet users will vary in their comfort level with using the Internet and will require adjustment time to comfortably engage in Internet communication and interchange (Weber and Roehl 1999). It is during this adjustment period that Internet apprehensiveness is likely to emerge and be quantifiable among individuals. As individuals experience Internet communication, they will identify specific comforts and discomforts associated with Internet communication and will modify their communication behavior based on their experiences. The adjustment period is likely to be longer for Internet users to gain comfort with more complex Internet interaction, such as making online purchases, compared with simple information-gathering activities, which is similar to the desensitizing effect reported in communication apprehension research (McCroskey 1970). We propose here that an individual's discomfort with Internet use can be gauged and measured in a similar fashion to communication apprehension in traditional communication episodes.

## **Innovation Resistance**

Given the Internet's considerable influence in the marketplace among buyers and sellers (Hagel and Singer 1999), it is safe to say that at a macro level, the Internet has been accepted as a communication medium. At this point, consumers' level of acceptance of the Internet as a communication medium pushes it beyond the classic diffusion-of innovations framework (cf. Rogers 1976), because early adoption of the Internet has come and gone. It appears more practical to look at Internet usage within the framework of innovation resistance (Ram 1987, 1989; Sheth 1981), as not all consumers are convinced that the Internet is a viable information source and transaction channel (Canedy 1999). Taking this perspective, a case could be made for examining the factors that block Internet adoption and use rather than the elements that lead to adoption.

Two factors identified by Ram (1989) are believed to influence individuals' adoption behavior. First, perceived risk is defined as the degree to which an individual views adopting an innovation as risky. Perceived risk includes elements of functional risk (fear of performance uncertainty), economic risk (fear of financial costs associated with the innovation), social risk (fear of social ridicule surrounding the use of the innovation), and psychological risk (fear of psychological discomfort) (Ram 1989). Second, cognitive resistance is defined as an individual's resistance stemming from a need for additional innovation-based information to affect an existing belief structure about a specific adoption (Ram 1989; Rogers 1976). Simply put, innovation resistance is the extent to which individuals remain apprehensive about using a new or different product. Many of the elements of innovation resistance are directly applicable to Internet use and adoption, as potential and actual Internet users likely weigh the influence of both perceived risk elements and cognitive resistance elements in their Internet usage behavior.

## **Internet Apprehensiveness**

Individuals' resistance to adopt or use an innovation, such as the Internet, is similar to the phenomenon of communication apprehension where fear or resistance influences individuals' desire to engage in a specific communication behavior. On the basis of research examining communication apprehension, we present a two-dimensional conceptualization of Internet apprehensiveness to address general Internet apprehensiveness, which is not necessarily event specific, and transactional Internet apprehensiveness, which is related to Internet use in commercial transactions for goods and services. Although conceptually related, we present general apprehensiveness and transactional apprehensiveness as two independent constructs.

### **General Internet apprehensiveness**

General Internet apprehensiveness (GIA) is defined as an individual's resistance to, or fear of, the Internet as a form of communication in terms of online information seeking and communication. GIA does not include a specific referent per se but taps into an individual's perception of using the Internet for a variety of communication activities, ranging from asynchronous information seeking (i.e., person-to-machine interaction) to synchronous information exchange (e.g., mediated person-to-person exchange). Online communication and interaction are complex, given the range of possible interactions, and do not necessarily involve reciprocation in the communication exchange between the sender and receiver. This application is different from the arguments presented in the research to date on communication apprehension involving public speaking engagements, where individuals typically have little or no option to avoid engaging in the communication activity under study.

### **Transactional Internet apprehensiveness**

Transactional Internet apprehensiveness (TIA) is defined as an individual's resistance to, or fear of, engaging in commerce-based transactions over the Internet. TIA assesses individuals' willingness (or lack thereof) to make online purchases, to use credit cards over the Internet, and their level of comfort or anxiety they report regarding spending specific dollar amounts on the Internet. Individuals are likely to report varying degrees of TIA depending on the involvement level required by the consumer to complete the transaction. Applying the framework of Internet apprehensiveness proposed here, we ask the following three research questions:

***Research Question 1:*** Can Internet apprehensiveness be measured as two distinct dimensions consisting of general apprehensiveness and transactional apprehensiveness?

***Research Question 2:*** What relationship do GIA and TIA have with consumers' desire to use the Internet for online information seeking and making online purchases?

***Research Question 3:*** What relationship do GIA and TIA have on consumers' reported online purchasing behavior?

To test the three research questions proposed above, three interrelated studies are presented. In Study 1, we develop and test a two-factor model of Internet apprehensiveness (Research Question 1). In Study 2, we validate the GIA and TIA measures using a second sample and examine the relationship of GIA and TIA to consumers' intentions to conduct online information seeking and transactions for travel-related products and services (Research Question 2). In Study 3, we conclude the investigation with an examination of the relationship between GIA and TIA, and consumers' reported online purchasing behavior (Research Question 3).

## Study 1: Scale Construction and Validation

### Method

#### *Procedure*

During 1998, 697 travelers were surveyed during a trip to Florida. Using a randomized day/site/time collection methodology, area visitors were asked to complete a 10-minute interview. The participants were solicited from airports, malls, and retail centers. Of those contacted, 74% ( $n = 518$ ) completed the personal interviews. The participants were 54% male and 46% female. Nineteen percent of the respondents indicated that their primary trip purpose was business related, 63% reported a leisure- or vacation-related trip purpose, 13% indicated a conference- or convention-related purpose, 4% were attending a college graduation, and 1% reported some other trip purpose.

#### *Measurement*

During the interview, the participants responded to queries from a standard questionnaire that addressed specific details concerning their trip, including their primary destination and demographic profile. An additional inquiry assessed the participants' Internet apprehensiveness. GIA was assessed using an 11-item scale, and TIA was assessed with a 14-item scale, both adapted from McCroskey's (1978) work specifically for this investigation. The Internet apprehensiveness items were presented on a 5-choice Likert-type metric, where 5 indicated a high level of apprehensiveness. The items asked in reverse format were recoded for alignment with the other items.

### Analyses

To assess the dimensionality of the GIA and TIA measures as proposed in Research Question 1, principal components exploratory factor analysis with Varimax rotation was applied

to the data. Factor and item retention were based on (1) a scree plot, (2) items not displaying notable cross-loadings with other factors, and (3) items exhibiting principal factor loadings above .40. Any items that did not meet the evaluative criteria were removed from the final factor solution.

## **Study 1: Results and Discussion**

### **Initial exploratory factor analysis**

In response to Research Question 1, the initial principal components analyses suggested a four-factor solution using varimax rotation. Two of the four emergent factors were single-item factors and were excluded from further analyses (GIA item 3 and TIA item 13). The remaining items were reanalyzed, and the scree test suggested that two factors be retained.

An examination of the factor loadings indicated that two items did not meet the retention criteria. GIA item 1 displayed a factor loading below .40, and TIA item 17 showed its highest factor loading on the GIA scale. Three additional TIA items (items 12, 24, and 25) exhibited factor loadings above .40 on the GIA scale, but we retained these items in the TIA scale because their factor loadings were notably higher on the TIA factor (.50 vs. .74, .45 vs. .66, and .46 vs. .68, for TIA items 12, 24, and 25, respectively, on the GIA vs. the TIA dimensions). The final factor solution consisted of 21 items and was ultimately obtained by specifying a two-factor solution following the removal of the nonconsistent items identified above. The rotated sum of squares loadings from the final two-factor solution explained 74% of the variance and resulted in (1) a 9-item representation of GIA from the 11 original items ( $\alpha = .97$ ) and (2) a 12-item measure of TIA from the 14 original items ( $\alpha = .95$ ).

The exploratory factor analyses identified two sets of reliable items that sufficiently represented each hypothesized construct, suggesting that Internet apprehensiveness be

conceptualized in terms of general influences relating to Internet communication and interaction and influences specifically related to making transactions over the Internet. The first two columns of Table 1 report the final factor loadings, the eigenvalues, and the percentage of variance explained for each final item in the factor solution.

## **Study 2: Predictive Validity of the GIA and TIA Scales**

### **Method**

#### *Procedure*

During 1998, 728 travelers were surveyed during a trip to Florida, using the randomized day/site/time sampling method applied in Study 1 above. Of those contacted, 57% ( $n = 412$ ) agreed to complete the interview, yielding a final usable sample of 243 after listwise deletion was applied. The research participants responded to queries from the same questionnaire applied in Study 1, addressing their recent travels, including their primary destination, preferred accommodation types, and other travel-related expenditures. Additional questions assessed the participants' demographic profile, Internet usage characteristics, and Internet apprehensiveness. The participants were 49% male and 51% female, between the ages of 18 and 75 ( $M = 38.72$ ,  $SD = 12.51$ , median = 38). Thirty-five percent of the respondents indicated that their primary trip purpose was to attend a meeting or convention, 6% indicated another business-related purpose, 35% reported a leisure- or vacation-related purpose, and 24% indicated some other trip purpose.

#### *Measurement*

Using the final factor structure retained from the exploratory factor analyses in Study 1, GIA was measured with 9 items and TIA was measured with 12 items, using a 5-choice Likert-type metric, with 5 indicating a high level of apprehensiveness. As in Study 1, the items asked in reverse format were recoded for alignment with the other items.

### ***Confirmatory factor analysis***

We applied ordinary least squares, multiple groups factor analysis to the data (Hamilton and Hunter 1988), with the goal of identifying a priori specified scale items that are appropriately related to their prespecified constructs (Hunter and Gerbing 1982). Using Hamilton and Hunter's (1988) confirmatory factor analysis software, the scales were examined based on the criteria that a robust construct meet the requirements of internal consistency and parallelism such that (1) each retained scale item demonstrate its highest factor loading on its specified principal factor and (2) each scale produce a nonsignificant chi-square for the sum of squared errors (SSE) (Hunter and Gerbing 1982). Individual scale items not meeting the criteria were not included in subsequent analyses.

### ***Predictive validity***

To assess the measures' predictive validity, two "yes" or "no" questions—"Would you use the Internet to gather travel-related information?" (general in nature) and "Would you use the Internet to 'book' a vacation?" (transactional in nature)—were presented as dependent variables, with GIA and TIA treated as independent variables. The "gather information" item was presented to assess the relationship between GIA and the consumers' propensity to use the Internet for information seeking, and the "book a vacation" item was presented to assess the relationship between TIA and the consumers' propensity to make online purchases.

To assess the predictive validity of GIA and TIA measures as presented in Research Question 2, two logistic regression equations were tested: GIA and TIA were regressed together on "gather information" and "book a vacation" to examine the measures' relationship to perceptions of outcome-driven behavior. If GIA and TIA are construct valid as proposed, the regression coefficients should be notably higher on "gather information" and "book a vacation,"



respectively (convergent validity), and notably lower on the alternative dimension (discriminant validity). Likewise, both GIA and TIA should be negatively related to the “gather information” and “book a vacation” variables. Last, GIA and TIA should be moderately and positively correlated with each other. These relationships were assessed for fit and effect size based on an examination of the model’s  $-2 \log$  likelihood, the Wald statistic, and the Nagelkerke “psuedo”  $R^2$ .

### **Study 2: Results**

The confirmatory factor analyses indicated that several items from the measurement model were not consistent with the data. The analyses suggested that GIA be reduced to a 4-item scale from the 9 items retained in Study 1. Four of the inconsistent items were removed due to violations of internal consistency (GIA items 6, 7, 9, and 10), and 1 item (GIA item 5) was removed due to problems of parallelism. Ultimately, the 4-item GIA measure yielded a nonsignificant chi-square statistic at the  $p = .05$  level,  $\chi^2(6) = 6.46$ ,  $SSE = .03$ , and an acceptable reliability coefficient ( $\alpha = .75$ ). The TIA scale reduced to a 9-item scale ( $\alpha = .89$ ) from the 11 items used. The tests of internal consistency applied to the TIA scale demonstrated nonsignificant SSE at the  $p = .05$  level,  $\chi^2(36) = 24.18$ ,  $SSE = .10$ . The 2 items that did not pass the retention criteria violated the parallelism requirement. Combined, the SSE for tests of parallelism of the GIA and TIA scales were nonsignificant at the  $p = .05$  level,  $\chi^2(36) = 46.51$ ,  $SSE = .19$ , indicating the two constructs were externally consistent. Building on the results of Study 1, the confirmatory factor analyses led to minor revisions of the GIA and TIA scales and produced two scales that met the requirements of both internal consistency and parallelism. The final factor loadings from the confirmatory factor analyses are reported in the third and fourth

numeric columns in Table 1, and the descriptive statistics and correlations for final aggregated scales are reported in Table 2.

### **Logistic regression analyses**

#### ***Gather information***

The model fit the data quite well with an overall prediction rate of 93%. The model log likelihood times  $-2$  was 107.43, which represented a decrease of 35.53 from the null model, suggesting that the model represents the data well based on two degrees of freedom,  $\chi^2(2) = 35.53$ ,  $p < .001$ , and demonstrated a respectable effect size (Nagelkerke  $R^2 = .31$ ). Based on the Wald statistic, using one degree of freedom, GIA was a significant influence in the model (Wald = 24.41,  $p < .001$ ), while TIA was not (Wald = .67,  $p < .41$ ). The analyses revealed that GIA had a negative relationship to a desire to gather information ( $B = -1.68$ ,  $\text{Exp}[B] = .19$ ), indicating that a one-unit increase in individuals' GIA will decrease the likelihood that the consumer will use the Internet for online information seeking by 81%. While not a significant influence in the model along with GIA, TIA also showed a negative relationship with a desire to gather information online ( $B = -.28$ ,  $\text{Exp}[B] = .76$ ), suggesting that a one-unit increase in individuals' TIA will decrease the likelihood that the consumer will use the Internet for online information seeking by 24%.

#### ***Book a vacation***

The model fit the data quite well with an overall prediction rate of 72%. The model log likelihood times  $-2$  was 262.99, which represented a decrease of 71.69 from the null model, suggesting that the model represents the data well with two degrees of freedom,  $\chi^2(2) = 71.69$ ,  $p < .001$ , and explained approximately 34% of the variance in the model (Nagelkerke  $R^2 = .34$ ). Based on the Wald statistic with one degree of freedom, both TIA and GIA were significant

influences in the model (Wald = 43.88,  $p < .001$ , and Wald = 4.04,  $p < .04$ , for TIA and GIA, respectively), with TIA showing a notably stronger influence, as projected. TIA demonstrated a negative relationship with a desire to book a vacation online ( $B = -1.44$ ,  $\text{Exp}[B] = .24$ ), indicating that a one-unit increase in individuals' TIA will decrease the likelihood that the consumer will use the Internet to book a vacation by 76%. To a lesser extent, GIA showed a negative relationship to a desire to book a vacation online ( $B = -.45$ ,  $\text{Exp}[B] = .64$ ), suggesting that a one-unit increase in individuals' GIA will decrease the likelihood that the consumer will use the Internet to book an online vacation by 36%.

### **Study 2: Discussion**

Although the measurement model of the GIA and TIA constructs required some modifications, a sufficient representation of both GIA and TIA was confirmed using our second sample. In particular, the two GIA items addressing online chat and discussions (items 5 and 6) did not align with the other GIA items, suggesting that the participants did not view online discussions in precisely the same manner as other Internet-related activities, such as information seeking. Second, items 7 and 9 were nearly duplicates of items 2 and 8, respectively, yet did not prompt the same reaction from the respondents. While GIA item 10 addressed fear of using the Internet, it may be that the term fear is not an appropriate descriptor for Internet apprehensiveness, despite its widely accepted role in the measurement of communication apprehension (McCroskey 1970, 1977). These differences speak to the importance of closely matching contextual applications of constructs and their measurement. The three TIA items that were excluded through the confirmatory factor analyses specifically addressed concerns about making online payments, willingness to make small online purchases, and preferences for information-seeking versus purchasing activities online. These items were all internally

consistent but did not pass the tests of parallelism. Last, TIA item 22 was a compound question and may have elicited a different pattern of response for that reason.

We proposed that GIA and TIA were moderately correlated and negatively related to specific features of Internet use. The correlational and logistic regression analyses confirmed these assertions. Specifically, our analyses revealed that GIA and TIA are distinct constructs and are negatively related to individuals' intentions to engage in online information-seeking and purchasing behaviors, respectively.

### **Study 3: Behavioral Correlates of Internet Apprehensiveness**

#### **Method**

##### *Participants*

Three hundred undergraduate business students enrolled in courses in labor relations and organizational behavior and 38 MBA and executive MBA students were sampled from a large southeastern university, yielding a combined sample of 338. The participants were 55% male and 45% female, between the ages of 19 and 64 ( $M = 24.59$ ,  $SD = 7.10$ , median = 22).

##### *Measurement*

The participants completed a questionnaire assessing their perceptions and attitudes toward Internet use and were asked to report the dollar amount they spent over the Internet for intangibles, such as airfare, travel packages, hotels, rental cars, and restaurant services. The participants' reported online spending during 1998 ranged from \$0 to \$10,000 ( $M = \$294.84$ ,  $SD = \$869.23$ , median = \$00.00), with 68% of the respondents ( $n = 230$ ) indicating that they spent zero dollars online for intangible products or services. Based on the final measurement model recovered across Study 1 and Study 2, GIA was assessed with four items and TIA was assessed with nine items.

## Analyses

### *Confirmatory factor analysis*

The GIA and TIA were reassessed using confirmatory factor analysis following the same retention criteria applied in Study 2.

### *Regression analyses*

To reassess the convergent and discriminant validity of the GIA and TIA measures, several regression equations were tested with the scales. With these tests, GIA and TIA were regressed together on the respondent's reported dollar amount spent for online purchases to examine the influence of GIA and TIA on a more "objective" outcome-driven behavior. This represents a slightly different application from the analyses conducted in Study 2, because in Study 2, the respondents did not report what they spent over the Internet, only their usage intentions.

## Study 3: Results

The factor analyses confirmed the four-item GIA measure as presented with a nonsignificant chi-square at the  $p = .05$  level,  $\chi^2(6) = 1.78$ ,  $SSE = .005$ , and an acceptable reliability coefficient ( $\alpha = .72$ ). The TIA scale was also fully recovered as a nine-item scale ( $\alpha = .93$ ), with nonsignificant SSE at the  $p = .05$  level,  $\chi^2(36) = 27.62$ ,  $SSE = .08$ . The SSE for the tests of parallelism for the GIA and TIA scales were also nonsignificant at the  $p = .05$  level,  $\chi^2(36) = 25.91$ ,  $SSE = .08$ , indicating the two dimensions were externally consistent among this sample of respondents. These results confirm the proposed measurement model across a third sample of respondents. The final factor loadings are reported in the fifth and sixth columns in Table 1, with the final retained items across the three studies presented in italics.

## Regression analyses

### *Dollars spent online*

The regression analyses indicated that TIA was the primary predictor of reported online spending for intangibles ( $R = .37$ ,  $R^2 = .14$ ),  $F(2, 326) = 26.33$ ,  $p < .001$ . The standardized regression coefficient for TIA was negative and significant ( $\beta = -.33$ ),  $t(1) = -6.18$ ,  $p < .001$ , and the coefficient for GIA was also negative and significant ( $\beta = -.13$ ),  $t(1) = -2.46$ ,  $p = .02$ . The stepwise entry of GIA and TIA on reported online spending for intangibles indicated that TIA accounted for the majority of the explained variance in the equation as anticipated ( $R^2 = .10$ , and  $R^2 = .04$ , for TIA and GIA, respectively). The Durbin-Watson statistic revealed that the error terms among the variables were not significantly correlated ( $d = 1.94$  and  $d = 2.01$ , based on  $d_{u,.05} = 1.72$  for  $k - 1 = 2$ ), indicating the variables are linearly independent. The variables' descriptive statistics and correlations are reported in Table 3.

### Study 3: Discussion

Using a third sample of consumers, this investigation further confirmed the results of the first two studies. These findings suggest that, as presented, GIA and TIA are adequate indicators of both Internet usage intentions and behavior. When specifically asked about online spending during the previous year, this respondent group reported a wide range of online spending, ranging from \$0 to \$10,000. While only one respondent reported \$10,000 in online spending at the time of this investigation, current patterns of Internet usage suggest that this amount is no longer an outlier (Canedy 1999; Pastore 2000).

Through the regression analyses, we further demonstrated that both GIA and TIA are negatively related to reported online spending, with TIA clearly demonstrating a stronger

relationship to reported online spending. In Study 3, we assessed specific spending patterns relating to travel-related products and services, rather than usage intentions alone.

### **Limitations and Directions for Future Research**

Several limitations of this study should be addressed. First, due to the exploratory nature of this investigation, a cross-sectional design was implemented with the primary goal of developing and validating measures of Internet apprehensiveness. The GIA and TIA measures were adapted from previously validated communication apprehension items, which are strictly perceptual in nature, requiring self-report measurement. To mitigate concerns over common method variance, we collected more objective behaviorally based data in Study 3, assessing the respondents reported online spending during the previous year. These additional data allowed us to assess the GIA and TIA scales' relationship to more objectively measured characteristics, rather than only perceptions and attitudes toward Internet use. In addition, to avoid potential limitations of self-report measurement among a single sample, three independent samples were used to complete this investigation, with each sample yielding similar responses. It is possible to gather specific usage data from respondents without using a self-report collection; however, respondents must first give consent to have their online behavior tracked and that, in and of itself, would limit the possible range of the responses when considering both users and nonusers.

Last, we surveyed two samples of travelers in Florida and one sample of undergraduate and graduate business students in the southeast. While the results were generally consistent across the three samples, it should be noted that these groups of respondents are not as broad based as necessary to generalize these findings into other contexts. In fact, the sample of college students reported lower levels of GIA compared to the two samples of travelers and tourists, while the travelers and tourists reported a lower level of TIA when compared to the college

students. Both sets of respondents (i.e., travelers/tourists and students) are legitimate Internet consumers, making their reactions and responses important to marketers interested in online marketing processes, particularly regarding travel-related information and services. The differences between the student samples' responses to GIA, when compared with the nonstudent sample, highlight the importance of targeting markets based on sociodemographic characteristics and speak to the qualitative differences between the samples.

### **Summary and Managerial Implications**

The Internet continues to grow and change each year along with its perceived utility as a communication and business transaction channel. This research has advanced our understanding of how to better use the Internet for marketing travel-related products and services in several ways.

First, we applied a theoretical framework from the fields of communication and marketing to Internet research, allowing us to address two fundamental issues of Internet use: (1) online information seeking and (2) online commercial transactions. As with any communication interchange, individuals must first be comfortable and secure with the process before it can be used easily and effectively. Designing a way to measure Internet apprehensiveness examining both general and transactional-related online activity is an important first step in identifying target consumer groups that are most likely to use the Internet for information seeking and/or purchasing products and services. Previous research on the Internet has provided preliminary classifications of Internet users and the implications of these classifications for use in marketing and marketing processes (cf. Alba et al. 1997; Bonn, Furr, and Susskind 1999; Hoffman and Novak 1996; Weber and Roehl 1999). This investigation builds on and extends those investigations by disaggregating these two drivers of Internet use and clearly identifying their



correlates. Being able to identify consumers with low levels of GIA and TIA should help managers better target their Internet marketing efforts.

Second, through the introduction of the GIA and TIA dimensions, we demonstrated that individuals view online information seeking and online transactions differently. One can be apprehensive concerning either dimension or both and engage in interaction in both the general and transactional domains. What is important here is the understanding of which domain one remains apprehensive about. Offering information and/or services over the Internet needs to be market specific to maximize returns on the Internet marketing dollar expended (Cartellieri et al. 1997). For example, if an individual indicates a high level of both GIA and TIA, it is very unlikely that he or she will use the Internet at all. However, if another individual demonstrates a low level of GIA and a high level of TIA, properly targeted advertisements or postings on the Internet that are salient to that consumer's particular needs are more likely to lead to an "in-store" or "more traditional" transaction, rather than an online purchase. Managers need to be able to identify which of these purposes their online effort aims to serve and plan their Internet strategy accordingly.

Finally, as anticipated, this investigation demonstrated that both GIA and TIA are negatively related to information-seeking behavior and online purchasing behavior. While TIA shows a weaker relationship to online information-seeking behavior and a stronger relationship to online purchasing intentions and behavior, GIA shows a strong relationship to online information-seeking behavior and a moderate relationship to online purchasing intentions and behavior. The "look versus book" framework that we present here is consistent with new Internet service offerings, where providers have set up travel-related search engines that allow consumers to deal directly with the sellers rather than acting as broker of information and a middleman (cf.

Hotelrooms.com 2001). Thus, the “look-book” gap is very real and can have negative effects on a firm’s ability to market itself over the Internet. Identifying and addressing consumers’ Internet apprehension can go a long way in boosting the informational and transactional potential of this medium. The findings we report here should be viewed as an added step toward creating a better understanding of the Internet user and the Internet’s potential use in marketing processes.

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**Table 1.** Final Factor Loadings from Study 1, Study 2, and Study 3 Factor Analyses.

Item	Factor Loadings					
	Study 1		Study 2		Study 3	
	1	2	1	2	1	2
General Internet apprehensiveness						
1. I dislike using the Internet to gather information about travel and tourism. <sup>a</sup>	—	—	—	—	—	—
2. <i>Generally, I am comfortable using the Internet to gather travel-related information.</i> <sup>b</sup>	.66	.30	.67	.08	.63	.13
3. I get impatient while using the Internet. <sup>c</sup>	—	—	—	—	—	—
4. <i>I like to use the Internet for a variety of reasons.</i> <sup>b</sup>	.88	.24	.75	.16	.64	.14
5. Engaging in online discussions (such as a chat room) makes me tense and nervous. <sup>d</sup>	.85	.18	—	—	—	—
6. I am calm and relaxed while participating in online discussions. <sup>b,e</sup>	.86	.19	—	—	—	—
7. Generally, I am not comfortable using the Internet to gather any information. <sup>a</sup>	.89	.27	—	—	—	—
8. <i>I am usually calm and relaxed while using the Internet.</i> <sup>b</sup>	.90	.21	.74	.22	.54	.16
9. I am very calm and relaxed when asked to use the Internet by others (such as vendors). <sup>b,e</sup>	.92	.24	—	—	—	—
10. I am afraid to use the Internet. <sup>a</sup>	.85	.15	—	—	—	—
11. <i>Communicating over the Internet usually makes me uncomfortable.</i>	.87	.27	.48	.07	.50	.12
17. While "surfing" a new Web site, I am very cautious and careful. <sup>f</sup>	—	—	—	—	—	—
Transactional Internet apprehensiveness						
12. <i>I am very relaxed when using the Internet to purchase products or services.</i> <sup>b</sup>	.50	.74	.11	.51	.31	.82
13. I am very relaxed while preparing to make a purchase over the Internet. <sup>b,c</sup>	—	—	—	—	—	—
14. <i>I have no fear of using the Internet to make online purchases.</i> <sup>b</sup>	.34	.79	.13	.78	.21	.86
15. Ordinarily, I am very tense and nervous about making payments online. <sup>d</sup>	.40	.82	—	—	—	—
16. <i>Ordinarily, I am very calm and relaxed when making online purchases.</i> <sup>b</sup>	.39	.82	.19	.83	.25	.82
18. <i>I'm afraid to make online purchases at times.</i>	.34	.84	.11	.60	.18	.81
19. <i>I have no fear of making online purchases.</i> <sup>b</sup>	.24	.84	.24	.81	.15	.87
20. <i>I feel perfectly comfortable using the Internet to make online purchases under \$1,000.</i> <sup>b</sup>	.34	.76	.21	.88	.23	.88
21. <i>I feel perfectly comfortable using the Internet to make online purchases over \$1,000.</i> <sup>b</sup>	.07	.74	.11	.58	.08	.60
22. I prefer to only gather information from the Internet and make purchases using more "traditional" methods (such as in-store purchases, phone-in, or mail order). <sup>d</sup>	-.21	.68	—	—	—	—
23. <i>The security of my credit card for use with online purchases concerns me.</i>	.10	.78	-.10	.50	.05	.60
24. I would use the Internet to purchase small items such as books or CDs. <sup>b,d</sup>	.45	.66	—	—	—	—
25. <i>I would use the Internet to purchase airline tickets, book hotel rooms, or other travel-related services.</i> <sup>b</sup>	.46	.68	.25	.64	.23	.69
Eigenvalue	20	5	2	5	2	6
Percentage of variance explained	38	36	18	37	15	45

Note: Items presented in italics were included in the final factor solution across all three studies; each factor's principal factor loadings are presented in italics; listwise deletion resulted in  $N = 518$  for Study 1,  $N = 243$  for Study 2, and  $N = 329$  for Study 3. For comparison purposes, the eigenvalues and the percentage variance explained reported for Study 2 and Study 3 were extracted through exploratory factor analysis performed on the final solution derived through the confirmatory analyses.

a. Item removed due to a factor loading below .40 in Study 1.

b. Item asked in reverse fashion, such that a high response indicates a low level of apprehensiveness and vice versa.

c. Item removed from the final factor solution in Study 1, as a result of loading as a single-item factor.

d. Item removed from the final factor solution in Study 2, as a result of violations of item heterogeneity.

e. Item removed from the final factor solution in Study 2, as a result of violations of item homogeneity.

f. Item removed from the final factor solution in Study 1, as a result of conceptual misspecification (i.e., loading on the wrong factor).

**Table 2.** Final Scale Descriptive Statistics and Correlations from Study 2.

Variable	<i>M</i>	<i>SD</i>	1	2	3	4
1. General Internet apprehensiveness	4.17	.74	[.75]			
2. Transactional Internet apprehensiveness	2.86	.87	.23**	[.89]		
3. "Gather"	—	—	-.41***	-.14*	[—]	
4. "Book"	—	—	-.22**	-.50***	.34**	[—]

Note: *N* = 243 using listwise deletion. Reliability coefficients appear in brackets along the diagonal, and the reliabilities, means, or standard deviations were not estimated for the dichotomous variables.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .



**Table 3.** Final Scale Descriptive Statistics and Correlations from Study 3.

Variable	<i>M</i>	<i>SD</i>	1	2	3
1. General Internet apprehensiveness	1.77	.61	[.72]		
2. Transactional Internet apprehensiveness	3.29	.90	.21***	[.93]	
3. Dollars spent online	294.84	869.23	-.20***	-.35***	[—]

Note: *N* = 329 using listwise deletion. Reliability coefficients appear in the diagonal, and the reliabilities were not estimated for dollars spent online.

\*\*\*  $p < .001$ .