

## The impact of brand equity and the hedonic level of products on consumer stock-out reactions

Laurens M. Sloot<sup>a,\*</sup>, Peter C. Verhoef<sup>b</sup>, Philip Hans Franses<sup>c</sup>

<sup>a</sup> *Erasmus Food Management Institute, Erasmus University, Rotterdam, P.O. Box 1738, NL-3000 DR Rotterdam, The Netherlands*

<sup>b</sup> *Erasmus University, Rotterdam, P.O. Box 1738, NL-3000 DR Rotterdam, The Netherlands*

<sup>c</sup> *Erasmus University, Rotterdam, P.O. Box 1738, NL-3000 DR Rotterdam, The Netherlands*

### Abstract

We investigate the impact of brand equity and the hedonic level of the product on consumer stock-out responses. We also examine whether the hedonic level of the product moderates the effect of brand equity. Using a sample of Dutch consumers divided over eight product groups and eight retail chains, we tested our hypotheses and found that consumers were more loyal to high-equity brands than to low-equity brands in the case of a stock-out situation. In hedonic product groups, consumers were more likely to switch to another store. Purchasers of high-equity brands in hedonic product groups were, compared to purchasers of high-equity brands in utilitarian product groups, less inclined to postpone the purchase but were more likely to switch to another item by that brand. In addition to these two main variables, we also investigate the effect of variables from prior research and some new variables, such as stockpiling and impulse buying. Finally, we discuss the theoretical and managerial implications of the findings.

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### Introduction

Out-of-stock (OOS) is a regular phenomenon for grocery shoppers. The percentages of OOS occurrences regularly vary among five percent (The Netherlands), seven percent (France), and eight percent (United States) of the total stock-keeping unit level of supermarkets (Andersen Consulting 1996; Kooistra 1999; Roland Berger Strategy Consultants 2002). This rather common temporary unavailability of items rates high on shoppers' irritation lists and causes a lower level of consumer satisfaction (CBL 2000; Fitzsimons 2000). An OOS occurrence may have a direct impact on a retailer's financial outcome, because it leads to a loss of category sales if consumers decide to switch stores or cancel their purchases completely. If consumers decide to switch stores, a loss of sales might result in a loss of sales in other categories as well. The resulting gross margin losses for retailers resulting

from OOS are estimated to lie between \$7 and \$12 billion per year in the United States (Andersen Consulting 1996).

In response, some efficient consumer response (ECR) projects have focused on developing methods to improve the supply chain. According to Vergin and Barr (1999), the application of continuous replenishment planning can decrease OOS levels by 55 percent. Although some ECR projects have showed encouraging decreases in OOS levels, a substantial decrease of OOS levels has not yet been observed in practice (EFMI 2000). Due to extensions in assortments and because shelf space is often fixed in the short and mid-terms, OOS occurrences likely will remain regular phenomena for shoppers. Therefore, retailers need additional insights into the effects of OOS on consumer behavior, particularly regarding which types of OOS situations lead to high levels of store switching, postponement or cancellation of purchases. Another important issue for retailers pertains to the product groups and brands for which OOS occurrences result in substantial sales losses.

For brand manufacturers, OOS is important as well, because high OOS levels for a specific brand may lead to losses

\* Corresponding author.

*E-mail addresses:* sloot@few.eur.nl (L.M. Sloot), verhoef@few.eur.nl (P.C. Verhoef), franses@few.eur.nl (P.H. Franses).

in brand sales and decreased brand loyalty. In addition to the important financial consequences of OOS, understanding consumers' OOS responses improves manufacturers' insight into the importance of distribution and shelf space allocation. In this respect, consumer OOS reactions may provide valuable information about the possible effects of OOS when an item or a brand is permanently delisted (Campo, Gijsbrechts, & Nisol 2002).

In marketing literature, there has been substantial interest in the topic of consumer reactions to OOS since the 1960s (Peckham 1963). The majority of early studies on OOS mainly focused on the definition and measurement of consumer OOS reactions (Emmelhainz, Stock, & Emmelhainz 1991; Gattorna 1988; Peckham 1963; Zinszer & Lesser 1981) or the financial consequences of OOS (Walter & Grabner 1975). More recently, researchers developed and tested theory-based models to explain OOS reactions (Campo, Gijsbrechts, & Nisol 2000; Verbeke, Farris, & Thurik 1998; Zinn & Liu 2001). The study of Campo et al. (2000) study is particularly noteworthy, because it provides and tests a theoretical framework to explain consumer OOS responses. In general, these studies are limited in their consideration of only a small number of product categories. They also often limit their attention to one particular supermarket or retail format. Finally, most studies have not considered whether OOS reactions vary among product categories and brands. As a result, theories that may explain observed differences in reactions between product categories and brands are not well developed.

In this study, we aim to fill these research gaps. We develop a theoretical framework in which brand equity and the hedonic level of the product are the two main antecedents of consumer OOS reactions. The inclusion of these variables is based on the notion, common in marketing literature, that both brand equity and the hedonic nature of products affect how consumers react to certain marketing stimuli (Aaker 1990; Ailawadi, Lehman, & Neslin 2002; Batra & Ahtola 1991; Chandon, Wansink, & Laurent 2000; Dhar & Wertenbroch 2000; Hirschman & Holbrook 1982; Keller 1993, 2002).

We also consider how the hedonic level of the product moderates the effect of brand equity on these reactions. In doing so, we extend the current literature about antecedents of OOS reactions in the following ways: First, no studies have considered the impact of the hedonic nature of products on OOS reactions.<sup>1</sup> Second, though some studies have included consumer-based brand loyalty indicators as antecedents, no studies explicitly have tried to explain consumer OOS reactions from a brand equity perspective. As a corollary, we

investigate whether the effect of brand equity is moderated by the hedonic nature of a product. Third, in contrast to other explanatory studies, we study OOS responses in a modest number of product groups and retail chains, which improves the generalizability and external validity of our results.

In addition to its theoretical contribution, our study also provides a clear managerial framework. Using this framework, both retailing and manufacturing managers can set priorities regarding which product groups and brands for which OOS should be minimized.

We continue this article with a review of the prior literature on OOS. Next, we discuss our conceptual model and the underlying hypotheses. We subsequently describe the research methodology and empirical results, and we end with a discussion of the managerial implications, research limitations, and directions for further research.

## Literature review

In this section, we provide a literature review of prior studies on OOS reactions and discuss the objectives, research methodology, research setting, OOS reactions considered, and antecedents of OOS reactions. In Table 1, we provide an overview of the published studies about consumer stock-out reactions in marketing and business logistics literature.

### Objectives

The objectives of early studies on OOS were mainly to define and measure OOS reactions and their financial impact. In some of these studies, OOS reactions were explained in an explorative way (e.g., Peckham 1963). Schary and Christopher's (1979) study was the first to attempt to explain OOS reactions. In the early 1990s, Emmelhainz et al. (1991) continued to focus on explaining OOS reactions. Although their study is mainly descriptive in nature, they take some interesting product and situational variables into account to explain OOS reactions. Campo et al. (2000) were the first to explicitly build a theoretically based conceptual framework to explain consumer reactions to OOS.

### Research methodology

Most studies apply either a field experiment or a survey. In field experiments, true stock-outs are studied. Researchers either remove specific items or brands in advance of the research or ask consumers if they encountered an OOS situation during their shopping trip (quasi-experiments). Studies that apply exploratory designs (e.g., surveys) consider hypothetical stock-out situations. In these cases, respondents are asked how they would react if a purchased item or brand was unavailable. We expect that these differences in research design influence the OOS reactions of consumers. For example, the "cost" of switching stores is obviously lower in surveys, because consumers do not really have to perform this time-consuming activity.

<sup>1</sup> In this study, we specifically refer to the hedonic level of a product category. In many product categories in a supermarket, this hedonic level may be considered the opposite of the utilitarian level, as is supported by our empirical measurements of the variables. In the discussion of our hypotheses, we therefore also talk about hedonic versus utilitarian products. However, some categories (e.g., shampoo) can provide both utilitarian and hedonic benefits. These categories were not included in our study, which may be considered a limitation. Further research might include such categories.

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