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"Effort-as-Information": The Impact of Decision-Related Effort on Subsequent Evaluation and Price Judgment

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Background

Decision-related effort is an important factor in understanding consumers' decision-making and consumption behavior. For example, it is assumed that consumers attempt to reduce decision-related effort in their decision-making (Bettman, Luce, and Payne 1998; Payne, Bettman, and Johnson 1993). In fact, several research streams suggest a direct relationship between effort and decision-making. Particularly speaking, they suggest that effort influences: (i) the selection of decision heuristics (e.g., compensatory vs. noncompensatory rules, Payne, Bettman, and Johnson 1993); (ii) the justification for choosing luxury over necessity goods or choosing a more-risky over a less-risky option (Kivetz 2003; Kivetz and Simonson 2002); and (iii) the evaluation of objects (Kruger, Wirtz, Boven, and Altermatt 2004).

Specifically, Kruger et al. (2004) introduce the concept of "effort heuristics." They propose that people have a tendency to use effort as a basis for their evaluations. They provide empirical evidence by showing that the participants in their study evaluated a poem more favorably when they thought that the poet took more time (i.e., 18 hours) to write the poem than when they thought that the poet took less time (i.e., 4 hours). In this study, the effort that the poet spent, however, is not related to the decision per se, and the decision-maker did not generate any decision-related effort. Thus, the effort investigated in Kruger et al. (2004)'s research involves other- rather than self-generated effort.

In this study, we are more interested in investigating the impact of decision-related effort on product evaluation and price judgment toward a chosen option. The purpose of this study is to examine the impact of self-generated or/and decision-related effort on the evaluation of a decision outcome (i.e., a chosen alternative).

Hypotheses development

We propose that consumers' evaluations and price judgments will be higher when making a choice with much versus less effort on the basis of several theories. The first theory concerns "escalation of commitment," which suggests that people have a motivation to preserve previous effort in a subsequent task. Specifically, studies of escalation of commitment have shown that people's previous investment affects their future decision-making (Brockner 1992; Staw 1981). For example, Arkes and Blumer (1985) asked participants to choose one trip from two trips mistakenly reserved for the same day. They found that half of the participants chose the "more expensive and less attractive trip" over the "less expensive and more attractive trip," even though the chosen option is considered to be less enjoyable. Hence, based on "escalation of commitment," we can expect that people tend to use previous effort as important information for their decision-making.

Second, "cognitive dissonance theory" suggests that people have a motivation to preserve their previous effort. According to Festinger (1957), people have a strong motivation to reduce this cognitive dissonance after making a choice, in that making a choice or selecting one option from various possibilities increases psychological discomfort, known as *dissonance* (Festinger 1957). The effort required to resolve a decision problem can generate an uncomfortable state of mind. Specifically, if people use a great deal of effort for their choice, but their evaluation toward the chosen choice is not favorable, their cognitive dissonance will be high, and they will experience discomfort. We expect that one way to reduce this cognitive dissonance is to change the evaluation of the chosen alternative requiring a great deal of effort. If the decision-maker evaluates the chosen option favorably, then he or she can easily justify his or her effort incurred in the decision process. Therefore, based on "cognitive dissonance theory," we propose that people will evaluate a chosen option favorably when making a choice with more versus less effort.

Finally, "attribution theory" suggests that people use effort as information in judging the quality of performance (Kelly 1967). For example, consumers can reward firms for high effort, such as showing a higher willingness to pay for a product conveying high effort on the part of the company (Morales 2005). This result suggests that effort as information can work as a heuristic cue for product evaluation and price judgment.

Therefore, based on “escalation of commitment,” “cognitive dissonance theory,” and “attribution theory,” we expect “effort-as-information” to be relevant, inasmuch as product evaluation and price judgment for a chosen option are more likely to be higher when individuals put much versus little effort in the decision-making process.

Hypotheses

- H1: Consumers’ evaluations will be higher for objects associated with high effort than they will for objects associated with low effort.
 H2: Consumers’ pricing judgments will be higher for objects associated with high effort than they will for objects associated with low effort.

Studies

In Study 1, we examined the relationship between self-generated effort during a decision process and an evaluation of an object. The participants in this study were asked to imagine that they were going to buy a lottery ticket. First, the participants in the high-effort condition were asked to write down numbers from 1 to 60. They were then asked to select five numbers from 1 to 60, which was written by them. On the other hand, the participants in the low-effort condition were merely asked to select five numbers from 1 to 60, which was already given to them. Next, the participants in both conditions were asked to provide their willingness to accept (WTA) selling their lottery ticket to someone else. The results supported H2. The participants in the high-effort condition (mean=\$17.64) showed a higher WTA to sell their lottery ticket than those in the low-effort condition (mean=\$10.98, $F(1, 45)=3.13$; $p=.08$).

In Study 2, we examined the relationship between decision-related effort during a decision process and an evaluation of an object; additionally, we suggest the boundary condition for the “effort-as-information” effect in decision-making. We expect that different formats of product information display (e.g., an easy vs. difficult format) will require different levels of effort. Consequently, these different levels of effort will influence evaluations of a chosen object. This manipulation (e.g., an easy vs. difficult format) is directly related to “preference fluency,” which is defined as the subjective feeling of ease or difficulty experienced while making a decision. Recently, Novemsky, Dhar, Schwarz, and Simonson (2007) have suggested the role of preference fluency in consumer choice. Empirically, they show that participants prefer high- versus low-preference fluency options, which contradicts the results of Study 1. I propose that the boundary condition between the effect of *preference fluency* and *effort-as-information* is the time interval between tasks. Preference fluency is based on “experiencing processing” (Meyers-Levy and Malaviya 1999), or is a type of feeling related to a decision. Hence, the impact of preference fluency (based on temporal fluency experience and feelings) should be reduced as time passes. We expect that the effect of *preference fluency* will be higher when there is no time interval between a choice and a subsequent judgment for a chosen option. Specifically, study participants will show higher evaluations for a chosen option from an easy-display format if we measure the subsequent evaluation immediately after the choice. On the other hand, the effect of “effort-as-information” will be higher when there is a time interval between a choice and a subsequent judgment. We expect that study participants will show higher evaluations for a chosen option with a difficult-display format if we measure the subsequent evaluation after a delay.

The participants in this study were randomly assigned to each cell of a two (level of effort: high vs. low) by two (time interval between the choice and the subsequent judgment: no-delay vs. delay) between-subjects design. They were asked to imagine that they were going to purchase one printer from four different brands of printers. The information format was manipulated in order to differentiate the effort demands of the decision. In the low-effort condition, we provided the participants with well-organized information about the four different printers. On the other hand, in the high-effort condition, we provided the participants with disorganized information, such as mixing attribute order across the brands. The product did not include any price information. The time interval was manipulated after choosing one printer. In the no-delay condition, the participants were asked to respond to subsequent dependent variables (i.e., evaluation and willingness to pay [WTP] to obtain the chosen printer) immediately after choosing one printer. In the delay condition, they were asked to do another irrelevant task (e.g., providing a summary of a story). They were then asked to respond to other dependent variables.

We found a significant interaction effect for evaluation and price judgment of the chosen option (evaluation: $F(1, 76)=5.38$, $p=.018$; WTP: $F(1, 76)=4.36$, $p<.05$). Specifically, when there was a time interval between choice and judgment, the results indicated that participants’ evaluations and price judgments were higher for the chosen option associated with high effort compared to the one associated with low effort. Therefore, the results support our “effort-as-information” prediction as described in H1 and H2. On the other hand, when there was no time interval between choice and judgment, the pattern was the opposite. Therefore, the results of this condition support Novemsky et al. (2007)’s “preference fluency” prediction.

Discussion

This study examined the impact of self-generated and decision-related effort on the evaluation and price judgment for decision outcomes. Two experiments demonstrated that consumers’ evaluations and price judgments are higher for an option associated with high versus low effort. In addition, this research shows that this result can be moderated by the time duration between choice and the subsequent judgment. In sum, this study can contribute to understanding the role of decision-related effort on consumer judgment.

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