Out of Sight, Out of Mind: Usage Frequency Considerations in Purchase Decisions

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Decisions are mostly influenced by what is in sight. Because usage frequency (i.e., how frequently the consumer expects to use the product) is generally not in sight in the purchase environment—and it is unlikely to be considered spontaneously—consumers may overlook it even when contemplating purchases of a durable product (for which usage frequency is arguably an important purchase criterion). Four studies tested this hypothesis. In the first study, most customers of a women’s everyday-clothing store failed to report usage frequency considerations right after making a purchase. In the following three studies, involving hypothetical and consequential purchase decisions, manipulations that prompted the consideration of usage frequency prior to decision affected participants’ choices as well as purchase intentions and willingness to pay for a product. This suggests that, in the absence of such prompting, usage frequency was overlooked. Further, in line with our theorizing, the effect of these manipulations faded away when usage frequency cues were present in the purchase environment. Future research directions and practical implications from our findings are discussed.

Keywords Behavioral decision theory; Decision making; Economic psychology; Judgment; Preference and choice

Decisions are mostly influenced by what is in sight (Kahneman & Frederick, 2002). People perceive, are attentive to, and consider aspects of a decision that are explicit or cognitively salient to a greater extent than aspects of a decision that are implicit or not cognitively salient (Legrenzi, Girotto, & Johnson-Laird, 1993). When consumers contemplate the purchase of a durable product, usage frequency is generally not as salient as other relevant factors such as price, esthetics, or promotional tags. Thus, if consumers are to consider frequency of use, an important criterion for purchase decisions involving durable products (Hamilton, Ratner, & Thompson, 2011; Tanner & Carlson, 2009), they often must do so without much external prompting.

Consideration of usage frequency may be further hampered because consumers are cognitive misers (Fiske & Taylor, 1991). If they find a good reason to justify their purchase (Shafir, Simonson, & Tversky, 1993), they may well make up their minds without exerting the mental effort of estimating how frequently they expect to use the product they are contemplating buying. And there are plenty of good reasons that could justify the purchase of a durable product, such as a price discount (Darke & Dahl, 2003; Kivetz & Zheng, 2017), an innovative design (Page & Herr, 2002), or a brand that triggers positive attitudes (Schmitt, 2012), to name but a few.

We, therefore, suggest that consumers may overlook usage frequency when contemplating the purchase of a durable product, even though usage frequency is usually an important purchase criterion in such a context. Such overlooking would be consistent with research attesting to the importance of accessibility of an input for a decision, regardless of how relevant that input is (Feldman & Lynch, 1988; Higgins,
1996; Menon & Raghurib, 2003). Indeed, consumers researchers have identified several instances in which relevant but “out-of-sight,” and thus hardly accessible, considerations are overlooked. For example, consumers are unlikely to spontaneously anticipate hedonic adaptation, because in general, there is little in the purchase environment that prompts them to think about the enjoyment of extended product consumption (Wang, Novemsky, & Dhar, 2009). Similarly, because opportunity costs are only implicit and bringing them to bear requires cognitive effort, consumers often focus on out-of-pocket costs when making a purchase decision and neglect other ways they could use their money (Frederick, Novemsky, Wang, Dhar, & Nowlis, 2009). Closer to our research, there is also evidence that consumers prefer multifunctional products over basic ones, in part because they do not fully incorporate estimates of how much they expect to use the additional features (Goodman & Irmak, 2013).

Surely, usage frequency is not always an important criterion for purchase decisions, even those involving durable products. Consumers purchase products for various reasons, some of which are independent of whether the products will be actually used or not. Inter alia, consumers purchase products because they simply enjoy the shopping experience (Babin, Darden, & Griffin, 1994; Holbrook & Hirschman, 1982), seek to build and maintain their self-identity (Escalas & Bettman, 2005; Oyserman, 2009), or view possessions as a means to convey signals to others (Belk, 1988; Thompson & Norton, 2011) or to themselves (Dhar & Wertensbroch, 2012). But despite these or any other reasons, it is often important to consider usage frequency when contemplating a purchase of a durable product. From an objective viewpoint, it is hard to argue that usage frequency is unimportant when consumers decide, for example, whether to buy a computer monitor or how much to pay for a coffee mug. Yet, we suggest that they may nonetheless overlook usage frequency in these and, for that matter, many other purchase decisions. We report four studies that provide evidence for our hypothesis.

**Study 1**

*Method*

One hundred and twenty-seven individuals participated in this study. They were part of one of two groups: consumers and estimators.

*Consumers.* Right after making a purchase, we asked 59 female customers of a women’s everyday-clothing store in Rio de Janeiro to complete a brief questionnaire in exchange for entering a lottery to win a store voucher worth R$300 (approximately US$100). First, they indicated the item they had just paid for (or the most important if they had bought two or more items). Then, they answered the following open-ended question: “What did you consider when you decided to purchase this item?” Two research assistants, unaware of the purpose of the study, independently judged whether each answer contained “a reference to ‘usage frequency’, that is, whether the customer indicated in her answer in any way that she considered how frequently she expected or planned to use the piece of clothing she had just bought.” They agreed in 91.53% of the answers, and then met to reach a consensus on the remaining ones.

*Estimators.* To assess whether it is indeed reasonable to expect that usage frequency should be considered in this context, 68 undergraduate students (63.24% females) received a brief description of the questionnaire and were asked to estimate how many of the 59 consumers mentioned anything related to usage frequency in their answers.

**Results**

On average, the estimators indicated that 42.94% of the consumers mentioned usage frequency (no gender differences; t(66) = 0.38, p = .70). In reality, however, only 8.47% did so. z = 5.34, p < .001, d = 1.70. For example, one of the very few consumers whose answers were coded as containing a reference to usage frequency wrote “they were classic, single-colored models, so I can wear them repeatedly without feeling any embarrassment.”

**Discussion**

The results of Study 1 provided initial evidence for our hypothesis. Usage frequency does not seem to have been a top-of-mind purchase criterion for the consumers. Recall that the clothing items offered at the store were for everyday use (e.g., blouse) rather than for special occasions (e.g., wedding dress). Therefore, in this context, it would be reasonable to expect usage frequency to be one of the key purchase decision considerations. The estimators, who on average clearly overestimated the number of consumers who mentioned usage frequency, seemed to agree.

It is possible, however, that consumers did not mention usage frequency when asked what they considered when making their purchase decisions because of conversational norms (Grice, 1975) or social desirability (Nunnally, 1978; Sudman &
Bradburn, 1974). They may have thought it was unnecessary, or even silly, to mention anything related to the frequency with which they would use the piece of clothing they had just bought. We addressed this limitation in the following studies by experimentally manipulating whether participants were or were not prompted to consider usage frequency prior to their purchase decisions.

Study 2

Method

Sample, design, and procedure. Three hundred and five workers from Amazon Mechanical Turk (55.41% females; \(M_{\text{age}} = 36.27, SD_{\text{age}} = 12.15\)) were recruited to participate in a web-based experiment for a small monetary compensation. The study adopted a three-level single-factor between-subjects design. The participants were asked to imagine that they wanted to replace an old microwave and an old ice-cream maker with new ones, but given that they had a limited budget, they could buy only one of these two products. They were further told that, after some research, they had narrowed down their options to a LG microwave and a Cuisinart ice-cream maker. A table with information about the two products, including the model, warranty, price, customer ratings, and a picture, was provided (see the Appendix S1). The order in which the two products were mentioned in the purchase scenario’s text and displayed in the table was counterbalanced. After answering a few questions (see below), the participants made their choice.

Prompting manipulations. The participants were assigned at random to one of three experimental conditions. In the control condition, before making the choice, they answered questions about the microwave and ice-cream maker’s brand, quality, warranty, and design/color: “How good or bad is the [brand, quality, and warranty] of each of these products?,” and “How appealing/not appealing is the design/color of each of these products?” (8-point scale ranging from very bad/unappealing to very good/appealing, one scale for each product).

In the price-prompt condition, to the four questions of the control condition was added a price frequency question: “How often would you expect to use these products?” (8-point scale ranging from never to every day, one scale for each product). Because usage frequency was not salient in our purchase scenario (nor generally is in many purchase environments), we expected this prompt to affect participants’ choices.

For all three experimental conditions, the display order of all questions was randomized across participants. The participants concluded the study by providing basic demographic information and answering two attention check questions and one question probing whether they could guess the purpose of the study.

Before conducting the experiment, we checked whether price and usage frequency were perceived as equally important, and whether the participants’ perceptions of these two attributes differed across the two products. In a single-cell study, 51 workers from Amazon Mechanical Turk (50.98% females; \(M_{\text{age}} = 33.59, SD_{\text{age}} = 11.60\)) were presented with a purchase scenario identical to that of the main study. They then rated each product’s brand, quality, warranty, design/color, and critically price and usage frequency. They also rated the relative importance of each attribute. These ratings were given in 8-point scales, which were later coded from 0 to 7. The results showed that indeed the microwave was viewed as more expensive, \(M_{\text{microwave}} = 4.22\) versus \(M_{\text{ice-cream}} = 3.57, t(50) = 2.41, p = .02\) and was expected to be used more often, \(M_{\text{microwave}} = 6.02\) versus \(M_{\text{ice-cream}} = 2.12, t(50) = 14.35, p < .001\), than the ice-cream maker. Also, price and usage frequency did not differ in their perceived importance, \(M_{\text{price}} = 6.08\) versus \(M_{\text{usage frequency}} = 6.27, t(50) = 1.43, p = .16\).

Results

Purpose-of-the-study guessing and attention checks. Only one participant came close to guessing the purpose of the study, and only three participants failed at least one of the two attention checks. They were excluded from the data analyses (including them does not change the results).

Choices. Consistent with our hypothesis, the participants in the usage-prompt condition (71.57%) were more likely to choose the microwave rather than the ice-cream maker compared with the participants in the control condition (56%), \(\chi^2(1) = 5.30, p = .02, \phi = 0.162\), and with the participants in the price-prompt condition (56.57%), \(\chi^2(1) = 4.92, p = .02\).
\( p = .03, \omega = 0.156 \). The choice patterns of the participants in the control and price-prompt conditions did not differ from each other, \( \chi^2(1) = 0.01, p = .94, \omega = 0.006 \). See Figure 1.

**Discussion**

The results of Study 2 further supported our hypothesis (these results were replicated with a different pair of products, namely a monitor and a scanner; see the Appendix S1). Usage frequency was not in sight in the study’s purchase scenario. Therefore, prompting it prior to choice increased participants’ likelihood of considering it, which in turn affected their choices. Price, in contrast, was in sight. Therefore, prompting it prior to choice did not change participants’ likelihood of considering it and so, unsurprisingly, did not affect their choices.

**Study 3**

We argued that consumers may overlook usage frequency because it is not as salient as other factors relevant to the purchase decision (e.g., price). It follows that the effect of prompting usage frequency observed in Study 2 should decrease if usage frequency cues are present in the purchase environment. Study 3 tested this prediction. Additionally, it further assessed the robustness of the phenomenon by considering a different purchase decision, namely whether to buy a monitor. Because the prompting of price had no effect in Study 2, we did not include a price-prompt condition in Study 3.

**Method**

**Sample, design, and procedure.** Three hundred and twenty workers from Amazon Mechanical Turk (49.38% females; mean age = 35.68, SD = 11.88) were recruited to participate in a web-based experiment for a small monetary compensation. The study adopted a 2 × 2 between-subjects factorial design. The participants were asked to imagine that they wanted to replace an old monitor with a new one. They were further told that, while browsing an online store, they found an HP monitor that would fit their budget. Information about the product was provided right below the purchase scenario’s text (see the Appendix S1). After the prompting manipulation (see below), they were asked “How likely would you be to buy this monitor?” (8-point scale ranging from not at all likely to extremely likely). To conclude the study, the participants answered demographic, attention-check, and purpose-of-the-study guessing questions identical to those of Study 2.

**Prompting manipulation.** The participants were assigned at random to one of two experimental conditions identical to the control and usage-prompt conditions of Study 2.

**Usage frequency cue manipulation.** The participants were also assigned at random to one of two usage frequency cue conditions. In the cue-present condition, the description of the monitor included the model, warranty, price, and customer ratings as well as a feature called “Eye-Care,” explained as “eye comfort every day.” We expected this feature to serve as a cue to usage frequency considerations. It is worth noting that similar features can be found in monitors available in the marketplace (e.g., Samsung’s “Eye Saver Mode”). In the cue-absent condition, the description of the monitor did not include the “Eye-Care” feature, but was otherwise identical to that of the cue-present condition.

**Results**

**Purpose-of-the-study guessing and attention checks.** None of the participants wrote anything that resembled the purpose of the study. Thirteen of them failed at least one of the attention checks and were excluded from the data analyses (including them does not change the results).

**Purchase intentions.** An ANOVA showed no main effects of the prompting manipulation, \( F(1, 303) = 2.42, p = .12, \eta^2 = 0.008 \), or of the usage frequency cue manipulation, \( F(1, 303) = 0.05, p = .83, \eta^2 = 0 \). Importantly, there was a significant interaction of these two factors on purchase intention, \( F(1, 303) = 5.17, p = .02, \eta^2 = 0.017 \).
306) = 4.71, p = .03, $\eta^2 = 0.015$. Planned contrasts showed that when the usage frequency cue was absent, asking the participants how often they expected to use the monitor significantly increased purchase intention ($M_{\text{absent/usage-prompt}} = 4.06$ vs. $M_{\text{absent/control}} = 3.24$), $F(1, 306) = 6.83$, $p = .01$, $\eta^2 = 0.022$. However, when the usage frequency cue was present, the same question had no effect ($M_{\text{present/usage-prompt}} = 3.54$ vs. $M_{\text{present/control}} = 3.67$), $F(1, 306) = 0.19$, $p = .66$, $\eta^2 = 0.001$. See Figure 2.

Discussion

The results of the Study 3 offered additional evidence for our hypothesis. They also suggest a boundary condition derived from our theorizing: When the purchase environment has a salient usage frequency cue (like the “Eye-Care” feature), consumers are likely to consider how frequently they expect to use the product they are contemplating buying.

As a side note, we would like to point out that one could expect the purchase intention in the two cue-present conditions to be as high as that in the cue-absent/usage-prompt condition. It is possible, though, that some participants perceived the “Eye-Care” feature as providing little or no value, which in turn made them less intent to buy the monitor (see Simonson, Carmon, & O’Curry, 1994).

Study 4

In Study 4, we tested our hypothesis in a longitudinal consequential study. We examined the extent to which self-reported expected usage for a product predicted participants’ willingness to pay (WTP) for it 2 weeks later, and whether a usage frequency prompt prior to the WTP assessment moderated this correlation.

Method

Sample and design. We conducted a two-phase study involving a purchase of a reusable coffee cup. Two hundred and seventy-two MBA students (19.85% females; $M_{\text{age}} = 35.54$, $SD_{\text{age}} = 5.37$) from a private university in Buenos Aires, enrolled in six different sections, participated voluntarily.

Expected usage. In the first phase, we conducted an in-class survey. The participants were shown a picture of a reusable coffee cup of the brand KeepCup that was projected on the classroom screen. They were told that the product was “a reusable coffee cup that allows safe transportation of coffee and avoids waste with paper cups” (the product’s brand was not informed). The participants then answered the following question: “How many times per week would you use a cup like this?” They indicated their expected usage and informed their name, age, and gender.

Willingness to pay. In the second phase, 2 weeks later, we conducted an in-class experiment. The experimenter explained that some researchers were interested in studying “consumer behavior when an opportunity to make a purchase suddenly presents itself.” The participants were then told that they would therefore indicate the maximum they were willing to pay for a product. The terms of the transaction, designed to be incentive-compatible according to the Becker, DeGroot, & Marschak’s procedure (1964), were explained (see the Appendix S1).

Prompting manipulation. The participants were assigned to one of two experimental conditions depending on the section they were in. They all received a short questionnaire and were asked to indicate in a blank space one aspect of purchase decisions that they deemed important. In the usage-prompt condition, it was written right above the blank space, as an example, “how much one would use the product.” In the control condition, no example was given. After this task, the experimenter showed the participants the same reusable coffee cup they had seen 2 weeks earlier and asked aloud “What is the maximum value that you would pay to purchase this reusable coffee cup?” Aware that it was in their best interest to provide a truthful bid, the participants wrote down their names and
indicated their maximum WTP in the short questionnaire. Then, one participant per section was selected and a price was drawn, both at random, to effect or not the purchase transaction. The bids and prices were such that, in all six sections, the selected participants purchased the product.

In summary, the participants completed a survey in which they indicated how much they expected to use a reusable coffee cup. Two weeks later, they participated in an experiment in which they were offered the opportunity to purchase the very same product. First, they were asked to indicate one aspect of purchase decisions they deemed important. Some were provided with an example of such an aspect, which served as a usage frequency prompt, whereas others were not. Then, by means of an incentive-compatible procedure, they indicated their maximum WTP for the product. There was no significant difference in the expected usage means between participants in the usage-prompt and control conditions, $M_{usage-prompt} = 4.66$ versus $M_{control} = 4.43$, $t(270) = 0.39$, $p = .70$.

**Results**

Since the experimental design was such that participants were nested within section and section was nested within treatment, we estimated a hierarchical linear model (HLM) with maximum WTP as the dependent variable and (a) the participants’ expected usage, (b) the prompting manipulation (dummy coded), and (c) their interaction as the independent variables, with section nested within treatment. Consistent with our hypothesis, the interaction effect was statistically significant, $\beta = 2.43$, $t(266.9) = 2.11$, $p = .04$, $f = 0.129$. Tests of slopes showed that in the usage-prompt condition, participants’ expected usage was a strong and statistically significant predictor of their maximum WTP, $\beta = 3.70$, $t(267.5) = 4.34$, $p < .001$, whereas in the control condition it was not, $\beta = 1.28$, $t(266) = 1.66$, $p = .10$. See Figure 3. There was no significant difference in the maximum WTP means between participants in the usage-prompt and control conditions (see the Appendix S1).

We also performed the analyses just described excluding outliers (WTP $\geq 200$ Argentine pesos, approximately US$13; n = 12). Results were essentially the same. There was a significant participants’ expected usage $\times$ prompting manipulation interaction, $\beta = 1.99$, $t(254) = 2.21$, $p = .03$, $f = 0.139$. As before, in the usage-prompt condition, participants’ expected usage was a strong and statistically significant predictor of their maximum WTP, $\beta = 2.93$, $t(254.6) = 4.15$, $p < .001$, whereas in the control condition, it was not, $\beta = 0.93$, $t(253.2) = 1.57$, $p = .12$. Finally, we repeated all the analyses using ordinary least squares (OLS), with and without outliers, and again obtained the same pattern of results.

**Discussion**

The results of Study 4 provided further support for our hypothesis. They showed that consumers may indeed overlook how much they expect to use the product they are contemplating buying. When the participants were left to consider usage frequency on their own, the correlation between (a) the self-reported estimates of how often they expected to use the reusable coffee cup and (b) the maximum they were willing to pay for it 2 weeks later was rather weak. However, when participants were subtly prompted to consider usage frequency prior to indicating their maximum WTP, the correlation between these same two variables emerged strongly.

**General Discussion**

Purchase decisions involving durable products should at least in part be informed by the frequency with which the consumer expects to use them. In this research, we showed that, despite its objective importance, usage frequency may nonetheless be overlooked. Four studies provided evidence for our hypothesis.
Future Research Directions

We showed that consumers may overlook usage frequency when contemplating the purchase of a durable product. Yet, further research is needed to identify in which conditions such overlooking is more or less likely to occur. For example, because it is arguably easier to be cognizant of occurrences than of nonoccurrences, we expect the phenomenon to be more prevalent when the usage frequency rate is low rather than high, especially for decisions about whether or not to buy a product (vs. decisions about which product to buy, after having already committed to buy one). Moreover, the propensity to overlook usage frequency may be lower if consumers view the choice options as similarly attractive. As a result of the ensuing decision conflict, consumers may actively seek reasons to justify their preference for an option over another (Broniarczyk & Griffin, 2014). We conjecture that, in so doing, they will be more likely to consider less cognitively salient aspects of the purchase decision, including usage frequency. Consumer researchers could thus examine the effects of usage frequency rate, and of choice conflict, on consumers’ likelihood of overlooking usage frequency.

Also, worth investigating is the extent to which usage frequency considerations vary throughout the decision-making process. It is possible that usage frequency matters more at initial than at latter stages. A minimal level of “need” must exist, and so the corresponding expected product’s usage rate must also be minimally accessible, when consumers decide to include an option in a consideration set. However, as the decision-making process unfolds, usage frequency may recede to the background and more salient attributes take the stage.

Practical Implications

We would like to note that, from a practical perspective, our findings suggest that marketers must not take for granted that consumers will consider usage frequency when contemplating the purchase of a durable product. Therefore, to preclude any oversight, usage frequency must be made salient in the purchase environment, by highlighting cues serving this purpose or otherwise. Interestingly, by the same token, marketers may succeed in selling durable products even when consumers are not going to use them much often, which raises the question of whether these situations should be of concern to policy makers.

Relatedly, marketers should take note that investments in product attributes connected to usage frequency may have a lower return than expected. If consumers fail to consider usage frequency, they will not value such product attributes as one would expect. For example, heavy users may not value durability as much as they are supposed to if usage frequency is overlooked.

References


**Supporting Information**

Additional supporting information may be found in the online version of this article at the publisher’s website:

*Appendix S1. Methodological Details.*