A model of consumer web navigational behavior: conceptual development and application

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Abstract

Despite recent success by companies using the Internet to deal with their customers, one of the major remaining problems concerns understanding navigation on the Web and its relationship with Internet marketing. This study looks at the factors that can affect customers’ prepurchase intentions by surveying visitors to a real pharmaceutical web site, and it models the behavior of consumers when they are confronted with the navigational characteristics of an Internet site. The model of flow designed by Hoffman and Novak and previous findings and theories about several relevant behavioral variables are taken into account to propose and empirically test a model of consumers’ web navigational behavior. We use structural equations modeling to test 10 major hypotheses and more than two third of the 28 subhypotheses are supported. The findings contribute to theoretical and managerial understanding of the web navigation behavior of visitors.

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1. Introduction

As Internet usage increases worldwide, the focus is shifting from establishing a presence to strategic aspects. One important objective of firms on the web remains effective communications with consumers. The attention given to online retailing notwithstanding, most firms on the Internet use web sites as a communication tool, rather than for transactions. This emphasizes the importance of developing and testing systematic models of the web as a communication tool.

Most research on online communication is in the context of online retailing. This study seeks to expand the scope of models of consumer responses to web site and interface characteristics. Where previous models have primarily focused on developing theoretical frame-
works for web atmospherics in a retail setting, this study tests a more general model of consumer responses to web site characteristics based on the theory of flow (Hoffman and Novak, 1996; Csikszentmihalyi, 1990), which remains a cornerstone in our understanding of web site–human interactions. Several studies (Smith and Sivakumar, 2004; Novak et al., 2000) have applied this theory to develop models of consumer responses to site characteristics.

Our paper extends the literature in several ways: first, unlike most previous research, our model is in the general context of online communications, rather than online retailing. Second, in the spirit of Eroglu et al. (2001), we provide a broader, more comprehensive model integrating research on web site navigational characteristics, user characteristics, internal states, consumer responses, approach/avoidance behavior, and outcomes. Third, our empirical testing is performed in the context of a real-world pharmaceutical web site.

The next section reviews the literature and develops all the hypotheses. Our model draws from a broad range of
literature, to which it would be impossible to do justice. Therefore, it is necessarily a brief review highlighting the most relevant literature. The following section describes the empirical approach and the data used. We conclude with discussions of the findings and implications.

2. Conceptual background and model

The organization of the literature review and the proposed model (Fig. 1) can be divided into three main parts: personal factors, situational factors and outcomes, together with the theory of flow, which we cover first.

2.1. Theory of flow

Flow is a central construct for the study of the navigation of web sites (Hoffman and Novak, 1996) and it is a useful construct for describing human–computer interactions (Csikszentmihalyi, 1990; Ghani et al., 1991; Trevino and Webster, 1992; Webster et al., 1993). Novak et al. (2000) define flow as “the state occurring during network navigation which is: 1) characterized by a seamless sequence of responses facilitated by machine interactivity, 2) intrinsically enjoyable, 3) accompanied by a loss of self-consciousness, and 4) self-reinforcing” (Hoffman and Novak, 1996). Among inhibitors of flow, we can mention long downloading time, delays to download plug-ins, failure of navigation links, long registration forms, boring or not intuitive sites, slow responses, challenge greater than skills, phone line, internet at work, and usage costs. To improve the likelihood of flow, firms should try to maximize the interactivity and the user control of web sites. The literature suggests three variables essential to the creation of the flow experience among users: challenge, skills, and interactivity.

2.1.1. Challenge

Ghani et al. (1991) showed that the level of perceived challenge in human–computer interactions is positively associated with the achievement of flow, which in turn predicts exploratory use (Ghani and Deshpande, 1994). Furthermore, Luna et al. (2002) show that a web site that offers optimal challenge results in a more positive attitude in the surfer. Finally, people who have the skills at using the web and who find it challenging are more likely to experience flow, search for and purchase online a wide range of products; hence, skills and challenge would predict the online consumers’ search and their purchase behavior (Novak and Hoffman, 1997; Novak et al., 2000). Therefore:

**H1.** When consumers surf the web, challenge is positively related to: (a) site interactivity, (b) exploratory behavior, (c) attitude toward the web site, (d) site involvement, and (e) prepurchase intentions.

2.1.2. Skills

Ghani and Deshpande (1994) reported a positive correlation between skills and flow, and hence, with

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**Fig. 1.** Conceptual model of web navigation behavior.
exploratory behavior and by extension to optimum stimulation level (OSL). Furthermore, Wu (2000) shows that consumers’ skills are positively linked to perceived interactivity, further support for which is found in Jee and Lee (2002); hence:

**H2.** When consumers surf the web, skills are positively related to: (a) exploratory behavior, (b) site interactivity, and (c) optimal stimulation level.

2.1.3. **Interactivity**

Interactivity is identified in the literature as one of the key advantages of the Internet (Rafaeli and Sudweeks, 1997; Morris and Ogan, 1996; Pavlik, 1996). The greater the interactions between surfers and the Web, the more they attend to a site that is important, relevant, and useful (site involvement). Furthermore, interactivity allows surfers to construct the information they would like to be exposed to (Luna et al., 2002). Therefore, it creates a perception that the site information is relevant (Ducoffe, 1996; Fortin and Dholakia, 2000), increasing the likelihood of positive attitude formation (MacInnis and Jaworski, 1989; Wu, 2000; Yoo and Stout, 2001).

**H3.** When consumers surf the web, site interactivity has a positive impact on (a) site involvement and (b) attitude toward the web site.

2.2. **Personal factors of web navigation**

2.2.1. **Reasons to visit a web site**

Customers who have reasons to surf a web site (information seeking, entertainment, or socialization) are more motivated to surf the web. In fact, they develop enduring involvement, and by extension site involvement, a motivational state influenced by their perception of the web based on their needs, values, and interests (Day et al., 1995), which predicts behaviors, such as information search (Higie and Feick, 1989). Therefore:

**H4.** When consumers surf the web, reasons to visit a web site are positively related to (a) site involvement and (b) prepurchase intentions.

2.2.2. **Need for cognition (NFC)**

Cacioppo and Petty (1982) point out the importance of NFC as a personality variable and evaluated it as a motivational factor. A large literature has emerged on individual differences in NFC in fields ranging from social, developmental, and cognitive psychology to behavioral medicine, education, journalism, marketing, and law (Cacioppo et al., 1996). In their literature review, these authors find relationships between NFC and other individual-difference variables. Individuals who differ in terms of NFC have been posited to differ in their tendency to actively acquire information about relevant stimuli or events and to engage in effortful cognitive activities when given a task or making sense of the world. The range of NFC extended into broader personality functions. High NFC surfers engage in more search activities that lead to a greater perceived interactivity. Consequently, Jee and Lee (2002) view high NFC as a significant predictor of perceived interactivity. High NFC people perceive that a site has a greater interactivity than low NFC people do (Jee and Lee, 2002). Mantel and Kardes (1999) conclude that high NFC people are more likely to be exposed to interactive functions provided by the site or use them compared to low NFC people, and they find that high NFC people are more likely to search a web site before making a purchase decision compared to low NFC people. Because exploratory behavior has curiosity-motivated search for product information and brand-switching dimensions, when people are motivated to process information on the web, they search for the most accurate information, browsing more to get it. The relationship with OSL has not been studied before, but we surmise that high NFC individuals would search deeply for more familiar stimuli. Thus:

**H5.** When consumers surf the web, NFC is related to (a) exploratory behavior, (b) attitudes of consumers toward the web site, (c) site interactivity, and (d) optimal stimulation level.

2.2.3. **Optimum stimulation level**

OSL refers to the amount of stimulation people prefer in life (McReynolds, 1971). High OSL people explore more new stimuli and situations because of a higher need for environmental stimulation, while low OSL people are more comfortable with familiar situations and stimuli and avoid new or unusual situations or stimuli (Raju, 1980; Steenkamp and Baumgartner, 1992; Mittelstaedt et al., 1976). OSL is also related to exploratory behavior (Baumgartner and Steenkamp, 1994, 1996). More precisely, OSL is an antecedent of exploratory purchasing tendencies (Baumgartner and Steenkamp, 1996). OSL is positively related to the tendency to buy new products and brands (Raju, 1980; Venkatraman and Price, 1990).

**H6.** When consumers surf the web, OSL is positively related to (a) exploratory behavior and (b) prepurchase intentions.

2.3. **Situational factors of web navigation**

2.3.1. **Site involvement**

Involvement is a very important variable in audience processing of both traditional advertising (Petty and Cacioppo, 1981, 1983, 1986) and web advertising (Raman and Leckenby, 1998; Cho, 1999). Day et al. (1995) refer to involvement as a “motivational state influenced by a person’s perception of the object’s relevance based on inherent needs, values, and interests. Its major antecedents are the character-
istics of the person, the stimulus/object, and the situation” (Bloch and Richins, 1983).

However, in the context of web site navigation, the more relevant variable is site involvement, which taps a behavioral response, not a personality dimension. We suggest that highly site-involved surfers are prone to search for more information in web sites, and in doing so, to explore more new stimuli and situations because of a higher need for environmental stimulation. Balabanis and Reynolds (2001) confirm the influence of live brand attitudes on the attitude formation of online shoppers. Harvin (2000) indicates that confirm the influence of live brand attitudes on the attitude environmental stimulation.Balabanis and Reynolds (2001)

H7. When consumers surf the web, site involvement is positively related to (a) attitude toward the site, (b) exploratory behavior, and (c) prepurchase intentions.

2.3.2. Exploratory behavior

Exploratory behavior is defined as “behavior with the sole function of changing the stimulus field” (Berlyne, 1963). Theory and empirical studies suggest that a two-factor conceptualization of exploratory behavior is most useful: exploratory acquisition of products and exploratory information seeking (Baumgartner and Steenkamp, 1996).

Browsing, which is one of the components of exploratory behavior on the Internet, is performed when the surfers do not have a precise knowledge of the available information and are not sure whether their requirements can be met or how they may be reached. Browsing can be either general or purposeful. “Purposive” browsing occurs when surfers have specific requirements, whereas general browsing may be used as an opportunity for surfers to fine-tune the perception of their requirements or to simply keep themselves up-to-date on the latest changes in a specific field or a product type (Rowley, 2000).

Shoppers’ exploratory behavior, characterized by information search or exploration through purchasing, positively influences their attitudes toward the web site. The more they tend to explore the various possibilities offered by the web, the more they will fine-tune their requirements and have a positive idea of the site they visit when surfing the web, triggering approach behavior toward the web site.

H8. When consumers surf the web, exploratory behavior is positively related to their attitude toward the site.

2.3.3. Attitude toward the web site

Stevenson et al. (2000) showed that attitude toward the site is a useful construct in understanding the impact of a web site. Luna et al. (2002) consider attitude toward the web site as an important determinant of flow, mediating the effect of the three components of flow for a specific site. Shimp (1981), Batra and Ray (1986), MacKenzie et al. (1986), and Brown and Stayman (1992) found that attitude toward the advertisement influences brand attitudes and purchase intentions. In the context of a web site, three content scales (entertainment, informativeness, and organization) account for attitude toward web sites (Chen and Wells, 1999; Chen et al., 2002). This attitude toward the site scale remains a reliable and unidimensional construct across different web sites, types of respondents, and data collection methods (Chen et al., 2002). Following Jee and Lee (2002), we assume that web sites look like and reflect the characteristics of traditional advertisements, and therefore, attitude toward the web site should lead to consequences identical to those found in attitude research (Lutz et al., 1983; MacKenzie et al., 1986; Mitchell and Olson, 1981; Shimp, 1981; Homer, 1990). Flow mediates the effect of attitude toward the site on consumers’ intentions to revisit the site and to purchase this product, but it is not needed to predict consumer intentions (Luna et al., 2002; Bruner and Kumar, 2000). Thus:

H9. When consumers surf the web, attitude toward the web site is positively related to their prepurchase intentions for the product.

2.4. Effectiveness of web navigation

Characteristics of products and web sites encountered early in online browsing can influence the level of arousal and pleasure that consumers experience, their OSL, and therefore influence their responses, including site involvement. Menon and Kahn (2002) show that if the starting experiences encountered by customers in a simulated Internet shopping trip are high in pleasure, there is a positive influence on approach behaviors (attitudes) and shoppers tend to engage in more arousing activities, such as more exploration, tendencies to examine new products and stores, and higher response to sales promotions. Furthermore, navigational cues are important in creating or not impeding the flow experienced by surfers (Hoffman and Novak, 1996; Novak et al., 2000), which in turn influences formation of a positive attitude (Baronas and Louis, 1988; Regan and Fazio, 1977; Eagly and Chaiken, 1993; Csikszentmihalyi, 1977). Finally, Lynch et al. (2001) show that site quality may influence surfers’ probability of buying during the visit and returning to visit the web site.

H10. When consumers surf the web, navigational characteristics of the web site are positively related to (a) exploratory behavior, (b) attitude toward the web site, (c) site involve-
ment, (d) optimal stimulation level, and (e) prepurchase intentions.

2.5. Outcomes

Our model is completed by prepurchase intentions. We use one variable for two reasons, one theoretical and the other empirical. As mentioned earlier, our model is more general than online retailing and immediate online buying is not the main consideration. Furthermore, given the empirical context in which we test our model, prepurchase intentions is a more relevant outcome.

3. Data and methodology

We test the proposed model in the context of a pharmaceutical web site. Health care is one sector of the economy where the Internet has become a valuable tool for communication. For wired consumers, healthcare ranks as the fourth most popular topic on the web (Bellman et al., 1999), and 80% of American Internet users search for health topics (Practice Management Consulting, 2003). The objectives of pharmaceutical companies are geared more towards influencing consumer attitudes rather than online purchasing. This empirical context is justified by our objective of developing a more general model of web navigation.

The data were collected online from the homepage of an OTC drug from one of the largest, well-known pharmaceutical companies in North America. (A recent study by Ipsos PharmTrends reported that this OTC drug was number 2 with a 23% U.S. market share, compared to the leader’s 32% share.)

The questionnaire was a structured, nondisguised instrument, which used closed-ended questions to indicate the respondents’ degree of agreement or disagreement on a five-point Likert scale, except for the construct of site involvement, which used a five-point semantic differential scale. The questionnaire contained items measuring antecedents of flow (interactivity, skills, and challenge), reasons to visit a web site, OSL, exploratory behavior, NFC, site involvement, attitudes toward the site, and prepurchase intentions for the OTC drug. Characteristics of the site were also included. Finally, some demographic variables were measured.

All these dimensions have been studied previously, providing a large pool of existing valid items to use. The most appropriate measures for each construct were selected from the literature and adapted to meet the needs of our study. The short need for cognition scale (18 items) by Cacioppo et al. (1984) was adapted to the web context. The reasons to visit a web site scale was adapted from Ducoffe (1996). The optimum stimulation level scale was adapted from Eighmey (1997). The interactivity scale by Novak and Hoffman (1997) was operationalized with four items. The skills and challenge scales by Novak et al. (2000) and Hoffman and Novak (1996), were operationalized with four and five items, respectively. The exploratory behavior scale by Novak and Hoffman (1997) was operationalized with eight items. The site involvement scale by Muehling et al. (1990) was operationalized with eight items. The navigational characteristics of the web site scale by Bell and Tang (1998) was operationalized with 11 items. The attitude toward the web site scale came from Chen and Wells (1999), which is considered as a measure of approach/avoidance behavior, and from Eighmey and McCord (1998). Finally, the scale by Gore et al. (1994) about involvement in purchase decisions for nonprescription drugs was conceptualized as prepurchase intentions and was operationalized with seven items.

4. Results

4.1. Exploratory factor analysis

An exploratory factor analysis (EFA) was run to determine how the observed variables were linked to their underlying factors. An analysis of the psychometric properties of the items composing the different scales resulted in deleting certain items presenting poor psychometric properties or changes in Cronbach’s $\alpha$ coefficients. After deleting these items, each construct proved to be unidimensional and factorially distinct, all items used to operationalize a specific construct loaded on a single factor. The EFA highlighted the existence of 11 factors with eigenvalues greater than 1.0. The criterion used to identify and interpret factors was that each item should have a factor loading greater than 0.4. According to Nunnally (1967), acceptable Cronbach’s $\alpha$ coefficients start at 0.60. In our study, all Cronbach’s coefficients except three were greater than 0.70, which indicates reasonably high reliability. The exceptions are NFC with $\alpha = 0.58$, OSL $\alpha = 0.62$, and INT $\alpha = 0.61$.

4.2. Confirmatory factor analysis

Following Byrne (1994), confirmatory factor analysis (CFA) was used to test the measurement model before conducting the test of the structural model. The Lagrange Multiplier Test identified a very small number of covariances, which were taken into account. The 11-factor structure obtained in the EFA was confirmed with a first-order CFA. Estimation of the CFA model generated a $\chi^2$, relative $\chi^2$, CFI, and standardized root mean square error of approximation (RMSEA) values of 542.5, $df=409$, $\chi^2/df=1.33$, 0.972, and 0.036, respectively. According to Hu and Bentler’s (1999) cutoff criteria, the model demonstrated a good fit, taking into account the very large number of items and factors analyzed (Baumgartner and Homburg, 1996). Table 1 lists the scale items for each factor, factor
loadings, Cronbach’s α, and percentage of variance for each factor.

4.3. Full structural model

Following Byrne (1994), we then tested the full structural model. Overall, the findings show strong support for the model fit with a χ², relative χ², CFI, and RMSEA values of 558.95, df=425, χ²/df=1.32, 0.972, and 0.035, respectively. As per Hu and Bentler’s cutoff criteria, the fit of this full model is judged acceptable. The results of the factor loadings and the test statistics indicate that all the factor loadings are significant. Finally, we analyzed the path coefficients representing the hypothesized relationships between the various constructs. Table 2 and Fig. 2 provide the coefficient estimates and their statistical significance. It also shows the standardized values of the coefficients and relates the paths to our original hypotheses. Only eight out of 28 subsections of hypotheses have nonsignificant paths and all the others are significant with t tests varying from 1.4 (one way) to 4.9.

5. Interpretation and discussion of the results

The results show that challenge strongly affects the surfers’ exploratory behavior, as well as interactivity, site involvement, and pre-purchase intentions. Skills have a direct link to both OSL and exploratory behavior. Both challenge and skills have an indirect link with attitudes towards the site through exploratory behavior. Thus, the
greater the skills, the higher the OSL, and the more likely the customer is to increase exploratory behavior, particularly information seeking, leading to more positive attitudes toward the site.

Interactivity has a weak but positive impact on attitudes toward the web site. This is consistent with previous research by Luna et al. (2002), who demonstrated that the effect of interactivity on the revisit intentions variable is only partially mediated by surfers’ attitude and navigation experience. We hypothesized that interactivity would increase site involvement, but this path was not significant. With a significant correlation between attitudes toward the site and site involvement (Ha and James, 1998), interactivity was expected to lead to approach behavior toward the site and site involvement (Ha and James, 1998), which was not borne out by our results. One possible explanation might be the high correlation between site involvement and attitudes toward the site. Another more likely explanation relates to the measure itself. Liu (2003) found that interactivity is composed of three dimensions: active control, synchronicity, and two-way communication. Our measure seems to tap only the first two dimensions and is only a measure of interactivity control/synchronicity, and the missing link may be related to the two-way communication dimension, which was not measured.

One interesting and useful finding relates to the support for the impact of navigational characteristics effectiveness. We find that navigational characteristics are positively related to surfers’ optimal stimulation level and to site involvement. We can infer that when navigational characteristics are positive, surfers develop some arousal early in their online browsing, which can positively affect their site involvement.

Another contribution is the incorporation in the model of the NFC construct. We find a positive relationship between NFC and interactivity and a negative one with OSL. People with high NFC are intrinsically motivated, tend to exhibit curiosity, intrinsically enjoy thinking and doing complex tasks, are less likely to decrease their efforts on cognitive tasks, and have a lower OSL (that is, they are more comfortable with familiar stimuli). Furthermore, high NFC induces increased interactivity as surfers can participate in changing the form and the content of a mediated environment in real time. The results also showed that NFC has a positive impact on exploratory behavior and a negative one on attitude toward the site. The exploratory behavior construct includes curiosity-motivated search for product information. Moreover, browsing increases when surfers do not have precise knowledge of the information available and are not sure if

<table>
<thead>
<tr>
<th>Paths</th>
<th>Hypotheses</th>
<th>Significance</th>
<th>Parameter estimate</th>
<th>Standard error</th>
<th>Test statistic</th>
<th>Standardized estimate</th>
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<td>H1a</td>
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<td>0.131</td>
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</table>

* See the meaning of abbreviations in Table 1.
** Significant at P<.10.
*** Significant at P<.05.
**** Significant at P<.01.
their requirements can be met or how they may be reached, and because of that, high NFC people have a lower attitude toward the site than low NFC people.

The results indicate that OSL has an indirect link with attitudes toward the web site, mediated by exploratory behavior. According to Raju (1980), OSL determines the degree of exploratory behavior of surfers, as they are going to be more inclined to browse.

As expected, reasons to visit the web site are positively related to site involvement and to prepurchase intentions.

One surprising result was the failure to support prior research linking attitudes toward the web site and prepurchase intentions. First, this might be due to high correlation between involvement and attitude. Second, these two constructs are not directly associated with the same object. Although prepurchase intentions are related to the web site, the items concern more specifically the drug (or brand of that company). From the point of view of online retailing, this result takes on added significance, as it appears to go against some previous findings. We propose that attitude toward the site is the main outcome for general browsers, while prepurchase intentions is the main outcome for purposive browsers or information seekers (i.e., influenced by site involvement and reasons to visit a web site, but not by site attitudes).

One of the strongest findings relates to the support for the impact of site involvement. We find that involvement has a positive impact on prepurchase intentions, and exploratory behavior, but of more interest is the finding that site involvement is positively related to attitude toward the site (directly and indirectly through exploratory behavior). Highly involved consumers are more attracted by web site aspects related to the product (information content), whereas low-involved ones focus more on the peripheral stimuli of the site (visuals, sounds, and frames) or the site’s design characteristics. Highly involved surfers develop positive attitudes toward the site, leading to behaviors, such as repeat visits to collect up-to-date information. Obviously, this finding carries significant theoretical and managerial implications.

6. Theoretical and managerial implications

The goal of this study was to propose and empirically test a model of consumers’ web navigational behavior. The model of flow designed by Hoffman and Novak and knowledge about several cognitive and conative aspects of consumer behavior were used to construct our model. Some of antecedents of flow, such as skills, challenge, and interactivity, define the ability to process information. Reasons to visit a web site, NFC, and OSL are related to individual factors of web navigation. Navigational characteristics of the web site conceptualize effectiveness of web navigation. Situational variables are attitudes toward the web site, exploratory behavior, and site involvement, and they in turn influence purchase intentions.
The theoretical implications of our research take several forms. First, it empirically confirmed several relationships discussed in the previous literature. For instance, following Novak and Hoffman (1997) and Novak et al. (2000), the positive path between OSL and exploratory behavior is validated. In addition, following Wu (2000) and Yoo and Stout (2001), interactivity induces the formation of positive attitudes, which is confirmed by our results. Je and Lee (2002) reported the same results concerning the link between NFC and interactivity. We found that efficient navigational characteristics can help raise consumer involvement in the site, and thereby positively affecting prepurchase intentions, which is consistent with Lynch et al. (2001).

More importantly, our model tested several other relationships that had not been studied previously in the literature. We highlight a few of these. The negative influence of a surfer’s NFC on his/her attitudes toward the web site and the negative influence of NFC on optimal stimulation level are interesting results both for marketing scholars and for social psychology researchers. We also uncovered a positive and significant link between NFC and exploratory behavior. Finally, surfers’ exploratory behavior impacts their attitudes toward the web site. Although some researchers, such as Raju (1980) and Baumgartner and Steenkamp (1996), have done studies on these variables, these relationships have never been examined in an Internet situation.

We also found evidence that challenge and skills (ability to process information) influence directly and positively surfers’ exploratory behavior when they have a specific activity (information seeking), while Ghani and Deshpande (1994) observed that skills and challenge had a positive and indirect impact on exploratory behavior, mediated by the achievement of flow.

One area which deserves considerable attention is the relationship between attitude and prepurchase intentions. Bruner and Kumar (2000) found that attitudes toward the web site impact purchase intentions, while Kwak et al. (2002) found that attitudes toward online advertisements generally did not impact the overall Internet purchase process. We found the same results as Kwak et al. (2002), but related to the effect of site attitudes on prepurchase intentions, which may be related to the two types of surfers as mentioned previously.

This study provides practitioners with insights into individual and behavioral variables that influence consumers’ prepurchase intentions for an OTC drug when they use the Internet channel to seek and collect information about it. The findings generally indicate what type of consumers (according to their skills, challenge, NFC, OSL, etc.) are more likely to seek product-related information from the Internet, what is the influence of navigational characteristics, and under what circumstances they engage in this activity (reasons to visit a web site). In addition, given the early positioning of information search in the buying decision process, if marketers can identify which consumer segments in their market niche rely more heavily on navigational characteristics, and how to decrease the difficulty of navigating on their site for novice surfers (skills and challenge), they can tailor their communication strategies to better suit these segments.

The study is not without limitations. Empirical surveys gathered on the Internet may have questions about external validity, more so because our sample of respondents was gathered from one single web site. Furthermore, we have consciously chosen not to incorporate click stream analysis into our empirical work, which might have provided further validity to our results, but at the cost of significantly higher complexity. We also did not explicitly measure and test the presence of flow in our respondents. Finally, some variables, such as interactivity, OSL, and NFC, need better measures.

Some areas for future research can be suggested here. Researchers might consider interactivity as a multidimensional construct (Liu, 2003) and incorporate its relevant dimensions in the model. The model itself can be tested with another site, a different type of site (e.g., entertaining), and expanded to include other variables, such as pleasure and arousal, brand attitudes, and purchase intentions. Quantitative studies could be conducted using click stream analysis. Longitudinal studies could be done to trace the evolution and adaptation of consumer behavior when technological developments and improvements are brought into navigational characteristics related to visual and audio capabilities and to the quality of the information found on the Web.

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References


