In The Zone: The Impacts of Cognitive Resource Depletion on Wine Consumption

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Cognitive resource depletion, optimal depletion, price reliance, shopping effort, wine shopping

What are the effects of different levels of cognitive resources depletion in the wine shopping simulations?

The current research has employed between-subject experiments with a cross-sectional data collection. A post-test-only design in online shopping format with two different treatment groups is used.

Overall, the data support that there is an inverted U shape of cognitive performance that results from low, medium, and high depletion

It is traditionally believed that “smart shoppers” put more time and energy into thoroughly researching possible options before making a final decision. One assumption is that more time and effort in the search process will result in more complete information and reduced uncertainty, and thus will lead to better purchasing decisions. However, there is increasing evidence that too much effort can result in ego depletion (Baumeister et al., 1998)—the observation that willpower is a kind of limited resource that depletes as it is used, which can limit the cognitive resources available to make informed choices. Similarly, one can easily assume that not using cognitive resources at all would lead consumers to make poor decisions, because it is simply not possible to adequately evaluate available options without putting in minimal effort. In this study, we argue that there is an optimal level of cognitive resource depletion that results in making optimal consumption decisions. Thus, we
propose that not only indulgence but also self-restraint will result in suboptimal performance on a cognitive test, a higher reliance on price, and a reduced effort with cognitive tasks. To empirically test the proposed consumer behavior effectively, it is important to develop a shopping simulation that reflects the characteristics of both high-effort and low-effort consumption decisions. Wine shopping is a well-suited context because it contains both ends of the consumer effort spectrum. While there are wine drinkers who go through extensive compensatory decision-making rules to choose a bottle of wine (e.g., people who pay attention to the popular lists provided by famed wine critic Robert Parker and Wine Spectator magazine), there are novices who make their decisions based solely on price (Bell, 2014). Thus, the effect of different levels of cognitive resources can effectively be reflected in the wine shopping simulations.

Many times, consumers use price for predicting product quality. One obvious reason is that category-based knowledge infers that price is positively related to quality. Etgar and Malhotra (1981) showed, in their seminal piece on price dependency, that a uniform price-quality relationship does not exist and consumer-related factors such as usage, personality, and socioeconomic variables did not differentiate well among subjects, and did not help identifying price-conscious consumers. Although several studies found that differences in consumer characteristics influence the level of consumers’ reliance on price (Andrews & Valenzi, 1970; Gardner, 1971; Smith & Broome, 1966), the impact of availability of cognitive resource at the time of shopping has thus far been unexamined. The result of this hypothesis can contribute in the area of price reliance in that it sheds light on situational factors of the topic. We propose that people with depleted cognitive resource will be more likely to choose higher-priced wine; this is because limited resources will result in hasty decisions and the use of decision heuristics that do not require a thorough evaluation of alternatives. Thus, we expect that participants who experience high ego-depleting decision-making processes would choose the seemingly best option, but which is similar to that of the participants who are in low depletion or an indulgence condition. It is the participants in a medium depletion condition who will less likely rely on price for quality.

During the first decade after the introduction of the ego depletion theory in 1998, Baumeister and colleagues focused on the phenomenon that people who complete the first self-regulation task perform worse on the unrelated second task. For example, Vohs and Fader (2007) found that people with depleted self-regulatory resources are more likely to engage in impulse buying. Other research suggested that making deliberate decisions, such as those needed for high-risk, high-involvement purchases, can also result in ego depletion (Baumeister et al., 1998; Baumeister, 2002). A logical extension of the theory was to move from the self-regulation area to other cognitive tasks, including decision making, self-presentation, and intellectual performance. In other words, recent works suggested that the self’s limited resource is depleted not only in self-control but also in other cognitively strenuous processes (Schmeichel, 2007; Vohs et al., 2008). With sufficient literature support on ego depletion and its impact on various cognitive performances beyond self-control, one of the main concerns of the current study is to extend the strength model of self-control to general cognitive effort by establishing the existence of an optimal level of cognitive resource depletion. Shopping for a high-involvement product or service requires both willpower and determined decision making. Perry and Lee (2012) explored the relationship between the process of shopping for a house and the following mortgage choice; they argued that shopping for a home involves complex attribute tradeoffs (e.g., design features or price) and brand comparisons (e.g., particular houses or neighborhoods). Other variables include area-related factors (e.g., proximity to public transportation, school quality, crime rates), layout-related factors (e.g., neighborhood, number of bedrooms, bathrooms, walk-in-closets, fireplaces), and construction-related factors (e.g., bamboo flooring, marble bathtubs, granite countertops) (National Association of Realtors, 2008). Shopping for a bottle of wine can be an example of everyday consumption in that it can require complex attribute tradeoffs (e.g., quality or price) and appellation in brand comparisons (e.g., Napa Valley or Gulf Coast). During this shopping process, we expect that people with depleted cognitive resources will be less likely to score high on the subsequent cognitive test, and instead display scores similar to those of the participants who are in low depletion or indulgence condition, whereas scores will probably be higher for the participants in the medium depletion condition.

Although the quality of the consumption decision as influenced by cognitive resource depletion is the key concern of this study, it is also critical to investigate whether the decision-making effort is similarly influenced by this phenomenon. When decision-making effort is low, the quality of decision is very likely to be poor because the decisions heuristic consumers use are often less normatively accurate than high-effort decisions that involve
explicit tradeoffs (Frisch & Clemen, 1994). According to their seminal article (1998) on consumer choice, Bettman, Luce, and Payne pointed out that choice among options depends heavily on consumer goals, and they identified four consumer goals: minimizing the cognitive effort required in making a choice, maximizing the accuracy of the decision, minimizing the experience of negative emotion during decision making, and maximizing the ease of justifying the decision—or some combination of these goals. For consumers whose cognitive resources are low, minimizing cognitive effort becomes more important than other goals, and thus they tend to use hasty decision heuristics that do not require thorough evaluation of alternatives. In Hypothesis 3, we test whether people with depleted cognitive resources expend less effort in selecting a bottle of wine. In order to operationalize cognitive effort, we measure the amount of time each participant spends selecting a bottle. Time is often used as a measure of cognitive effort in the marketing and psychology literatures (see, e.g., Marmorstein, Grewal). Specifically, Bettman, Johnson, and Payne (1990) showed that measuring cognitive efforts by time to make a decision using specified strategy can be modeled well. If cognitive resource depletion results in a lack of effort on subsequent cognitive tasks, then participants will spend less time answering cognitive tests. Likewise, participants who are in the indulgence treatment—not using their cognitive effort—would spend less time solving the cognitive test. In other words, we hypothesize that participants who go through mentally taxing wine-shopping decisions and those who go through very low depletion will similarly spend less time on answering a basic alcohol knowledge quiz than those who go through a medium level of depletion. Overall, the data support that there is an inverted U shape of cognitive performance that results from low, medium, and high depletion. In other words, the different levels of depletion have different effects on consumers’ decision effort and quality. Both a no depletion condition and excessive depletion condition can lead to reduced effort on subsequent consumption-choices as well as less-than-optimal decision-making quality, whereas a moderate level of depletion results in increased effort and enhanced decision-making performance. More specifically, it is important to note that we empirically confirmed the impact of cognitive resource depletion on consumers’ price reliance. We saw that people with depleted cognitive resource are more likely to choose higher-priced wine; this is because limited resources results in hasty decisions and the use of decision heuristics that do not require a thorough evaluation of alternatives. Another important finding is that participants who go through mentally taxing decisions and those who go through very low depletion similarly spend less time on solving a subsequent cognitive task than those who go through a medium level of depletion. Thus, the current study confirmed that the effect of the cognitive resource depletion is on both decision quality and effort. The series of experiments suggest that the depleted consumers are less motivated to exert cognitive effort and thus tend to seek for decision heuristics. Price reliance or price-quality reference is one of the most widely used decision heuristics, which was clearly reflected on this study (Solomon, 2010). Therefore, testing the effect of cognitive resource depletion on other decision heuristics can provide insightful recommendations for consumer decision making. For example, although it is found to be ineffective compared to calorie counting, portion control is often used as decision heuristic as a food intake control method (Perry and Lee, 2007). Finding out when people switch from calorie counting to portion control based on the level of cognitive depletion would help consumers manage their food intake. Also, there are implications for decisions beyond the wine-shopping domain as well. That is, the current data could be extended via replication to other decision making scenarios which might include similarly taxing cognitive contexts, such as selecting a primary health care provider, making financial decisions, and selecting employee or a partner.