

# To Spend or Not To Spend? The Effect of Budget Constraints on Estimation Processes and Spending Behavior

Joost M.E. Pennings, University of Illinois  
Koert van Ittersum, Georgia Institute of Technology  
Brian Wansink, University of Illinois

## INTRODUCTION

Both marketing and economic budget-allocation and spending-behavior models often assume that consumers know the prices of the products they buy and hence are knowledgeable about the total value of their shopping basket as they shop (e.g., Frank et al. 1967). It is consistently shown, however, that consumers have difficulty in accurately estimating the prices of the individual items they purchased (e.g., Vanhuele and Drèze 2002). While the estimation accuracy of the total value of a shopping basket with multiple items may increase as a result of natural hedging, the increased complexity may reduce the estimation accuracy (cf., Johnson and Payne 1985).

Given this potential increased inaccuracy, the question arises as to how (budget constraint) consumers manage their spending behavior. The objective of this research is to examine the shopping-basket value estimation process of budget-constrained consumers and how these consumers control their real-life, in-store spending behavior.

Our research focuses on the value estimation of shopping baskets with multiple grocery items. Besides the fact that it is almost a 700-billion dollar industry in the USA, groceries form an important part of daily life. Furthermore, consumers generally shop for multiple grocery items on a given trip. And, for most of these items, consumers are usually unable to determine the actual prices before visiting the store. Finally, grocery shopping is repetitive (Bell and Lattin 1998).

## THEORETICAL BACKGROUND AND HYPOTHESES

Researchers in both marketing and economics assume that consumers know how much they spend (Hauser and Urban 1986; Rosen 1974). Price recall studies consistently show, however, that consumers generally do not know the exact value of the individual items in their basket as they shop (Urbany and Dickson 1991). Since estimating and recalling the aggregate value of the shopping basket is an even more complex task than recalling individual item prices, we hypothesize that consumers are unable to accurately estimate the value of their shopping basket.

Being unable to accurately estimate the value of a shopping basket while shopping makes consumers uncertain as to how much money they are spending. Knowing the value of their shopping basket is particularly important for a consumer with explicit budget constraints. Consumers with a budget constraint will probably not want to run the risk that the value of their shopping basket exceeds their budget. Consequently, compared to consumers without budget constraints, those with budget constraints should be more involved in the shopping task from a financial perspective, increasing their motivation to monitor how much they spent while shopping and to process the price information encountered (cf., Alba et al. 1991). The more involved and motivated consumers are to process price information, the more accessible that information becomes. Hence, we should find that *consumers with explicit budget constraints are better able to accurately estimate the value of their shopping basket than consumers with no immediate constraint*.

Even though consumers with budget constraints can try to be accurate in estimating the value of their shopping basket, they still run the risk of exceeding their budget. How do consumers manage not to exceed their budget during a shopping trip? Building on the risk behavior literature (e.g., Arrow 1964; Pratt 1964), we hypothesize that budget constrained shoppers build a safety margin into their shopping trip—the risk premium (cf., Thaler and Shefrin 1981). This safety margin represents the amount of money a consumer is willing to forgo to eliminate the risk of exceeding the budget. As a result of the built-in safety margin, *budget-constrained shoppers spend less than their budget*. Furthermore, we hypothesize that risk aversion positively influences the size of the safety margin budget-constrained shoppers build into their shopping trip to avoid spending too much. Hence, *the degree of under-spending by budget-constrained consumers is positively influenced by the degree of risk aversion towards exceeding their budget*.

Are budget-constrained shoppers aware of the built-in risk premium? To answer this question, it is important to realize that the risk premium represents the difference between the shopper's budget and the *actual value of the shopping basket*. The estimation bias represents the difference between the *actual* and the *estimated* value of the shopping basket. If budget-constrained shoppers are unaware of the risk premium, the estimated value of their shopping basket should equal their budget (which they do know). However, if they are aware of the built-in safety margin, they should provide a value estimate that is significantly lower than their budget. We assume consumers with budget constraints are aware of being conservative shoppers. Hence, *the estimated value of the shopping basket of budget-constrained consumers is significantly lower than their budget*.

Furthermore, we hypothesize that risk aversion towards exceeding their budget stimulates shoppers to track the value of their shopping basket and increases the amount of attention paid during the shopping process. Consequently, risk-averse shoppers are more aware of the size of their risk premium and thus better able to account for it when estimating the value of their shopping basket. Hence, *consumers' risk aversion towards exceeding their budget reduces the degree of basket estimation bias*.

## STUDIES AND RESULTS

An in-store field study, involving real shoppers, and a controlled lab experiment, show that in line with our hypotheses budget-constrained shoppers build a spending safety margin into their shopping trip to avoid exceeding their budget. The size of safety margin is positively correlated with shoppers' risk aversion towards exceeding their budget. Furthermore, we find that budget constrained shoppers seem to be aware of their built-in safety margin—they provide a value estimation of their shopping basket that is below their budget. And, shoppers' risk aversion towards exceeding their budget reduces the degree of basket estimation bias.

## CONCLUSIONS

Budget constrained consumers build a safety margin into their shopping trip to avoid exceeding their budget. Consequently, they spend significantly less than their budget. If consumers were able

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to accurately estimate the value of their shopping basket, they would have spent more, thereby increasing their utility. Furthermore, the “under-spending” (relative to what they would have otherwise spent) causes a retailer to forgo some of the consumer surplus that might subsequently be spent at a different store.

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