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How brand concept affects consumer response to product recalls: A longitudinal study in the U.S. auto industry☆

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ABSTRACT

This paper investigates the effect of recall announcements on product sales and how brand concept moderates this relationship. We argue that severe recalls adversely impact product sales, and that in the event of such recalls, products with a functional brand concept are more adversely impacted than products with a luxury brand concept because functional brand-choice risk expectations are violated. Data from the United States auto industry during the period from 2003 to 2014 support our hypotheses. Our findings provide insights into the product recall literature by highlighting the effect of brand concept on consumers' behavioral outcomes following undesirable events. Furthermore, our post-hoc analysis suggests that, among the car models with a functional brand concept, those with higher reliability ratings lose more sales following severe recall announcements. We discuss the theoretical and managerial implications based on our findings.

1. Introduction

Product recalls are a major concern for firms since they affect various outcomes including customer satisfaction, reputation, and performance (Davidson & Worrell, 1992; Dawar & Lei, 2009; Kalaignanam, Kushwaha, & Eilert, 2013; Rhee & Haunschild, 2006). Rapid technological advances, competitive pressures, and tightening safety regulations (Shah, Ball, & Netessine, 2013) have created a reality where product recalls are all but inevitable. For example, the number of distinct product recall announcements within the United States automobile industry has nearly doubled over the past two decades (NADA, 2014). In recent history, Toyota recalled approximately nine million vehicles during the period from 2009 to 2010 due to out-of-control gas pedals, while nearly two dozen other automakers have had to recall a total of 30 million cars since 2014 due to faulty airbags. General Motors alone had to recall 29 million vehicles in 2014 due to a deadly ignition switch defect, spending over $2.5 billion to cover recall-related direct costs (Bennett, 2014; indirect costs to reputation and potential impact on demand not included). Similarly, recalls are seen in the pharmaceutical (e.g. the infamous 2010 Tylenol recall) and toy (the 2007 Mattel recall) industries, as well as others.

A product recall occurs when a manufacturer or regulatory agency identifies a product defect or a violation of safety standards. These failures warrant immediate corrective action by firms, such as repairing the product, replacing defective parts, or taking remedial action to compensate affected parties (Ni, Flynn, & Jacobs, 2014). Recall announcements typically cover a large volume of defective products sold contemporaneously. From the consumer's perspective, an implied or advertised product promise is violated when a product is not capable of living up to its expected quality. Breaking a product promise therefore leads to undesirable consequences for firms.

While previous research has examined the impact of product recalls on firm performance outcomes (Chen, Ganesan, & Liu, 2009; Ni et al., 2014; Thirumalai & Sinha, 2011), this relationship has not been studied at the product level from the perspective of branding strategy. Therefore, we ask the following questions: What is the impact of product recalls on subsequent sales of the affected products? Are products with different brand concepts affected differently by these recall announcements? Since a product often lies at the core of a brand concept (Hsieh, Pan, & Setiono, 2004), it is imperative to investigate the moderating effect of brand concept on the relationship between product recalls and subsequent sales performance of these products.

Firms surround products with an aura of brand concept in order to evoke desired brand associations in the minds of consumers (Overby & Lee, 2006). Defined as the firm-selected brand meaning derived from consumer needs and wants (Park, Jaworski, & MacInnis, 1986), brand concept has a significant impact on customer decision making (Jones, Reynolds, & Arnold, 2006). Although other brand concept approaches

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have been developed (John, Loken, Kim, & Monga, 2006), the functional versus luxury brand concept classification is one of the most commonly used approaches in branding research (Hagtvedt & Patrick, 2009; Monga & John, 2010). Firms design functional brand concepts to evoke functional motives such as value, durability, or safety (Park, Milberg, & Lawson, 1991); while luxury brand concepts are designed to elicit feelings related to self-enhancement, social status, or prestige (Bian & Forsythe, 2012). We expect that consumer reactions to product recalls are influenced by the established brand concept.

We use a longitudinal approach to show how recall announcements affect product sales and suggest that brand concept moderates this relationship such that sales of brands with a functional concept are more susceptible to drop when severe recalls occur. Since recalls are the result of defects that affect product functionality, they are linked to functional brand judgments (Chaudhuri, 1998). Consumers who are interested in functional brand concepts are therefore discouraged when tangible product attributes malfunction. However, the repercussions are not as bad for brands with a luxury concept because the main purchase motivation for such brands has a weaker link with objective product attributes (Homer, 2008).

This paper contributes to the existing literature in multiple ways. First, it extends the brand management literature by highlighting the interaction between product recalls and brand concepts regarding their effect on sales. Our findings suggest that the magnitude of the impact of severe recalls on product sales is affected by the firm's established brand concept (functional versus luxury). Although the extant research explores the attenuating effects of corporate governance (Kashmiri & Brower, 2016), reputation (Laufer & Coombs, 2006; Rhee & Haunschild, 2006), or corporate social responsibility (Klein & Dawar, 2004) on the undesirable recall outcomes, to our knowledge the role of brand concept in mitigating this impact has not yet been studied. Further, we validate and extend the prior literature's findings on recall outcomes by separating the effect of severe recalls from non-severe ones while carrying out this analysis at the product (car model) level. The use of a product-level and longitudinal data set also provides higher external validity for our results, unlike most prior work on brand concepts which utilize experimental methodologies (e.g. Riley, Pina, & Bravo, 2013).

The rest of the paper is organized as follows. In Section 2, we discuss the relevant literature and present our hypotheses. Section 3 explains our methodology and presents our findings. In Section 4, we discuss our contributions to the literature, implications for management, limitations, and future directions. We conclude the paper with final remarks in Section 5.

2. Conceptual development and hypotheses

2.1. Product recalls

Product recalls are important corporate announcements that not only affect customers using these products, but also bring about significant problems for manufacturers. The issues that warrant recalling products from the market are systematic defects that either violate industry safety standards or have the potential to cause significant harm to consumers (Ni et al., 2014; Wowak & Boone, 2015). They are typically remedied through processes that involve recalling the product and repairing (or replacing) the defective parts. Recall announcements are important corporate events since they generate both direct and indirect firm costs that are associated with a decline in stock value (Barber & Darrough, 1996; Chen et al., 2009; Davidson & Worrell, 1992) and consumer demand (Rhee & Haunschild, 2006). The losses in stock value and sales revenue following a recall announcement may far exceed the direct costs of the recalls (Govindaraj, Jaggi, & Lin, 2004) because the damage to brand reputation is far longer-lasting than the repairable issues at hand (Chen et al., 2009; Kalaignanam et al., 2013).

It is important to note that not all recalls are of the same nature. For instance, within the auto industry some recalls are of a trivial nature, such as a problem with the audio system or a malfunctioning seat mechanism. Others are related to the transmission or ignition, which may have far greater consequences, such as fires, accidents, or casualties. Trivial recalls have not been found to negatively influence firm performance, and sometimes have even been perceived as a demonstration of the manufacturer's diligence in attending to even minor problems with their products (Rhee & Haunschild, 2006). However, severe recalls are likely to trigger a customer outcry since these issues pose a significant personal hazard and because the products cannot be used until reparative actions are taken. These recalls tend to come as shocking news that is propagated by the media and highlighted more strongly than non-severe recall campaigns (Zavyalova, Pfarrer, Reger, & Shapiro, 2012).

The prior literature highlights the important role of product quality in successful performance outcomes (Ghosh, Mendez, & Narasimhan, 1993; Jacobson & Aaker, 1987). When customer expectations of a product are challenged by severe recalls, an “expectancy violation” occurs (Rhee & Haunschild, 2006), which results in dissatisfaction with the product, and in turn reduces product and brand sales. Moreover, customer judgments and expectations are also shaped by third party sources and word-of-mouth communications (De Maeyer & Estelami, 2011). Therefore, sales of a product that experiences severe recalls are reduced not only for existing customers (repeat purchases), but also for potential new customers. The extent of the severity of product recalls is proportional to the extent that customer expectations of that product are violated. Since severe recalls signal quality issues (as well as safety concerns), we expect that they will result in reduced sales of the affected products. Therefore:

Hypothesis 1. Severe recall announcements for a product will negatively affect its sales.

2.2. Product recalls and brand concept

We next examine whether the effect of severe recalls on product sales differs based on the brand concept of products. Brands are intangible product attributes that help customers differentiate among available product offerings (Aggarwal, 2004). A primary component of branding strategy is to develop a brand concept that will evoke certain desired associations when consumers encounter the brand. Thus, the brand concept serves as a foundation for shaping market boundaries at the broad strategic level (Hsieh et al., 2004) and provides leverage within the predetermined market segments where competition takes place (Hunt, 2010). Although branding is a strategic endeavor, it is realized in the consumer's cognition. In this respect, two of the rivaling drivers for consumer decision making are the utilitarian and hedonic motives (Batra & Ahtola, 1991). For instance, consumers may choose among various automobile alternatives based either on their functional (e.g. gas mileage, safety, or warranty) or their psychological attributes (e.g. sporty or luxurious design). This so-called reason versus emotion dichotomy leads firms to design product attributes that provide primarily functional or luxury benefits as well as brand concepts that are aligned with these benefits (Okada, 2005; Park et al., 1991). While a functional brand concept concentrates on a product's utilitarian benefits and addresses external consumption needs (Park et al., 1986), a luxury brand concept primarily delivers psychological and sensory pleasure and provides consumers with emotional and hedonic benefits (Hagtvedt & Patrick, 2009).

Interestingly, although most products carry both functional and luxury components, the advantages of luxury goods over non-luxury goods do not stem from functional product perceptions (Dubois & Duquesne, 1993). One might think that the luxury brand concept encompasses the functional brand concept. For instance, buying a *Lamborghini* would surely provide the functional transportation benefit of moving from point A to point B. However, it is primarily a luxury brand because its core brand associations are not related to its functional