



# Consumer choice behavior in online and traditional supermarkets: The effects of brand name, price, and other search attributes

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## Abstract

Are brand names more valuable online or in traditional supermarkets? Does the increasing availability of comparative price information online make consumers more price-sensitive? We address these and related questions by first conceptualizing how different store environments (online and traditional stores) can differentially affect consumer choices. We use the liquid detergent, soft margarine spread, and paper towel categories to test our hypotheses. Our hypotheses and the empirical results from our choice models indicate that: (1) Brand names become more important online in some categories but not in others depending on the extent of information available to consumers — brand names are more valuable when information on fewer attributes is available online. (2) Sensory search attributes, particularly visual cues about the product (e.g., paper towel design), have lower impact on choices online, and factual information (i.e., non-sensory attributes, such as the fat content of margarine) have higher impact on choices online. (3) Price sensitivity is higher online, but this is due to online promotions being stronger signals of price discounts. The combined effect of price and promotion on choice is weaker online than offline. © 2000 Elsevier Science B.V. All rights reserved.

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## 1. Introduction

There is increasing interest in understanding the effects of computer-mediated shopping environments (Hoffman and Novak, 1996). An issue of particular interest to both practitioners and academics is in determining whether there are systematic differences in consumer choice behavior between online and regular (offline) stores, and if there are differences, in understanding the reasons for these differences. Put another way, will the same person exhibit differ-

ent choice behavior online and offline, and if so, why? Identifying and understanding these differences is important for formulating marketing strategies, especially for online marketers.

We address these questions by first proposing a general conceptual framework to articulate how various factors influence online and offline choices. Although there are many factors that affect online choice behavior, we focus specifically on assessing whether brand names have more impact on choices online or offline, and whether price and other search attributes have higher impact online or offline. We empirically evaluate the implications of our conceptual framework by analyzing consumer choices in Peapod, an online grocery subscription service, head-

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quartered in Skokie, IL,<sup>1</sup> and in traditional supermarkets belonging to the same grocery chain operating in the same geographical area.

Few papers have explored how consumer behavior online differs from consumer behavior offline. Exceptions are a conceptual paper on Interactive Home Shopping by Alba et al. (1997) and an experimental study by Burke et al. (1992). Alba et al. point out that a key difference between online and offline shopping is the ability of online consumers to obtain more information about both price and non-price attributes. More information on prices could increase consumer price sensitivity for undifferentiated products. At the same time, having more information on non-price attributes could reduce price sensitivity for differentiated products. Therefore, these authors suggest that an important research question is “What are the true dynamics of price sensitivity in this environment?” We need empirical research to understand how these implications are moderated by type of product, the power of the brand name, and the attributes for which information is available online.

Burke et al. (1992) tracked the purchases made by 18 consumers in a traditional supermarket over a 7-month period. Two months later, the same group of consumers participated in laboratory experiments wherein market conditions identical to the in-store environment were created on a computer system for several product classes of interest. Each subject made online purchases in the simulated store during the same weeks in which that subject had made in-store purchases. A comparison of online purchases vs. in-store purchases revealed systematic differences when information relevant to choice decisions was not equivalently available in both store types. Specif-

ically, product-size information is often not conveyed realistically in online stores. Consequently, there were greater discrepancies between the online and offline choice shares for the various product sizes, with larger sizes being purchased more frequently online. At the same time, there were no significant differences in the effects of promotions when the online store presented promotion information graphically in a manner that resembled promotions in the regular store. The authors report mixed results with regard to purchases of store brands. For some product categories (e.g., paper towel and tuna), the proportion of purchases of store brands was greater online than in the traditional supermarkets, whereas in other categories (toilet tissue and soft drinks), the proportion of purchases of store brands was smaller online. They attribute these results to unspecified product-class differences. While the reported results are interesting, these authors do not provide any overall conceptual framework to understand and predict differences between online and offline choice behavior.

In the next section, we propose a conceptual framework to help us assess the relative impact of brand names, prices, and other search attributes on consumer choices within a specific product category. Using this framework, we derive specific hypotheses about potential differences we might expect between online and offline choice behavior. In Section 3, we describe the characteristics of our panel data and our methodology for testing the hypotheses. In Section 4, we describe the results of our empirical analyses in three product categories: liquid detergent, soft light margarine spread, and paper towel. In Section 5, we summarize the main insights from our study and suggest further research opportunities in this area.

## 2. Conceptual framework and hypotheses

### 2.1. Information availability and search

We start with a conceptual framework to articulate how differences in *information available for decision making* online and offline influence consumer choices. When choosing among alternatives, consumers are faced with a “mixed” choice task situation (Lynch et al., 1988). Consumers make their choices using prior information already available in

<sup>1</sup> Peapod offers an online grocery subscription service in seven metropolitan areas. It was founded in 1989 and started offering its services in the Chicago area in 1990. In each of its served markets, Peapod is affiliated with a local grocery store from which the items are delivered to consumers. Peapod’s prices correspond exactly to the prices at the affiliated store. In addition, Peapod may offer some of its own promotions. Consumers shop for, and place their orders online. Peapod delivers the items to consumers within a consumer-specified half-hour time slot. There is a monthly fee to be a member of this service (currently, \$4.95) as well as delivery fees at \$4.95 per delivery and 5% of the grocery amount ordered.

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