FACTORS INFLUENCING CONSUMER CHOICE OF A "RATING WEB SITE": AN EXPERIMENTAL INVESTIGATION OF AN ONLINE INTERACTIVE DECISION AID

Pratibha A. Dabholkar

This study examines consumer choice of Rating Web Sites as online, interactive, decision aids. A series of studies, including qualitative research and a laboratory experiment, investigate factors that influence consumer choice of Rating Web Sites. The context for the quantitative research is information search on laptop computers. Based on in-depth interviews, importance ratings, and binomial logistic regression analysis, the final results show that credibility of the Rating Web Site is the most important attribute, followed by the opportunity for customization of information. In contrast, having information on many alternatives is not as important; instead, reducing risk and saving search effort appear to be the ultimate underlying motives for using Rating Web Sites.

Consumers are increasingly turning to Internet-based searches for information on a variety of subjects, including product information (Ratchford, Lee, and Talukdar 2003), and in many cases online searches are replacing the more traditional offline searches for information (Klein and Ford 2003). In 2004, 70 percent of U.S. adults used the Internet as an information source (Kelsey Group; shop.org 2005), and 32 percent said that the Internet was their primary information source (Package Facts; shop.org 2005); further, 41 percent of international online consumers said they went online often or very often to search for information on products and services (Harris Interactive; shop.org 2005). Searching for information online is greatly aided by online decision aids that help consumers compare different products across the same dimensions (Reibstein 2002; West et al. 1999). In fact, 28 percent of online consumers said they shop online for the ease of comparing products (Nielsen/Net Ratings; shop.org 2005), and 59 percent said they start at aggregator sites rather than going directly to merchant sites (BizRate/Shopzilla; shop.org 2005).

Researchers agree that online sources provide consumers with far more information than before for making decisions, and yet cognitive effort is shifting from consumers to interactive decision aids (Bechwati and Xia 2003). As a result, "[online] interactive decision aids have the potential to drastically transform the way in which consumers search for product information and make purchase decisions" (Häubl and Trifts 2000, p. 4). Moreover, despite the striking trends in online information search, no scholarly (or even trade) research has been conducted on a new, rapidly growing online, interactive, decision aid, hereinafter called a *Rating Web Site.*

The Internet today provides consumers with a host of Rating Web Sites that critique or rate different available options in everything from consumer products and financial services to entertainment and charities. Such Web sites (e.g., www.productopia.com, www.bankrate.com, www.tvtome.com, www.charitynavigator.org), created primarily to review or rank offerings in a given industry, are similar to *Consumer Reports* in that they summarize available options and facilitate consumer decision making and choice. Rating Web Sites are typically third-party Web sites that rate different available alternatives on a number of criteria (e.g., price, quality, specific features) and provide online consumers with a huge information base consisting of professional critiques as well as ratings/reviews by customers or users. Although they provide abundant information on one Web site, Rating Web Sites are not as broadly defined as the information Web sites described by Mittal and Sawhney (2001), which include retailer Web sites (e.g., www.amazon.com) and third-party Web sites that simply provide information not necessarily tied to helping consumers make decisions (e.g., www.cnn.com).

Furthermore, although a Rating Web Site may use recommendation agents and shopping robots ("shopbots"), it goes beyond these intelligent software agents that search the Internet. Recommendation agents look for a match to

Pratibha A. Dabholkar (Ph.D., Georgia State University), Associate Professor of Marketing, University of Tennessee, Knoxville, TN, pratibha@utk.edu.

Journal of Marketing Theory and Practice, vol. 14, no. 4 (fall 2006), pp. 259–273.

ISSN 1069-6679 / 2006 $9.50 + 0.00.
DOI 10.2753/MTP1069-6679140401

fit user profiles (Iacobucci, Arabie, and Bodapati 2000) and shopbots look for the lowest price for a particular product (Betts 2001; Smith 2002). Rating Web Sites may do both, but their main objective is to provide critiques or ratings for offerings in a given industry. Further, as recommendation agents typically are provided by online retailers (e.g., www.amazon.com), some consumers may suspect them of bias. Shopbots typically focus on price (e.g., www.mysimon.com, www.bargain.com), and even product- or merchant-based shopbots (e.g., www.bizrate.com) include price as a critical criterion (Edwards 2000; Smith 2002). The research issues addressed by this study apply to third-party recommendation agents and to shopbots, as their function is similar to that of Rating Web Sites. However, the issues in this study go beyond these applications to include *all* kinds of Rating Web Sites, even those where price may not be a concern; for example, Web sites that provide movie reviews, critiques of charitable organizations, ratings for hospitals, and rankings for cities (e.g., www.imdb.com, www.charitywatch.org, www.healthgrades.com, www.bestplaces.net).

The growing phenomenon of Rating Web Sites that critique available alternatives is going a long way toward helping consumers in their search and decision process for a variety of contexts. However, given that there are so many Rating Web Sites to choose from and because they might offer contradictory advice, as do some online agents (Gershoff, Mukherjee, and Mukhopadhyay 2003), consumers are now faced, somewhat ironically, with choosing among these Rating Web Sites. Also, just as consumers are beginning to show indications of loyalty to certain shopbots (Johnson et al. 2004), if consumers find a Rating Web Site they like, they might stick with it for future decisions. Thus, the issue of what motivates consumer preference for a Rating Web Site becomes even more salient. In addition, some Rating Web Sites operate on fees paid (or promotional spending) by the companies they evaluate and may base their rankings on these revenues, as do some shopbots (Betts 2001; Smith 2002), whereas other Rating Web Sites might even be "fronts" for specific companies, thus creating serious issues of trust. To date, no study has addressed any of these issues for Rating Web Sites.

This study addresses several research questions related to consumer choice of Rating Web Sites. The main research question is to determine the specific site attributes that draw consumers to consult a particular Rating Web Site. A related issue is whether consumer decision making is simplified through Rating Web Sites, or if it becomes more complex—as more information may be available than the consumer wants. A third research issue is that of credibility—are consumers concerned about credibility, perhaps because Rating Web Sites might be sponsored by one of the rated companies or organizations? This paper focuses on the main research question, namely, to investigate factors relevant to consumers in selecting one or more Rating Web Sites to search for information leading to a purchase or spending decision, or simply to an evaluation. However, in determining these relevant factors, the paper also examines whether credibility and too much information are issues for consumers in using a Rating Web Site.

Literature on online information search and Web sites in general offers a good start for considering possible factors that influence choice of a Rating Web Site. There are basic similarities between Rating Web Sites and other Web sites that arise from considerations related to online experiences. Therefore, factors that are relevant for Web sites in general are likely to apply to Rating Web Sites as well. Recent research on interactive decision aids (e.g., recommendation agents, shopbots) is even more directly relevant. After all, a Rating Web Site can certainly be viewed as an interactive decision aid for consumers and may in fact offer several types of decision aids (e.g., comparison matrices, search engines) within its framework.

In addition to these similarities, there are fundamental differences between Rating Web Sites and other Web sites as discussed, so some factors may be different for the two types of Web sites. In contrast to company-sponsored Web sites, Rating Web Sites are (1) third-party sponsored and (2) serve as decision aids that allow online consumers to choose between a number of available alternatives. To discover factors based on these differences, qualitative research is conducted to provide a rich and experiential source for revealing attributes that consumers believe are important for choosing a Rating Web Site. In addition, a study to measure importance ratings and a laboratory experiment on trade-offs among attributes offer insights into the relative importance of these factors. The paper discusses the implications of all the findings for researchers as well as for developers of Rating Web Sites.

LITERATURE REVIEW

As mentioned in the previous section, the literature search for relevant factors is driven by the similarities between Rating Web Sites and Web sites in general as well as other online, interactive, decision aids. With reference to consumer information search and interactive home shopping, Alba et al. (1997) suggest that consumers prefer those retail formats (catalog or online) that provide (1) vast selection, or many alternatives for consideration; (2) information for screening; (3) information for evaluating alternatives

(product comparisons); and (4) reliability. Are these same attributes relevant to consumers in deciding which Rating Web Site(s) to consult?

By its very definition, a Rating Web Site provides online consumers with information for screening and for evaluating/comparing alternatives; therefore, the two corresponding factors—items 2 and 3 above—are intrinsic to this particular format *and not criteria for differentiation.* As Vijayasarathy and Jones (2003) explain, the role of an online shopping aid is to provide comparison information and decision guides to help consumers make better decisions.

However, having a vast selection for consideration (see factor 1 above) or "information on many alternatives" is relevant for choosing among Rating Web Sites. In recent surveys, 26 percent of online consumers mentioned that getting information on a wider variety of products was an important reason for them to shop online (Nielsen/Net Ratings; shop.org 2005). Biswas (2004) explains that the very characteristics of the Web make it possible to provide a lot of information easily, and consumers have come to expect this. As a result, consumers would naturally expect to find information on a large number of alternatives on a Rating Web Site.

The fourth factor suggested by Alba et al. (1997)—namely, reliability—can be viewed as an issue of credibility. Consumers want to know if information providers are reliable and dependable—that is, whether they can be trusted. Research on online consumers refers to this construct alternately as credibility or reliability, but the discussions suggest it is the same construct. West et al. (1999) propose credibility as a critical issue in the use of electronic agents. Klein and Ford (2003) suggest that online consumers differentiate between independent and seller-dominated sources, and the extent to which online sources are used for information search depends on the credibility of these sources. There is some empirical support as well, both direct and indirect. Smith and Brynjolfsson (2001) found that reliability was an important factor to consumers who use shopbots. Vijayasarathy and Jones (2003) found that shopping with an online aid led to lower confidence in the selection, and concluded that this was due to a lack of trust in the mySimon shopping aid they used in the study. Thus, research suggests that credibility is important for Web sites in general as well as for online, interactive, decision aids. Therefore, credibility can be viewed as a second relevant factor for choosing a Rating Web Site.

On further examination of factors relevant for online search, it is found that although no empirical research has been done on online customization, there are several conceptual discussions of this aspect. Compared to offline sources, the Internet has a natural "advantage of being able to provide customized information in real time" (Ratchford, Talukdar, and Lee 2001, p. 11). Researchers (Grenci and Todd 2002; Smith 2002) suggest that by being able to customize information for themselves, online shoppers are likely to feel more in control of their information search and decision process. In discussing interactive decision aids in particular, researchers (Aggarwal and Vaidyanathan 2003; Bechwati and Xia 2003) mention that online shopping agents provide either standard or customized information to online users in an attempt to differentiate themselves. Thus, customization of online information appears to be a desired attribute for Web sites in general as well as for online, interactive, decision aids. Therefore, opportunities for customization (or control) of information can be considered a third relevant factor for choosing a Rating Web Site.

Another relevant factor for online search is the reduction of search costs, or saving effort and time (Bakos 1997). A study of browsing patterns showed that online consumers consistently use time-saving strategies (Bucklin and Sismeiro 2003) and return to Web sites they are experienced with instead of expending effort in shopping around (Murray and Häubl 2002). Lederer et al. (2000) adapted the technology acceptance model (Davis, Bagozzi, and Warshaw 1989) to the Web and found that consumers are more likely to use a Web site if it is easy to use (i.e., saves effort and time) and useful. The factor "usefulness" captured two dimensions in Lederer et al.'s study—namely, "sufficient information" and "relevant information." "Sufficient information" is already included as a possible antecedent for evaluating Rating Web Sites through "information on many alternatives." Similarly, "relevant information" is captured through "customization of information." Thus, the only new consideration is that of saving effort.

Saving search effort is highly relevant for interactive decision aids as well. In an experiment using a simulated online store, two interactive decision aids (a recommendation agent and a comparison matrix) were found to help students make better buying decisions with less effort (Häubl and Trifts 2000). In another experiment using a simulated online job search, students' satisfaction with the online search process was found to be positively related to the effort saved by an online search engine, another type of interactive decision aid (Bechwati and Xia 2003). Smith and Brynjolfsson (2001) write that by collecting and presenting information to help consumers make decisions, shopbots considerably reduce consumer search costs in terms of effort. Thus, various online interactive decision aids appear to reduce consumer effort in decision making. Given that a Rating Web Site is an online decision aid for consumers

and as it often incorporates several types of interactive decision aids within its format, reducing consumer effort is expected to be *an intrinsic aspect of a Rating Web Site.* But the manner in which online search effort is reduced can certainly differentiate between Rating Web Sites.

Online retailers who do not meet basic consumer criteria for search and evaluation (i.e., reducing risk, saving time and effort) are ignored by online consumers (Kolesar and Galbraith 2000). Similarly, Rating Web Sites that do not meet these basic search and evaluation criteria are likely to be avoided. Risk can be reduced by being a credible source of information, thus reinforcing "credibility" as a relevant factor for choosing a Rating Web Site. Time and effort in online search can be saved by providing a lot of information at once and by allowing customers to customize (or control) the information (Grenci and Todd 2002; Smith 2002). Thus, time and effort saving might already be encompassed through the dual provision of "information on many alternatives (in one place)" and "customization (or control) of information," the other two relevant factors for choosing a particular Rating Web Site.

Therefore, based on the literature, three factors seem to be directly relevant for online consumers in choosing among Rating Web Sites: the credibility of the Rating Web Site, information on many alternatives, and the ability to customize information for oneself. Risk reduction and saving effort are also basic considerations, but these appear to represent the intrinsic motivation in using a Rating Web Site (as discussed above). Further, saving effort may be a second-order factor (as explained above). Qualitative research was undertaken next to determine if these same factors were relevant for the context of Rating Web Sites and also to uncover other possible factors.

QUALITATIVE STUDY

As there is no extant research specifically on Rating Web Sites, a qualitative study was conducted to determine attributes that would be important for this context from a consumer perspective. Twenty-one undergraduate business students from a large southeastern U.S. university were recruited based on their Internet usage and exposure to Rating Web Sites. All respondents reported using the Internet extensively (i.e., several times a week for the past six or more years). Fifteen had used Rating Web Sites several times to make specific shopping decisions, whereas the other six had not yet made shopping decisions based on Rating Web Sites but were highly familiar with such Web sites and had experimented with them. In terms of demographics, the respondents were fairly evenly divided by gender (males 9, females 12), had a mean age of 22.1, and were mostly Caucasian (90.5 percent).

Given their high familiarity with Rating Web Sites, all 21 respondents were taken through structured, depth interviews. Participants were asked if they typically looked at (or would look at) more than one Rating Web Site for a specific shopping decision. On average, interviewees said they would look at 2.3 Rating Web Sites (ranging from 1 to 5) for a particular information search. Three respondents mentioned (unaided) that if they found a Rating Web Site they liked, they would stick with it. Interviewees were also asked about the types of products they would search for on a Rating Web Site. The most frequently mentioned products were cars (71 percent), computers (62 percent), electronics (52 percent), digital cameras (48 percent), and travel (38 percent).

Next, the respondents were asked a series of open-ended questions to gauge factors important to them in using Rating Web Sites (including future use). The first question asked, "Why do you (or would you) use a Rating Web Site?" and encouraged respondents to provide more than one answer. The most frequent answers were "to make better decisions" and "to make easier decisions." Other answers reinforced these and included "to learn from other customers," "to compare alternatives easily," and "for quick evaluation." Thus, there was strong support for the underlying assumption of the study that Rating Web Sites are used by consumers as decision aids—that is, to make better, easier decisions, which encompasses the saving effort motive. Other frequent answers, "to avoid wrong decisions" and "to avoid bias," suggest the risk reduction motive.

The second question asked, "When would one Rating Web Site be enough?" A sizable majority (17 out of 21) said one Web site would be enough if it was credible and provided information on a large number of alternatives, thus providing strong support for two of the factors determined to be relevant from the literature review. Further, the importance of credibility supported the underlying risk reduction motive, and the importance of having information on many alternatives (in one place) supported the underlying motive of saving effort.

The third question (building on the second one) asked, "Why would you use more than one Rating Web Site?" The most frequent answers were, "to avoid bias," "to compare ratings to see if they match," "to include all possible alternatives," "to include alternatives I want," and "to include features I want." The first three answers once again supported the importance of *credibility of the Rating Web Site* and *information on many alternatives* as relevant factors. But the last two answers revealed a third factor, namely, the op-

Table 1
Qualitative Study: Responses to Fourth Open-Ended Question

Q: What specific features do you (or would you) look for in using a Rating Web Site, and why?

Features Looked for in a Rating Web Site	Why?[1]	Inferred Factor (or Attribute)
Customer reviews[2] Customer ratings[2] Expert reviews Expert ratings Others' opinions	Credible, Reliable, Avoids bias, Trustworthy	Credibility of Rating Web Site
All possible alternatives[2] All possible criteria/features Information on alternatives Including all companies[2]	Full information, Include everything, Will not miss out, See all options	Information on many alternatives
Allows me to select criteria (such as price, warranties)[2] Allows me to ask for a specific company/brand[2] Allows me to set how many options I want to compare	So I can get what I want, So I can include what I am interested in	Customization (or control) of information

Notes: [1] Most frequent reasons given for each set of features, using respondents' own words. [2] Most frequent responses within each set.

portunity for *customization (or control) of information* that emerged earlier from the literature review as well.

Finally, the fourth open-ended question asked, "What specific features do you (or would you) look for in using a Rating Web Site, and why?" The answers to this question were more detailed and, because it was a two-part question, the responses are shown in Table 1 for ease of viewing. It is seen that the responses to this question once again reinforce the three dimensions from the literature review (credibility, many alternatives, and customization) as relevant factors for choosing a Rating Web Site. The one difference is that respondents indicated that they want information on *all* alternatives (so as not to exclude any option from consideration), whereas earlier they specifically said they would want information on a large number of alternatives.

After consolidating the responses from the qualitative study, it was clear that ease of decision making (or saving effort) was not mentioned directly as a relevant factor (except in the first question where it was mentioned as a reason for using a Rating Web Site). Seven of the respondents were then approached for clarification on this issue. These respondents were asked why they did not suggest ease of decision (or ease of comparison) as a relevant factor in choosing a Rating Web Site. Their answers, though varied in wording, essentially said that making a better, easier decision was *the very reason for using a Rating Web Site,* in other words, a core benefit, and was therefore "understood." They looked at a Rating Web Site precisely to save time and effort. In contrast, the other factors helped them to decide *which particular Rating Web Site(s) to use* in order to search for information.

These insights also fit well with the literature review, which suggests that saving effort may be a higher-order construct for information on many alternatives (in one place) and the ability to customize that information. Biswas (2004) posits that search efficiency is the driving force for information search on the Web and that online consumers look for tools that facilitate that process (e.g., search engines). Bechwati and Xia (2003) explain that being cognitive misers, consumers are well aware that interactive decision aids save them from greater effort in information search and processing. In other words, consumers know that online decision aids make their search and decision process easier, and it is the driving reason to use such aids in the first place. However, to decide between different Rating Web Sites, consumers are likely to consider the three other factors, as borne out by the depth interviews and the literature.

EMPIRICAL VERIFICATION OF ATTRIBUTES

Before conducting an experiment to rigorously determine the relative influence of the attributes (or factors), a study was conducted to verify that the attributes revealed in the

Table 2
Exploratory Factor Analysis and Means for Items

Q: In using Rating Web Sites, how important are the following factors?

	Factor Loadings[1]			
Items[2]	**Credibility**	**Information on Many Alternatives**	**Customization**	**Means**
Customer reviews of laptops are provided	0.908			4.59
Other customers' rating of laptops are provided	0.865			4.56
There is an industry association's seal of approval	0.639			4.68
There are links to the laptop company Web sites		0.864		3.85
There are short descriptions of all laptops		0.726		3.74
Every laptop on the market is included		0.659		3.29
You can select your own criteria for rating laptops			0.849	4.50
You can set min/max levels for certain criteria			0.684	4.47
You can ask for a specific laptop to be included			0.606	4.79

Notes: Extraction method: principal component analysis; rotation method: varimax with Kaiser normalization; rotation converged in four iterations; the factor analysis explained 63.53 percent of total variance. [1] All factor loadings not shown were under 0.4, with the majority under 0.2. [2] Each scale ranges from 1 to 5 (where 1 = "not at all important" and 5 = "extremely important").

qualitative study were separate constructs. Three statements were used for each attribute (see Table 2) to capture multiple aspects (or features) of that attribute as suggested by the qualitative study, the literature, and a review of actual Rating Web Sites.

As seen from Tables 1 and 2, *credibility of the Rating Web Site* was captured using the two most frequent responses from the qualitative research ("customer reviews" and "customer ratings"), which subjects mentioned as features they associated with credibility (and which many Rating Web Sites already provide), and a third statement regarding an "industry seal of approval" taken from the literature. Researchers suggest that one way to increase the perceived credibility of a Web site is to use Web assurance seals, such as TRUSTe (Odom, Kumar, and Saunders 2002). This approach could apply equally well to increasing the credibility of Rating Web Sites by including an industry association seal of approval or accreditation, which some Rating Web Sites already use. *Information on many alternatives* was captured by integrating the two most frequent responses from the qualitative research into one ("all possible alternatives/companies") and two other statements ("links to company Web sites" and "short descriptions of all options") based on a review of actual Rating Web Sites, which suggests that these are realistic ways to provide information on many alternatives. *Customization (or control) of information* was captured using the two most frequent responses from the qualitative research ("select criteria" and "ask for a specific company/brand") and a third statement ("set min/max levels for certain criteria"), all three based on actual features used by Rating Web Sites.

A sample of 34 undergraduate business students, who used the Internet extensively and had high familiarity with Rating Web Sites (as in the qualitative study), was used to conduct factor analysis to verify that the attributes revealed by the qualitative study were separate constructs. As in the qualitative study, these respondents were fairly evenly divided by gender (males 15, females 19), had a mean age of 22.5, and were mostly Caucasian (94.1 percent).

The respondents were asked, "In using Rating Web Sites, how important are the following factors?" The list that followed included the nine items discussed above (and shown in Table 2), using scales ranging from 1 to 5 (where 1 = "not at all important" and 5 = "extremely important"). The nine items emerged clearly as the three anticipated factors—that is, credibility of Rating Web Site, information on many alternatives, and customization of information (see Table 2). In addition, the reliabilities of these attributes were quite acceptable for a theory-building study, with Cronbach's alphas at 0.78 for credibility, 0.72 for many alternatives, and 0.75 for customization. Further, examining the means for the nine items suggested that credibility of the Rating Web Site and the opportunity for customization of information seemed highly (and equally) important considerations but having information on many alternatives appeared somewhat less important (see Table 2).

EXPERIMENTAL INVESTIGATION

Research Design and Procedure

Next, a laboratory experiment was conducted to determine the relative importance of the three identified attributes—credibility of Rating Web Site, information on many alternatives, and customization of information. It was seen that simply asking respondents to rate the importance of each statement resulted in all attributes being highly rated and, although credibility and customization were rated higher than having information on many alternatives, the analysis did not differentiate sufficiently between the top two attributes. Therefore, it was decided to use a *full profile* (with an approximation of a *full factorial*) research design to force subjects to engage in a thoughtful trade-off comparison of the attributes.

A *full profile* design views all attributes together (instead of in pairwise comparisons) and is therefore closer to real-world decisions. In addition, an approximation of a *full factorial* design was used for the following reasons. Although fractional factorial designs are fairly reliable, information is always lost—making the results less than ideal. Yet researchers use them because full factorial designs are not typically possible. For example, even with only four attributes and three levels, a full factorial design would have 3^4, or 81 profiles. In contrast, as there were three critical attributes in this study (based on the qualitative research and the literature review) and each had two levels (the attribute is either present or absent), a full factorial design had only 2^3, or 8 profiles (see Appendix A). However, as two of these profiles (all attributes absent and all attributes present) do not help differentiate between the three attributes, the remaining six profiles were used to approach a full factorial design, with minimum loss of information.

There was another advantage to using six profiles to represent six Rating Web Sites. Qualitative results indicated that respondents visited anywhere from one to five (average of 2.3) Rating Web Sites for a particular product search. Using six profiles allowed subjects to decide whether they would go to only one Rating Web Site (of the six), or possibly pick all six, or any other combination in between. The experimental design was therefore a realistic choice situation based on the qualitative study and allowed for natural variance in responses.

Fifty-one undergraduate business students were recruited for the experiment, screened for extensive Internet use (several times a week for more than six years), and had a high familiarity with Rating Web Sites. All respondents had actually used Rating Web Sites several times for information search leading to a purchase or use decision. In terms of demographics, the respondents were similar to those in the qualitative study and the factor analysis, fairly evenly divided by gender (males 23, females 28), mean age of 22.2, and mostly Caucasian (92.3 percent).

A paper-and-pencil scenario was used with a computer laptop as the product in question. The choice of the product was based on the results of the qualitative study, where computers were rated second highest as a likely product for using a Rating Web Site to search for information. The highest rated product (car) was ruled out to make the situation more realistic. Most students at this university already owned cars; however, due to a college of business initiative, all business students had been asked recently to purchase a laptop computer for in-class use.

A common scenario was used for all six profiles (see Appendix B). Subjects were told that there are six popular Rating Web Sites for laptops, but that each Web site is slightly different in terms of what it offers the user. They were told that they may want to visit all six Web sites or visit only some of them (from one to five). They were asked to carefully examine each Rating Web Site and indicate whether they would use it or not (with choice measured dichotomously as yes/no). A pretest using ten subjects ascertained that the scenario, the product used, and the profiles of the six Rating Web Sites were seen as highly relevant and realistic. (Details on the ranking question used in the pretest are discussed later.)

Unlike conjoint studies or an online experiment in which subjects would view each profile sequentially, this study presented the profiles simultaneously (see Appendix B). In sequential viewing, a subject views each profile, rates, ranks, or makes a choice, and then goes on to the next profile. It often happens that on seeing subsequent profiles with better combinations of attributes, a subject may feel that he or she would have responded differently to one or more previous choices, but it is too late to change earlier responses. Consequently, the results of such studies do not capture a carefully considered trade-off of attributes. By presenting the six profiles simultaneously in an economically appealing design, this study allows subjects to thoughtfully examine the attributes for each profile and thus indicate more reliable choices.

Furthermore, traditional conjoint analysis typically uses one statement to describe each attribute. Although there is nothing wrong with this approach, it does not fully capture multiple aspects of a given attribute. As described earlier, three statements were used for each attribute to capture multiple aspects (or features) of that attribute as suggested

by the qualitative study, the literature, and a review of actual Rating Web Sites (see Table 2 and Appendix B).

For each profile (1–6), each of the three attributes (credibility of Rating Web Site, information on many alternatives, and customization of information) could be present or absent. If an attribute was present, all three statements that captured that attribute were marked as "yes"; if it was absent, all three were marked as "no" (see Appendix B). Thus, the experimental design in Appendix B matched that in Appendix A. The order of the profiles was randomized to minimize order effects, but the numbers indicated (in Appendices A and B) identify the profiles uniquely for analysis (e.g., profile 6 provided credibility of Rating Web Site and customization of information, but not information on many alternatives). The order of the features (in Appendix B) was also randomized to reduce order effects, but the three sets of features (for each attribute) were kept together to make it easy for the subjects to compare the six profiles on all the features.

As in the case of conjoint analysis, the profiles were clearly spelled out and defined; hence, there was no need to conduct manipulation checks as in other experiments. Instead, after the experiment, subjects were asked to rate the relevance and realism of the scenario as well as the difficulty of the experimental design.

Results of the Experiment

Given the choice of a laptop as the product of consideration and the recent college mandate to buy one, students seemed to find the scenario extremely relevant (6.33 on a scale of 1 to 7). Given their high familiarity with Rating Web Sites, they found the scenario to be pretty realistic (5.78 on a scale of 1 to 7). And, finally, they rated the difficulty of the experiment as 3.89 (on a scale of 1 to 7, with 7 being extremely difficult), thus suggesting that they found the design fairly easy to understand and follow. It is understandable that the design was not seen as *extremely* easy because it did take some effort to compare the various alternatives and make choices. However, even experiments designed for traditional conjoint analysis are not very easy for subjects, so this rating was encouraging.

Choice was used as the dependent variable in a binomial logistic regression. Each of the 51 subjects effectively responded to six "experimental treatments," thus creating 306 choice responses. The three statements for each attribute were combined, as they were identical (all present or all absent). Thus, the analysis directly tested the relative importance of the three attributes as the independent variables. Results showed a strong model ($\chi^2 = 92.82$, $p < 0.001$) with a pseudo R^2 (Nagelkerke) of 0.35. Moreover, the model correctly predicted "yes" choice responses (85.7 percent) and "no" choice responses (58.8 percent). All three attributes were significant: credibility of Rating Web Site ($\beta = 2.24$, $p < 0.001$), customization of information ($\beta = 1.47$, $p < 0.001$), and information on many alternatives ($\beta = -0.85$, $p < 0.01$). It is seen that credibility emerged as the most important attribute, followed by customization, and interestingly, information on many alternatives had a negative beta coefficient. It appears that although having information on many alternatives was mentioned as an important factor in the qualitative study and in the literature review, a side-by-side comparison of attributes in different combinations revealed that it is the least important attribute. Moreover, it appears that too much information may be seen as a liability in that saving search effort is a driving reason for using a Rating Web Site.

The frequencies for choice of Rating Web Sites (for the profiles in Appendix B) further support these results. Respondents could choose anywhere from one to all six of the profiles as Rating Web Sites they would use. Forty-six respondents chose profile 6 (offering both credibility and customization), 39 chose profile 3 (offering only credibility), 33 chose profile 2 (offering only customization), 32 chose profile 5 (offering both credibility and information on many alternatives), 20 chose profile 4 (offering both customization and information on many alternatives), and only five chose profile 1 (offering only information on many alternatives).

Thus, it is clear from the frequencies that credibility of the Rating Web Site is seen as the most important attribute, followed by customization of information, and naturally, a profile that offers both attributes is chosen most frequently. The profile with information on many alternatives as the only attribute is not only chosen least of the six but it is chosen very infrequently. Furthermore, respondents prefer profiles with only credibility or only customization to profiles that include these attributes along with information on many alternatives, clearly showing the downside of having too much information.

It may be worthwhile to include a brief discussion here of earlier analysis that supports these results. In the pretest for the scenario, subjects were asked to rank the six Web sites (see Appendix B, last entry) instead of making a choice for each of them. It is seen that the ranking pattern in the pretest is similar to the choice pattern in the final experiment (see Table 3).

In examining these results prior to the experiment, however, it was thought that the ranking task may have been a bit demanding for the subjects, as they showed preference for

Table 3
Summary of Results

Study	Importance of Attributes in Choosing a Rating Web Site for Information Search	Other Findings
Qualitative Study (n = 21)	Three attributes—credibility, customization, and information on many alternatives—mentioned as relevant factors for visiting a particular Rating Web Site (see Table 1)	• Underlying reason for using a Rating Web Site was to make a better and easier decision. • Most frequent use of rating Web sites was for cars (71%), followed by computers (62%). • One to five Rating Web Sites were visited (mean of 2.3) for a particular information search.
Exploratory Factor Analysis and Mean Importance Ratings Study (n = 34)	All three attributes deemed important, but credibility and customization appear to be more important than having information on many alternatives. Also, credibility and customization appear to be equally important (see Means in Table 2)	• Nine items from qualitative study, literature, and actual Rating Web Sites emerged as the three identified attributes (see Table 2).
Pretest (n = 10) N = 60 ranking responses	Mean ranking of profiles:* 2.8 (credibility and customization) 3.1 (credibility) 3.1 (customization) 3.6 (credibility and information on many alternatives) 4.1 (customization and information on many alternatives) 4.3 (information on many alternatives)	• Realism and relevance of scenarios was high.
Experiment (n = 51) N = 306 choice responses	Credibility viewed as the most important attribute for choosing a Rating Web Site ($\beta = 2.24$, $p < 0.001$), then customization ($\beta = 1.47$, $p < 0.001$). Information on many alternatives had a negative effect on choice ($\beta = -0.85$, $p < 0.01$)	• Realism and relevance of scenarios was high. • Ease of experimental task was average. • Frequency of choice of six profiles (using same order as pretest ranking results above): 46, 39, 33, 32, 20, 5.

Notes: n = number of respondents; n = number of data points. * Ranking scale 1-6, where 1 = highest rank, 6 = lowest rank (see Appendix B).

profiles that offered "only credibility" or "only customization" over profiles that added "information on many alternatives" to these attributes. To avoid any undue difficulty in the comparison and evaluation process, it was decided to use choice as a dependent variable in the actual experiment instead of ranking. A second reason to use choice in trade-off analysis (instead of rating or ranking) is that a yes/no choice for each option is closer to an actual decision process than rating or ranking options (McCullough 1998).

After conducting the experiment, it was clear that the pretest ranking results (based on only ten subjects) closely support the results of the binary logistic regression and the choice frequencies in the final experiment (n = 51). However, the results of the full experiment understandably go further in teasing out the relative importance of the three attributes.

A summary of all the results is presented in Table 3 to indicate how each study in the paper adds (in a stepwise manner) to our understanding of the importance of attributes in choosing a Rating Web Site. The table also summarizes other interesting findings from each study, for instance, support from the qualitative study for the underlying reason for using a Rating Web Site, support from the importance ratings study for the three-factor structure, and so on.

DISCUSSION

Theoretical Implications

The findings of this study show that the credibility of a Rating Web Site is a critical factor for consumers. Previously, researchers have suggested that credibility is likely to be an important issue for Web sites in general (Klein and Ford

2003) and for electronic agents in particular (West et al. 1999), and one study (Smith and Brynjolfsson 2001) found empirical support for reliability as an important factor for using shopbots. This study supports earlier research on the issue of credibility of Web sites and of shopping agents in particular. Moreover, it extends this research by showing empirically that credibility is an important factor to consumers in choosing a Rating Web Site for online information search. Tying this to the qualitative results, we can infer that risk reduction is therefore an important underlying motive in choosing a particular Rating Web Site.

Researchers (Aggarwal and Vaidyanathan 2003; Bechwati and Xia 2003; Grenci and Todd 2002) have suggested that customization (or control) would be an important factor for using Web sites in general and for shopping agents in particular. However, this notion had not been tested empirically. This study conducts an empirical test to find that customization (or control) of information is indeed an important factor to consumers in deciding whether to use a particular Rating Web Site, but that it ranks second to credibility.

The results also show that having information on many alternatives was least important as a factor for choosing a Rating Web Site, and was seen as a liability in a rigorous trade-off among attributes. Thus, even though this was an important factor in the qualitative study and literature review, the study on importance ratings and especially the experimental findings suggest that consumers do not place a high value on having information on many alternatives. This result indirectly, but strongly, supports previous research that saving effort is important to online consumers (e.g., Bakos 1997; Bucklin and Sismeiro 2003; Häubl and Trifts 2000; Todd and Benbasat 2000) and extends it to the Rating Web Site context.

The amount of information available on the Internet is so vast and the number of alternatives that consumers face is so daunting that online consumers often face an information overload (Dholakia and Bagozzi 2001; West et al. 1999). As a result, consumers do not necessarily want more information when they go online and are happy to make decisions based on smaller amounts of relevant information. For example, in an experiment testing the use of a computerized decision support system to select an apartment, Todd and Benbasat (1992) found that this type of decision aid reduced effort but did not increase the total information used by the subjects. The researchers concluded that people use decision aids to minimize their effort rather than to seek more information. Similarly, in a study of information search on automobiles, Ratchford, Lee, and Talukdar (2003) found that compared to other sources of information, the Internet leads to reduced search. Biswas (2004) explains that online consumers tend to focus on search efficiency to manage the information overload on the Web, and that the easy availability of search agents makes this possible. The results of this study support and extend these earlier findings. By revealing that information on many alternatives may be viewed by consumers as a liability in using a Rating Web Site, this study reinforces the notion that saving effort is extremely important as an underlying motive in searching for information online.

Methodological Implications

In addition to these theoretical implications, the study offers some methodological contributions. By combining qualitative and quantitative approaches, it is possible to explore relevant factors and then determine their relative importance, thus offering greater insights. In this study, for *credibility of Rating Web Site* and *customization of information,* the two research approaches coincided in their findings and reinforced the importance of these two factors. Qualitative research had suggested (in terms of number of responses) that credibility might be more important than customization, and the trade-off analysis allowed an empirical verification of this. With regard to *information on many alternatives,* the results added to our understanding of this factor in a stepwise manner. Qualitative research suggested it was an important factor, the means ratings showed it as less important than the other two attributes, and the trade-off analysis revealed it as a liability in relation to the other attributes. Thus, the quantitative findings indirectly, but strongly, suggested the importance of saving effort, which was a factor mentioned in the qualitative study as an underlying reason for using a Rating Web Site. Consequently, the two research approaches complemented each other nicely in rounding off the insights.

Other methodological contributions of this study include avoiding some concerns associated with typical conjoint studies and offering alternative ways to enhance measurement. First, having few attributes and levels allows an approximation of a full factorial design, so that little information is lost. Second, by offering all profiles simultaneously instead of sequentially, a true comparison of profiles is enabled, leading to more reliable choice responses. Moreover, by including several aspects for each factor instead of a single statement, attributes can be operationalized more realistically in terms of specific features one might find in the actual context. Finally, by offering

several features of each attribute, such a design allows subjects to fully consider the importance of each attribute to them in a trade-off process.

Managerial Implications

One implication of the quantitative study for practitioners is that companies or organizations that create Rating Web Sites must recognize the critical importance of credibility. Based on the qualitative findings, credibility can be enhanced through a large number of customer reviews and ratings and at least some expert reviews and ratings. It is also recommended that Rating Web Sites acquire an industry seal of accreditation or approval for added credibility. Furthermore, it is not enough that Rating Web Sites merely suggest "high credibility" through these features. The developers of Rating Web Sites should be truly neutral and unbiased in their evaluations to earn a reputation of high credibility and win the online consumer's trust. Those Rating Web Sites or shopbots that include (or sort) options based on retailer spending (Betts 2001; Smith 2002) may need to rethink their approach in the future as consumers look more carefully into whether a Rating Web Site or shopbot is biased or unbiased. For example, a report that *HealthGuide* distorts hospital ratings based on ties with some of the hospitals has seriously reduced this Rating Web Site's credibility (Schamp 2003). Even association with a retailer, such as Epinion's merger with Microsoft's E-Shop, can raise doubts about the neutrality expected from a Rating Web Site (Wolverton 2000).

Another practical implication of the study for Rating Web Sites and shopbots is the importance of offering consumers the opportunity for customization (or control). Some researchers point out that true control is impossible (at least in the case of shopbots) because the very nature of the shopping agent makes it operate outside the consumer's control (Hostler, Yoon, and Guimaraes 2004). Nevertheless, offering customization is likely to increase perceived control, and in any case, the study showed that customization is appreciated for itself. Some Rating Web Sites and shopbots are better at providing this than others and allow consumers to select attributes for comparison, set minimum and maximum acceptable levels for each attribute, and add options (e.g., companies, products, organizations) they may wish to evaluate. Those that do so should continue to offer such features and those that currently offer only standard comparison should think seriously about allowing customization. As online customers look to "lock in" to a particular Web site (Johnson et al. 2004; Murray and Häubl 2002), Rating Web Sites and shopbots may wish to offer unique patterns of customization to create loyal customers.

A major finding of the study is that no matter what they say about wanting to include a large number of alternatives, when it comes to making realistic choices, users of Rating Web Sites truly want to avoid information overload to the extent that they will settle for information on fewer alternatives. This preference suggests that saving search effort is critical for users of Rating Web Sites. Some practical implications for developers of Rating Web Sites are related to customization. Typically, customization on a Rating Web Site allows one to "pick," "set," and "select" alternatives (or levels of criteria) from a huge database of information, and so it simplifies the information search process. Thus, it is much more likely to save effort than to increase it. However, depending on the software utilized, excessive customization on a Rating Web Site may increase search effort for the online consumer, and this possibility must be avoided.

The negative effect on choice of "information on many alternatives" further suggests that it is not necessary to include information on all possible alternatives in a Rating Web Site. This empirical finding supports Smith's (2002) suggestion (in a conceptual article) that shopbots should be selective in offering options and product attributes to reduce search time for the online consumer. At the same time, Rating Web Sites and shopbots need to be careful not to pare down information in a way so as to exclude reasonable options. In some cases, they may need to include all alternatives if these are all well known or if the list is not too extensive. An advantage of including all alternatives (and making this known) is that online users will have peace of mind knowing that nothing is left out; and even though the Web site may take longer to load, users may still save some effort by focusing only on the top-rated alternatives.

Shopbots in particular are already developing a reputation for omitting alternatives (Edwards 2000), and if consumers encounter such a situation (where they find a better product after purchase), they are likely to shun that shopbot and encourage others to do so as well. So, this particular finding implies that developers of Rating Web Sites need to employ a fine-tuned balancing act in deciding exactly how many (and which) alternatives to include. A hands-on search of other Rating Web Sites for a given product category is recommended to determine, for example, which options appear on several Rating Web Sites and which, therefore, simply cannot be omitted in developing a Rating Web Site for that category.

Research Implications

The use of small, student samples is common in experiments on the use of electronic decision aids (e.g., Bechwati and Xia 2003; Todd and Benbasat 1992). Furthermore, the sample sizes in this study were sufficient for qualitative research (n = 21) and for exploratory factor analysis (n = 34). The main experiment used a sample size of 51, which was more than sufficient for binomial regression analysis based on 306 choice responses, arising from the experimental design that offered six profiles to each subject for evaluation. This sample was also large enough to examine the frequency distribution of choice for the six profiles.

Although it would have been nice to have larger samples in each case, it was not easy to do so due to the screening for high familiarity with Rating Web Sites. For the experiment, this screening was even more rigorous and included actual previous (multiple) use of Rating Web Sites for information search leading to purchase or use decisions. The advantage of this screening process was that the respondents knew exactly what they looked for in Rating Web Sites, and were not simply answering a survey based on imagining what they would do in such a situation.

Although there was little variation in terms of sample demographics, students were an appropriate population for the task of evaluating Rating Web Sites to search for information about laptop computers, given their frequent use of online searches, their high familiarity with Rating Web Sites, and the relevance of a laptop computer to them. Future research could build on this study both in terms of sample size and demographics by tapping into clickstream data (e.g., Bucklin and Sismeiro 2003; Moe 2003) at Rating Web Sites or by gathering self-reports on browsing patterns (e.g., Kaufman-Scarborough and Lindquist 2002) related to Rating Web Sites.

A paper-and-pencil experiment is naturally not as realistic as an experiment that captures online behavior. However, the pretest (and the final study) verified that the scenario, the attributes, and the research design were viewed as highly realistic by people who had actually used Rating Web Sites for information search. In addition, the closely matching results of the pretest (using ranking data with a very small sample) and the experiment (using choice data with a much larger sample) give further credence to the validity of the experimental design.

Future research could build on this study by conducting online experiments to gauge actual subject reactions to different combinations of attributes offered by Rating Web Sites. However, an online experiment would forfeit a major advantage of this study gained by presenting the six profiles simultaneously to capture trade-off between attributes more accurately. In an online experiment, respondents would see each Rating Web Site separately and have to indicate choice, and then see other Web sites that might make them want to change their previous choices. Nor is ranking as easy or accurate in an online experiment. Respondents may not be able to recall attributes well enough after viewing six different Rating Web Sites to be able to say definitively which one they liked best, and so on.

The focus on three factors was suggested by qualitative research and the literature review, both of which were *not* constrained by product category. Hence, these appear to be fundamental attributes across product categories. However, the experiment compared these attributes for a specific product category—namely, laptop computers. Future research could investigate whether the relative importance of these attributes is different for other categories of products, or for services, or organizations, or if it changes with greater product or online experience.

It was necessary for the research design that each attribute be either present or absent. It is possible that this might have exaggerated the differences among attributes. At the same time, it was established that subjects saw the design as realistic. For example, when thinking of an actual Rating Web Site, it is easy to judge whether it is credible or not, whether it includes a large number of alternatives or not, and whether it allows one to customize the information search or not. Experienced users can quickly categorize actual Rating Web Sites into such dichotomies.

Finally, the study went beyond the typical conjoint analysis approach by including three aspects of each factor to ensure that it was well represented. However, to keep the design simple and the trade-off process manageable, all three aspects were either present or absent for each factor. Moreover, this design supports earlier research (e.g., Dabholkar 1994; 1998) that consumers prefer to evaluate alternatives based on composite attributes rather than on individual features (or beliefs) that constitute these composite attributes. Nevertheless, future research could build on this design to gauge the relative importance of the different aspects that constitute each factor, so as to offer more detailed direction to the developers of Rating Web Sites.

For example, in terms of *credibility of Rating Web Site,* studies could investigate whether it is more beneficial for a Rating Web Site (or shopbot) to provide customer ratings or to include a seal of approval. In terms of *information on many alternatives,* is it more important to include all the alternatives or to offer short descriptions of the included alternatives? In terms of *customization of information,* is it more relevant to consumers to be able to select criteria for

evaluation or to add an alternative of interest? Similarly, even for the underlying dimension of *saving search effort,* future research could investigate what types of effort are most worth saving from the online consumer's perspective—whether it is effort related to *information search on alternatives* (e.g., visiting linked Web sites), or effort related to using *customization* features (e.g., setting min/max levels for criteria), or effort related to ascertaining the *credibility of the Rating Web Site* (e.g., reading a large number of customer reviews).

REFERENCES

Aggarwal, Praveen, and Rajiv Vaidyanathan (2003), "The Perceived Effectiveness of Virtual Shopping Agents for Search vs. Experience Goods," in *Advances in Consumer Research,* vol. 30, Punam A. Keller and Dennis W. Rook, eds., Provo, UT: Association for Consumer Research, 347–348.

Alba, Joseph, John Lynch, Barton Weitz, Chris Janiszewski, Richard Lutz, Alan Sawyer, and Stacy Wood (1997), "Interactive Home Shopping: Consumer, Retailer, and Manufacturer Incentives to Participate in Electronic Marketplaces," *Journal of Marketing,* 61 (July), 38–53.

Bakos, J. Yannis (1997), "Reducing Buyer Search Costs: Implications for Electronic Marketplaces," *Management Science,* 43 (12), 1676–1692.

Bechwati, Nada Nasr, and Lan Xia (2003), "Do Computers Sweat? The Impact of Perceived Effort of Online Decision Aids on Consumers' Satisfaction with the Decision Process," *Journal of Consumer Psychology,* 13 (1–2), 139–148.

Betts, Mitch (2001), "Brands Still Matter, Even for Shopbots," *MIT Sloan Management Review,* 42 (2), 9.

Biswas, Dipayan (2004), "Economics of Information in the Web Economy: Towards a New Theory?" *Journal of Business Research,* 57 (7), 724–733.

Bucklin, Randolph E., and Catarino Sismeiro (2003), "A Model of Web Site Browsing Behavior Estimated on Clickstream Data," *Journal of Marketing Research,* 40 (August), 249–267.

Dabholkar, Pratibha A. (1994), "Incorporating Choice into an Attitudinal Framework: Analyzing Models of Mental Comparison Processes," *Journal of Consumer Research,* 21 (June), 100–118.

—— (1998), "Expectancy Value Models in Consumer Research," in *The Elgar Companion to Consumer Research and Economic Psychology,* Peter E. Earl and Simon Kemp, eds., Cheltenham, UK: Edward Elgar, 200–208.

Davis, Fred D., Richard P. Bagozzi, and Paul R. Warshaw (1989), "User Acceptance of Computer Technology: A Comparison of Two Theoretical Models," *Management Science,* 35 (8), 982–1003.

Dholakia, Utpal, and Richard P. Bagozzi (2001), "Consumer Behavior in Digital Environments," in *Digital Marketing,* Jerry Wind and Vijay Mahajan, eds., New York: John Wiley and Sons, 163–200.

Edwards, John (2000), "Is That Your Best Offer? Shopbots Search the Web for Bargains," *CIO Magazine* (November 1) (available at www.cio.com/archive/110100_et.html).

Gershoff, Andrew D., Ashesh Mukherjee, and Anirban Mukhopadhyay (2003), "Consumer Acceptance of Online Agent Advice: Extremity and Positivity Effects," *Journal of Consumer Psychology,* 13 (1–2), 161–170.

Grenci, Richard T., and Peter A. Todd (2002), "Solutions-Driven Marketing," *Communications of the ACM,* 45 (3), 65–71.

Häubl, Gerald, and Valerie Trifts (2000), "Consumer Decision Making in Online Shopping Environments: The Effects of Interactive Decision Aids," *Marketing Science,* 19 (1), 4–21.

Hostler, R. Eric, Victoria Y. Yoon, and Tor Guimaraes (2004), "Assessing the Impact of Internet Agent on End Users' Performance," *Decision Support Systems,* 41 (1), 313–323.

Iacobucci, Dawn, Phipps Arabie, and Anand Bodapati (2000), "Recommendation Agents on the Internet," *Journal of Interactive Marketing,* 14 (3), 2–11.

Johnson, Eric J., Wendy W. Moe, Peter S. Fader, Steven Bellman, and Gerald L. Lohse (2004), "On the Depth and Dynamics of Online Search Behavior," *Management Science,* 50 (3), 299–308.

Kaufman-Scarborough, Carol, and Jay D. Lindquist (2002), "E-Shopping in a Multiple Channel Environment," *Journal of Consumer Marketing,* 19 (4), 333–350.

Klein, Lisa R., and Gary T. Ford (2003), "Consumer Search for Information in the Digital Age: An Empirical Study of Prepurchase Search for Automobiles," *Journal of Interactive Marketing,* 17 (3), 29–49.

Kolesar, Mark B., and R. Wayne Galbraith (2000), "A Services-Marketing Perspective on E-Retailing: Implications for E-Retailers and Directions for Further Research," *Internet Research: Electronic Networking Applications and Policy,* 10 (5), 424–438.

Lederer, Albert L., Donna J. Maupin, Mark P. Sena, and Youlong Zhuang (2000), "The Technology Acceptance Model and the World Wide Web," *Decision Support Systems,* 29 (1), 269–282.

McCullough, P. Richard (1998), "Trade-Off Analysis: A Survey of Commercially Available Techniques," *Quirk's Marketing Research Review* (February), (available at www.quirks.com/articles/article.asp?arg_ArticleId=307).

Mittal, Vikas, and Mohanbir S. Sawhney (2001), "Learning and Using Electronic Information Products and Services," *Journal of Interactive Marketing,* 15 (1), 2–12.

Moe, Wendy W. (2003), "Buying, Searching, or Browsing: Differentiating Between Online Shoppers Using In-Store Navigational Clickstream," *Journal of Consumer Psychology,* 13 (1–2), 29–39.

Murray, Kyle B., and Gerald Häubl (2002), "The Fiction of No Friction: A User Skills Approach to Cognitive Lock-In," in *Advances in Consumer Research,* vol. 29, Susan M. Broniarczyk and Kent Nakamoto, eds., Provo, UT: Association for Consumer Research, 11–18.

Odom, Marcus D., Anand Kumar, and Laura Saunders (2002), "Web Assurance Seals: How and Why They Influence Consumers' Decisions," *Journal of Information Systems,* 16 (2), 231–250.

Ratchford, Brian T., Myung-Soo Lee, and Debabrata Talukdar (2003), "The Impact of the Internet on Information Search for Automobiles," *Journal of Marketing Research,* 40 (May), 193–209.

——, Debabrata Talukdar, and Myung-Soo Lee (2001), "A Model of Consumer Choice of the Internet as an Information

Source," *International Journal of Electronic Commerce,* 5, 3 (Spring), 7–21.

Reibstein, David J. (2002), "What Attracts Customers to Online Stores, and What Keeps Them Coming Back?" *Journal of the Academy of Marketing Science,* 30 (4), 465–473.

Schamp, Jim (2003), "Unclear Rules Run Hospital Ratings Game," *Herald-Sun* (September 27) (available at www.healthjournalism.org/files/schamp_story_9.29.pdf).

Shop.org (2005), "Statistics: U.S. Online Shoppers," shop.org, Washington, DC (available at www.shop.org/learn/stats/).

Smith, Michael D. (2002), "The Impact of Shopbots on Electronic Markets," *Journal of the Academy of Marketing Science,* 30 (4), 442–450.

——, and Erik Brynjolfsson (2001), "Consumer Decision-Making at an Internet Shopbot: Brand Still Matters," *Journal of Industrial Economics,* 49 (4), 541–558.

Todd, Peter, and Izak Benbasat (1992), "The Use of Information in Decision Making: An Experimental Investigation of the Impact of Computer-Based Decision Aids," *MIS Quarterly,* 16 (September), 373–393.

——, and —— (2000), "Inducing Compensatory Information Processing Through Decision Aids That Facilitate Effort Reduction: An Experimental Assessment," *Journal of Behavioral Decision Making,* 13 (1), 91–106.

Vijayasarathy, Leo R., and Joseph M. Jones (2003), "Do Internet Shopping Aids Make a Difference? An Empirical Investigation," *Electronic Markets,* 11 (1), 75–83.

West, Patricia M., Dan Ariely, Steve Bellman, Eric Bradlow, Joel Huber, Eric Johnson, Barbara Kahn, John Little, and David Shkade (1999), "Agents to the Rescue?" *Marketing Letters,* 10 (3), 285–300.

Wolverton, Troy (2000), "MSN to Place Reviews on Shopping Site," *CNET News* (July 11) (available at news.com.com/2100–1017–243040.html).

APPENDIX A

Full Factorial Experimental Design

	Profiles							
Attributes	**1**	**2**	**3**	**4**	**5**	**6**	**7***	**8***
Credibility of Rating Web Site	0	0	1	0	1	1	0	1
Information on Many Alternatives	1	0	0	1	1	0	0	1
Customization of Information	0	1	0	1	0	1	0	1

Notes: 0 = "attribute is absent" and 1 = "attribute is present." * Profiles 7 and 8 are excluded, as they do not differentiate based on attributes. Profiles 1 through 6 are used to approximate a full factorial design and to keep the comparison process manageable for subjects. Using a design with six profiles is also more realistic than one with eight profiles, based on qualitative research that showed that respondents visited up to five Rating Web Sites for a particular decision.

APPENDIX B
Scenario and Profiles Used in Experiment

You have just decided to buy a new laptop. You want to make a good decision but you want to make it fairly soon. You decide to go to a *Rating Web Site* so you can compare several alternatives.

A Rating Web Site is a Web site that rates products or services in a given industry (e.g., computers, cars, hotels, stocks, charities). Rating Web Sites rate or review different available alternatives on a number of criteria (e.g., price, quality, specific features, refund policy).

You discover that there are six popular Rating Web Sites for laptops, but each Web site is slightly different in terms of what it offers the user. You may want to visit all six Web sites, or you may want to visit only some of them (from one to five).

Here is a summary of what each of the six Rating Web Sites offers. Each combination of Web site features is different. Please carefully examine the features of each Rating Web Site, and indicate whether you would use this Web site.

Rating Web Site:	1	2	3	4	5	6
Features:						
Customer reviews of laptops are provided	No	No	Yes	No	Yes	Yes
Other customers' rating of laptops are provided	No	No	Yes	No	Yes	Yes
There is an industry association's seal of approval	No	No	Yes	No	Yes	Yes
There are links to the laptop company Web sites	Yes	No	No	Yes	Yes	No
There are short descriptions of all laptops	Yes	No	No	Yes	Yes	No
Every laptop on the market is included	Yes	No	No	Yes	Yes	No
You can select your own criteria for rating laptops	No	Yes	No	Yes	No	Yes
You can set min/max levels for certain criteria	No	Yes	No	Yes	No	Yes
You can ask for a specific laptop to be included	No	Yes	No	Yes	No	Yes
I would use this Rating Web Site: (Put Y/N for each) *(used in experiment)*	___	___	___	___	___	___
Please rank the six Rating Web Sites as (1–6) (where 1 = your top choice, 6 = your last choice) *(used in pretest)*	___	___	___	___	___	___