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When Electronic Recommendation Agents Backfire: Negative Effects on Choice Satisfaction, Attitudes, and Purchase Intentions
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Abstract
Many websites provide electronic recommendation agents that ask users questions about individual factors and their preferences for product attributes, and then rate and rank order the available products. Previous research has hailed these agents as rescuing consumers from choice overload. However, we report the results of an experiment in which use of an electronic recommendation agent negatively impacted participants’ choice satisfaction, attitudes, and purchase intentions over a period of between one and two weeks. The data support our hypothesis that use of an electronic recommendation agent leads consumers to overweight utilitarian product attributes and underweight hedonic product attributes in choice.

Online nutrition retailers offer consumers an enormous selection of highly nutritious foods, drinks, and dietary supplements. For a novice health and fitness enthusiast, deciding which of these categories of products are likely to be helpful, and then choosing individual products within those particular categories, can be confusing, even when only a few options are available. For example, when selecting a nutrition bar, consumers may consider a diverse array of product attributes, including Calories, fat content, fiber content, glycemic index, protein to carbohydrate ratio, protein quality, and vitamin and mineral content, among others. Typically, the product that is best for a given consumer will depend on a variety of individual factors, such as age, eating patterns, exercise frequency and intensity, gender, and strength and weight goals, among others.

This example illustrates how the increasing selection of products and product features available in the marketplace, and especially online, has increased the complexity of many purchase decisions. Since consumers do not want more choices per se, but rather the more customized options that expanded choice can bring (Pine, Peppers, and Rogers 2005), it follows that the attractiveness of the expanded choice set offered by internet retailers depends on the ability of consumers to sort through it efficiently (Alba et al. 1997).

Product recommendation websites assist consumers in making complex purchase decisions in diverse product categories. These websites provide electronic recommendation agents that first ask users questions about individual factors and their preferences for product attributes, and then rate and rank order available products on the basis of their responses. The goals of these agents include improving decision quality and increasing satisfaction (West et al. 1999).

Although previous research has extensively examined the influence of electronic recommendation agent use on decision quality (e.g., Haubl and Trifts 2000), far less research has examined effects on satisfaction. Furthermore, those papers that have examined satisfaction have primarily focused on satisfaction with the choice process (e.g., Bechwati and Xia 2003), rather than on satisfaction with the choice itself. However, choice satisfaction is important to marketers, since it has been shown to influence attitudes and purchase intentions (Oliver 1980).

In this paper, we examine how use of an electronic recommendation agent for nutrition bars impacts consumers’ choice satisfaction, attitudes, and purchase intentions over a period of one to two weeks, the time frame in which repurchase decisions for nutrition bars are typically made.

We conducted an experiment within the nutrition bar product category. The experimental design had two between-subjects conditions (recommendation agent vs. control). People recruited outside a behavioral laboratory near a large, urban university were assigned to one of the conditions and asked to examine descriptions of eight brands of nutrition bars and to select one of these brands to sample at home. At the conclusion of the in-lab portion of the experiment, participants received a package containing five sample bars of the brand that they had selected. One week after the experimental session, participants received an email that contained a link to an online follow-up survey that assessed their satisfaction with the brand that they selected, as well as their attitudes, purchase intentions, and other relevant variables.

Based on our hypothesis that use of an electronic recommendation agent leads consumers to overweight utilitarian product attributes and underweight hedonic product attributes, we predicted that participants in the agent condition would be more likely to choose one of the four utilitarian brands compared to participants in the control condition. Furthermore, we predicted that the total amount of time that participants spent examining the brands would not differ between the two conditions, as a lack of difference would indicate that participants in the agent condition did not just blindly follow the recommendations provided to them. However, we predicted that participants who ultimately selected a utilitarian brand would spend more time examining the brands than would participants who ultimately selected a hedonic brand, since utilitarian choices typically result from more intensive processing than do hedonic choices (Shiv and Fedorikhin 1999). The data supported all of these predictions.

Based on our hypothesis that use of an electronic recommendation agent reduces consumers’ long-term choice satisfaction, we predicted that participants in the agent condition would like the bars less than would participants in the control condition. Furthermore,
based on our hypothesis that use of an electronic recommendation agent leads consumers to overweight utilitarian product attributes and underweight hedonic product attributes in choice, we predicted that among participants in the agent condition, liking would be greater among those who chose a utilitarian brand than among those who chose a hedonic brand, whereas among participants in the control condition, liking would not differ between those who chose a utilitarian or hedonic brand. The data supported all of these predictions.

Finally, based on the hypothesis that use of an electronic recommendation agent negatively impacts consumers’ attitudes, purchase intentions, and other relevant variables, we predicted that participants’ ratings of the bars’ taste, their likelihood of purchasing the chosen brand, and their likelihood of recommending the chosen brand to a friend would all be lower among participants in the agent condition than among those in the control condition. The data supported all of these predictions.

By showing that including a product in an electronic recommendation agent can have negative consequences, our results give a word of caution to managers. In particular, our results suggest that marketers who manage relatively utilitarian brands within product categories in which both relatively hedonic and relatively utilitarian brands are established should be especially cautious. Although agents might help increase short-term sales of such products by leading consumers to overweight utilitarian product attributes and underweight hedonic product attributes, this boost may come at the cost of long-run profitability.

References