Recommendation Agents As Consumer Response Heuristic to Information Overload and the Joint Effects on Choice Quality, Choice Confidence, and Website Evaluation

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The debate on the antecedents and consequences of information overload is ongoing. Given the low online search costs, consumers are particularly exposed to elevated information amounts during product choice. This research integrates the traditional and structural methods in product information measurement to investigate (1) the relationship between information amount (bits) in a product choice set and information overload perceptions, (2) consumers’ tendency to employ information processing reduction heuristic (by consulting a recommendation agent) as information bits and overload perceptions increase, and (3) the joint effects of consulting a recommendation agent and information overload on performance (choice quality, choice confidence and difficulty, and retailer website evaluation).

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The debate on the antecedents and consequences of information overload is ongoing. Given the low online search costs, consumers are particularly exposed to elevated information amounts during product choice. This research integrates the traditional and structural methods in product information measurement to investigate (1) the relationship between information amount (bits) in a product choice set and information overload perceptions, (2) consumers’ tendency to employ information processing reduction heuristic (by consulting a recommendation agent) as information bits and overload perceptions increase, and (3) the joint effects on several performance measures.

“...In the age of the Internet, developing an understanding of how information-rich environments affect consumer decision making is of crucial importance. Given the disparate ways in which information can be presented to consumers and the high potential for information overload in online environments, it is important to use measures that capture the multiple dimensions of information.” (Lurie 2004 p. 484). The literature further indicates that consumer decision support systems (e.g., product recommendation agents) are decision heuristics that alleviate part of processing effort required by consumers while maintaining an acceptable level of choice accuracy (Häubl and Trifts 2000; Todd and Benbasat 1992). Recommendation agents have the potential to reduce consumers’ information overload and search complexity while improving decision quality (Häubl and Trifts 2000; Maes 1994).

Researchers studied the consequences of information overload on consumers’ choice and purchase of different products, such as laundry detergent (Jacoby, Speller, and Berning 1974a), rice and prepared dinner (Jacoby, Speller, and Berning 1974b), peanut butter (Scammon 1977), houses (Malhotra 1982), calculators (Lurie 2004), and CD players (Lee and Lee 2004). Theory implies that information overload is an expected event because of well-defined limits in humans to assimilate and process information within any timeframe (Jacoby 1977; Jacoby, Speller, and Berning 1974a; Malhotra 1982).

In general, researchers indicate that, faced with large product information amounts (or information bits; the term is adapted and used as in Lee and Lee 2004; Lurie 2004), consumers’ limited capacity to process information becomes overloaded, resulting in dysfunctional consequences such as cognitive fatigue and confusion (Hahn, Lawson, and Lee 1992; Keller and Staelin 1987; Malhotra 1984; Scammon 1977; Winzar and Savick 2002). Malhotra (1982 p. 419) concludes that “perhaps the most important generalization that emerges is that an individual is a limited information processing system.”

This research contributes to the literature as it (1) simultaneously assesses the traditional and structural methods (see Lee and Lee 2004; Lurie 2004) to measure the information in a product choice set, (2) integrates a perceptual self-reported measure of information overload to show its relationship with information bits as well as performance measures, (3) manipulates three levels of alternatives, three levels of attributes, and two levels of attributes’ distribution across alternatives in product choice set conditions to increase the study range and allow for curvilinearity inspection of the relation bits-overload perceptions, (4) includes a robust, observed measure (choice to consult recommendation vs. no consultation) to reflect the occurrence of information overload besides the perceptual measure, (5) inspects the effects on reactance besides the effects on choice quality and consumers’ post-choice psychological states (choice confidence and difficulty). Thus the hypotheses developed and supported are:

H1: Information overload perceptions increase as information bits increase; in addition, the relationship between information bits and overload perceptions is curvilinear.

H2a: A main effect is expected for information bits on recommendation consultation; that is, the probability of consulting a recommendation agent increases as information bits increase.

H2b: An interaction is expected so that as information bits increase, consumers low on need for cognition are more probable to consult a recommendation agent than consumers high on need for cognition.

H3a: A main effect is expected for information overload perceptions on recommendation agent consultation; that is, the probability of consulting a recommendation agent increases as overload perceptions increase.

H3b: An interaction is expected so that as overload perceptions increase, consumers low on need for cognition are more probable to consult a recommendation agent than consumers high on need for cognition.

H4: An interaction is expected between information bits and recommendation agent consultation so that as information load or bits increase, consumers who consult a recommendation agent will have higher choice quality than consumers who do not; in addition, an interaction is expected so that recommendation consultation improves choice quality particularly for product choice sets with proportional (vs. disproportional) distribution of attributes’ levels across alternatives.

H5: An interaction is expected between information overload perceptions and recommendation agent consultation so that as overload perceptions increase, consumers who consult a recommendation agent will have higher choice quality than consumers who do not.

H6: As information overload increases, reactance to recommendation decrease.

H7: Whereas choice confidence increases as information overload perceptions increase, an interaction is expected so that choice confidence is lower for consumers who consult a recommendation agent and do not choose the recommended product than consumers who consult and choose the recommended product.
A completely randomized experiment (that followed pretests to insure manipulation success and product suitability) with three levels of alternatives, three levels of attributes, and two levels of attributes’ distribution across alternatives (proportional vs. disproportional distribution, Lurie 2004) that involved 466 consumers choosing one laptop with the option to consult a recommendation agent prior to final choice was performed. ANOVA and binary logistical regression was used in data analysis (measures adapted scales from the literature).

Results support the hypotheses, show a curvilinear relation between information bits and overload perceptions, and favor the occurrence of information overload because the consumers’ tendency to employ a decision heuristic (by consulting the recommendations) increases as information bits and overload perceptions increase. In addition, while recommendation agent consultation upholds choice quality in general as information bits increase, recommendation consultation was particularly salient in enhancing choice quality when product information was less diagnostic (attributes’ levels are proportionally distributed across alternatives in the choice set). Recommendation agent consultation further interacted with information overload to improve choice quality, and choice confidence (but mainly for consumers that ended by choosing the recommended product).

References

One Without the Other: The Effects of Priming and Perceived Relationships Among Products on Consumer Choice

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Abstract
Relational priming has been shown to influence individuals in the domains of self-construal (i.e., individualism and collectivism), but, to date, the research has been limited to studying self-construal with respect to interpersonal relationships. The current paper extends the theory into the realm of inter-product/service relationships by examining the effect relational priming has on product selection given perceived relationships among products and services. A series of three studies employing priming methodology explore differences in consumption choices based on prime type, perceived product/service relationships, and implied relationships. The results suggest that priming does, in fact, influence consumer choice among related products, elicit reluctance for subjects to break apart items perceived as related, and produce said effects via realistic advertisements beyond traditional laboratory priming techniques. Limitations and future studies are discussed, as are potential managerial implications for the marketing practices of up-selling, cross-selling, and advertising/point-of-purchase displays as priming tools.

Introduction
What is peanut butter without jelly? Barbie without Ken? What is a belt without its buckle or a shirt without pants (aside from slightly risqué)? In a variety of consumption settings, products and services can exist not only as independent items but also as items sharing a