



Influence of thinking style and attribution on consumer response to online stockouts



Ke Ma, Tong Chen, Chundong Zheng*

Tianjin University, China

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ABSTRACT

Although consumers' responses to stockouts have been well documented, previous research findings report inconsistencies. Drawing on consumer thinking style and attribution theory, we investigate why consumers react differently toward stockouts. Through two experimental studies, we show consumer thinking style has an impact on attitude toward stockouts (involving both the product as well as the online retailer). Attribution mediates the effect of thinking style on attitude toward a stockout experience. Analytic thinkers focus on the attributes of out of stock products and evaluate out-of-stock events more negatively than holistic thinkers. Our results indicate information elaboration can improve evaluation by analytic thinkers. By raising awareness of the different effects stockouts have on consumers, online retailers can employ effective methods to minimize negative reactions.

1. Introduction

It is not uncommon for consumers to experience stockouts (hereafter referred to as OOS, i.e., out-of-stock). Surges in demand are commonly experienced by trendy goods, certain toys during Christmas shopping season (e.g., Cabbage Patch Dolls, Beanie Babies, and Tickle Me Elmo), a new iPhone, and even beauty products (Rihanna's Fenty in the UK). Normally, OOS will negatively affect both retailer and consumer. Che et al. (2012) shows that the average OOS rate in a grocery category is 7.9%. This costs retailers 4% loss in category sales—a significant amount given the industry's slim profit margins. Jing and Lewis (2011) found that eliminating all OOS would improve returns by 12.5% and increase long-term customer equity by 56.2%. When faced with OOS, consumers choose substitute items or brands, delay purchase, or exit without any purchase (Campo et al., 2000; Fitzsimons, 2000; Corsten and Gruen, 2003; Sloot et al., 2005). These reactions indicate that OOS is an inconvenience for consumers and can induce negative reactions.

Fundamentally, OOS is caused by a shortfall in supply and/or unpredictable high demand (Gierl and Huettl, 2010). Consumers tend to attribute OOS to supply failures such as inventory management or logistic failures. High demand reinforce perceptions of scarcity and enhance desirability (Lynn, 1992; Jung and Kellaris, 2004; Pettibone and Wedell, 2007; Ge et al., 2009). Griskevicius et al. (2009) show consumers can interpret OOS as a heuristic cue and draw inferences about a product's overall quality. Cialdini (1993) reports that consumers learn from their purchasing experiences that scarce products are of better

quality than non-scarce products.

Individual differences across consumers lead to a range of interpretations when an OOS event is encountered. Some consumers attribute OOS to outward factors and blame the product retailer for supply management issues (Gierl and Huettl, 2010). Some consumers attribute OOS to inner factors, such as consumer panic buying (Griskevicius et al., 2009). Of interest is what factors influence this attribution and do different attribution orientations lead to different consumer attitude outcomes?

The purpose of this research is to explore the factors that influence consumer reactions to OOS. This research explores how consumer thinking styles affect OOS attitude as a function of attribution. Extant literature on OOS mainly focuses on consumer reactions (Breugelmans et al., 2006; Dadzie and Winston, 2007), management OOS strategies (Zinn and Liu, 2001; Breugelmans et al., 2006; Dadzie and Winston, 2007), and consumer emotions (Kim and Lennon, 2011). Largely unknown is why consumers have specific reactions—factors influencing attitudes toward OOS. This research gap is important as not all consumers have the same cognitive style. The question is that: how consumers' different cognitive styles affect their reactions to OOS?

The current research posits that consumers with different thinking styles will hold distinctive attitudes toward OOS, while the original cause of OOS will mediate the role between thinking style and divergent responses to OOS. Specifically, the present research addresses three research questions that are both theoretically and practically important. The first question is: will consumers' thinking style affect their OOS attitude? This question examines consumers' OOS attitude as

* Correspondence to: College of Management and Economics, Tianjin University, NO. 92, Weijin Road, Nankai District, Tianjin, China.
E-mail addresses: make@tju.edu.cn (K. Ma), ct88@tju.edu.cn (T. Chen), zhengchundong@tju.edu.cn (C. Zheng).

a possible consequence of consumers' thinking styles. Second, is attribution a mediating function of consumers' thinking style and OOS attitude? This question reveals the possible mediating role of attribution of OOS on the relationship between consumers' thinking style and OOS attitude. We also investigate what type of information can encourage positive attitudes toward OOS events? This research thread helps to find actionable ways management can improve outcomes from OOS events.

We first present an overview of OOS, thinking style, and attribution literature, followed up with the development of research hypotheses. This is followed by outlining the research methods employed. Research findings are next presented. This article concludes with a discussion of theoretical and practical implications and suggestions for future research.

2. Conceptual development and hypotheses

2.1. Research on OOS negative effects

Studies of OOS in brick-and-mortar contexts focus on consumer reactions (such as purchasing substitutes, delaying, or canceling the purchase) and the retailers' strategies to deal with OOS (Zinn and Liu, 2001). Campo et al. (2000) present a conceptual framework that integrates the major determinants of consumer reactions to OOS. They show different consumer reactions to OOS are related to the product, the consumer, and the context, such as perceived alternative product risk, store loyalty, and need urgency.

Consumer purchasing behavior in physical retail locations can be generally categorized as hanging out with no goal or shopping with a clear goal. In the first case, consumers do not experience OOS as they are unaware of products not in stock. In the second case, consumers are frustrated when faced with a stockout the product desired. Online shopping can differ in that consumers can search for every product in the store, irrelevant of its inventory status. Therefore, when consumers browse products online, they may exhibit complex feelings about an OOS event, even though they may not be clearly upset or disappointed. Online consumers with brand or product goals have more choice as Internet shopping has low switching costs. This context means online shopping OOS events are more complex than their offline counterparts.

Bruegelmans et al. (2006) report the steps of consumer reactions to OOS, showing the policy adopted by the online retailer has a significant impact on consumers' category purchase and choice decisions. Online shoppers who find a target product only to later learn it is not stocked will be confused, leading to decreased purchase intention. In contrast, suggesting a replacement item can facilitate a substitution decision, improving the chance of a purchase while decreasing dissatisfaction. However, if higher priced products are suggested, this effect disappears.

In a similar finding, Dadzie and Winston (2007) show that OOS has a negative impact on consumers' assessment of the online transaction experience as well as repurchase intention. They identified the substitution strategy as a good choice for online retailers. However, they also point out that substitution behavior is positively related to the information content of the merchandise, the vividness of the website content, the speed of service, and some situational factors.

We can conclude that consumers will generally experience negative responses to OOS. Why OOS lead to negative responses is still an unanswered question. Kim and Lennon (2011) employee psychological factors to explain consumer negative response to OOS, demonstrating that compensation is the most effective way of mitigating the negative impact from OOS events. Consumer choice of action can be influenced by the OOS event situation, leading to a range of possible negative shopping experiences.

Not all consumers, however, will have negative emotions and evaluations in this context. Certain products can lead to more intense purchasing behaviors, such as some iPhone or Mi phone releases.

2.2. Research on OOS positive effects

Product unavailability can increase attention from consumers as they consider a shortage a signal of market supply and demand. According to signal theory, OOS indicates that supply is less than demand. Interested consumers interpret the shortage as a signal to urgently buy. Pratkanis and Farguhar (1992) propose the concept of phantom alternatives, e.g., unavailable options in consumer decision tasks. Faced with phantom alternatives, consumers may increase purchase desire due to a perception of forbidden fruit. Prior studies show the attributes of unavailable phantom alternatives will increase consumer desire to own such phantoms. For example, temporarily unavailable products will experience increased demand, which increases consumer desire for ownership (Lynn, 1992; Jung and Kellaris, 2004). According to a heuristic cue, i.e., scarce-expensive-desire, scarcity will increase consumer awareness of the product, and consumers will think that scarce goods deserve a higher price; further, they will assume that the high price represents high quality and status (Lynn, 1991).

In most of the previous studies, OOS products are the source of the unavailability of products (Fitzsimons, 2000; Sloot et al., 2005). In an online shopping context, OOS are one type of phantom alternative that will produce a phantom effect. Ge et al. (2009) suggest the presence of an OOS product in decision tasks will promote consumer choice about available items and will reduce the possibility of delaying the purchase. Products experiencing OOS can lead to urgent buying as it can increase the attractiveness of substitute products.

Extant research thus shows OOS can negatively influence consumer emotions and purchase intentions, while it can also stimulate consumer perception of scarcity and enhance product evaluation. Missing from the literature is an examination of the conditions under which consumers will react positively and how negative responses can be avoided. The current study examines this gap from a consumer attribution perspective.

2.3. Consumer attribution and thinking style

The earliest research on attribution theory is Heider (1944). Attribution theory has three foci: person-perception (Heider, 1944), self-perception (Bem, 1967), and object-perception (Kelley, 1973). Consumer attribution of the reasons for an OOS event belong to the object-perception attribution category. Kelley (1973) describes the attribution process within an analysis-of-variance framework and treats attribution as the processing of information. Kelley (1973) describes three dimensions of potential causal inference: the stimulus object (in the current research, this is represented by OOS), the observers of the effects (referred to as consumers in the current paper), and the context (in this study, online OOS) (Mizerski et al., 1979). According to Kelley (1973), consumer attribution toward an object is based on information processing. Recipients of information will judge such information on three dimensions: consistency, distinctiveness, and consensus of the information. Differences in consumer perception of these dimensions will directly influence their attribution.

Henson et al. (1999) demonstrate attribution does play a role in evaluation, while assigning causation is an important cognitive process in cases where causation will affect overall evaluation. Gao et al. (2012) use attribution theory to explain the scapegoat effect from observer and actor perspectives, showing that the observer perspective and the early information effect in causal attribution have the most significant impact on consumer scapegoating in a multi-brand crisis setting. Extending Kelley's (1973) attribution theory, Laczniak et al. (2001) examined the effect of negative WOM on consumer brand evaluation from an attribution perspective. When negative WOM is considered to have a high level of consistency, distinctiveness, and consensus, consumers tend to attribute the negative WOM to the brand itself (internal factors); otherwise, such negative WOM will be attributed to external factors such as the communicators of the message. Similarly, when OOS occurs,

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