Driving the Extra Mile: the Interplay Between Psychophysics and Loss Aversion in Determining Consumer Search Intensity

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Previously it has been demonstrated that consumers are (irrationally) influenced by relative-savings and not just absolute-savings in their decisions to extend searching for a better deal. In this paper we demonstrate that search intensity is also influenced by loss aversion. When prices are higher than the reference price (loss domain), consumers are more likely to engage in extended search, relative to when prices are lower, even when the absolute- and relative-savings remain unaltered. This effect is strongest in the vicinity of the internal reference price, and is enhanced when searching is risky. Consumers’ metacognitive understanding of this pattern is limited.

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EXTENDED ABSTRACT
This research adds to the existing literature about digressions from optimal consumer search rules. Previously it has been demonstrated that consumers are (irrationally) influenced by relative-savings and not just absolute-savings in their decisions to extend searching for a better deal (Thaler 1980, Kahneman & Tversky 1981). This relative-thinking behavior has its foundations in the Weber-Fechner law of psychophysics. But most of the studies demonstrating relative-savings behavior have focused on purchase situations devoid of historical reference prices. In real markets consumer’s price perceptions, and the consequent search intensity, is likely to be influenced not just by relative-savings but also by how these prices compare to the historically-pegged reference prices in the consumer’s mind. In this paper we demonstrate that search intensity is also influenced by whether prices are in a gain- or a loss-state relative to their internal reference prices. When prices are higher than the reference price, consumers are more likely to engage in extended search for a lower price, relative to when prices are lower, even when the absolute saving is the same. This is true for both riskless and risky search situations. This effect is strongest when prices under consideration are in the vicinity of the internal reference price. These findings are contrary to the “absolute-savings” predictions of economic theory and the “relative-savings” predictions of psychophysics. Also, while people have a good metacognitive understanding of the “absolute-savings” and “relative-savings” behavior, their understanding of the impact of loss aversion on search behavior is limited.

All the studies in this paper use a modified version of Thaler’s (1980) classic search-willingness problem in which the consumer has an option of purchasing an item at a store or making a 10 minute trip to buy it at another store for $5 less. In the current paper the purchase item is a tank-full of gasoline and the consumer can either purchase it at a default gas station on her way home, or drive an extra 10 minutes to purchase it from another station at a lower price. Being a frequently purchased item, most participants in these studies had a well defined reference price for gas (around $2.50/gallon). In Study 1, participants in one condition were told that the gas price is $1.79 (gain domain) while in the other condition, gas price was $3.29 (loss domain) at the default gas station. Participants in both conditions were asked (on a 7-point scale) about their willingness to drive to a discounted station and save 20¢/gallon. Absolute-savings theory predicts no difference in either condition. Relative-savings theory predicts greater propensity to seek a 20¢ discount when the price is lower. However loss aversion predicts greater search intensity in the loss domain when the current prices are higher than the historical reference price. Participants were found to display greater search intensity in the $3.29 condition.

In both conditions in Study 1, the prices were in relative vicinity of the reference price. Given the marginally decaying shape of money’s value function, loss aversion is likely to be strongest in this zone. At more distant points, where the value function is flatter, we hypothesize that loss aversion will have a diminished impact.

Study 2 explored price points more distant from the consumer’s historical reference price. Besides just $1.79 and $3.29 (both proximal points), participants’ propensity to seek a 20¢/gallon saving was also measured at more distant points: $0.79 and $8.29.

Similar to Study 1 results, loss aversion explained greater search propensity for $3.29 condition relative to the $1.79 condition. However, for price points more distant from the reference price, loss aversion’s influence is diminished and relative-savings behavior drives search intensity. Consequently, search propensity for a 20¢/gallon saving was found to be greater when gas price was $0.79 than when it was $8.29.

Study 3 explored the consumers’ metacognitive knowledge about this behavior. Participants were told about the setup of Study 2 and asked to predict the extent of search intensity in each of the four conditions. Most participants predicted behavior in accordance to the relative-savings theory for all four prices. Very few participants (< 5 %) predicted loss-averse behavior.

Study 4 looked at the prospect of risky search. Here extending search did not guarantee a better deal. Instead there was uncertainty associated with greater search. This meant that extending search was a risky decision. A 2X2 between-subjects design manipulated the (a) gain-loss domain and the (b) risky-riskless search context. As per the gain loss asymmetry, it was hypothesized that people will display greater risk tolerance, by extending search, in the loss domain ($3.29/gallon) than in the gain domain ($1.79/gallon), and this effect would be enhanced in the risky search condition. The results were along predicted lines.

References


