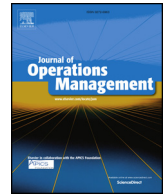




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Supplier non-retention post disruption: What role does anger play?

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ABSTRACT

We analyze the direct and indirect effects of two critical-component supply-disruption attributes (*CONTROLLABILITY* and *RESPONSIBILITY*) on supplier non-retention post disruption. Using a scenario-based role-playing experiment with 253 purchasing professionals, we find that the likelihood that a recovery lead (i.e., the individual assigned to the disruption-recovery task) recommends non-retention of an incumbent critical-component supplier post disruption is higher when the recovery lead perceives that the supplier, rather than nature, had control over the supply disruption. Moreover, this direct effect is partially explained by the amount of *ANGER* that the recovery lead feels due to the supply disruption. Neither the direct nor the indirect effect of *RESPONSIBILITY* on supplier non-retention post disruption is, however, detected. This paper is among the first to offer theoretical and empirical evidence that supplier non-retention in a supply-disruption context is a function of who had control over the supply disruption. Furthermore, this paper considers the effects of emotions and illustrates that supply-management decisions are not based solely on rational (i.e., cognitive) processes but also on emotional processes. Finally, this paper challenges conceptual arguments about the association between supplier selection and retention, at least in the supply-disruption context and with regard to the individual participating in both tasks. Our findings also have several managerial implications for supplying and buying firms.

1. Introduction

A supply disruption is an interruption in the physical flow of goods from a supplying firm (i.e., supplier) to a buying firm (i.e., buyer). It is triggered by an unexpected event (Craighead et al., 2007) that may occur at a supplier node or while goods are in transit from the supplier to the buyer (Kim et al., 2015). Firms sourcing and competing globally consider supply disruptions of critical components to be a major concern (APICS, 2016). Their concern is justified, as supply disruptions negatively affect a firm's performance (Hendricks and Singhal, 2003, 2005). Unsurprisingly, much attention has been levied on supply disruptions with reference to their economic and interfirm ramifications (Bode et al., 2011; Hendricks and Singhal, 2003, 2005; Primo et al., 2007; Wagner and Bode, 2008), the conditions that cause firms to experience more frequent and severe supply disruptions (Bode and Wagner, 2015; Craighead et al., 2007; Habermann et al., 2015), and strategies that firms can employ to prevent supply disruptions (Knemeyer et al., 2009; Tang, 2006) or to mitigate their effects and recover more quickly from them (Ambulkar et al., 2015; Craighead

et al., 2007; Tang, 2006).

When critical-component supply disruptions occur, buyers typically assign the recovery task to an individual or a team of individuals (Mitroff and Pearson, 1993; Pearson and Clair, 1998). In the latter case, a single individual (i.e., the recovery lead) often coordinates the actions of the team and the overall response of the firm to mitigate and recover from the supply disruption (Coombs, 2007; Deloitte, 2015; Dubrovski, 2004; Lerbinger, 1997; White, 2014). A key issue considered during the recovery effort is whether to retain the incumbent critical-component supplier, insource (Grover and Malhotra, 2003), or shift all or part of the sourcing volume to other suppliers (Bode et al., 2011; Wagner and Friedl, 2007). Toyota, for example, shifted part of its steel-sheets sourcing volume from Nippon Steel to other steel makers after a blast at a Nippon Steel mill interrupted the supply from that site (Automotive News, 2003). BMW, likewise, is working to develop alternative suppliers for parts sourced from Meridian after a fire at a Meridian plant caused a parts shortage and interrupted production at BMW (Automotive News, 2018).

Our paper focuses on supplier non-retention post disruption and

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provides theoretical and empirical evidence as to why critical-component suppliers are not retained after a supply disruption occurs. We posit that (a) *control over the supply disruption (CONTROLLABILITY)* and (b) *responsibility for the selection of the incumbent critical-component supplier (RESPONSIBILITY)* influence supplier non-retention post disruption. *CONTROLLABILITY* pertains to the event triggering the supply disruption and whether the triggering event is under the control of nature or the incumbent critical-component supplier. The term has been used to characterize whether sources of enterprise risk (Chapman, 2006; Kaplan and Mikes, 2012) or supply risk (Wu et al., 2006) are within a firm's sphere of influence (Chapman, 2006) and thus avoidable (Kaplan and Mikes, 2012). *RESPONSIBILITY* regards the supplier-selection task and whether the incumbent critical-component supplier had been recommended by the recovery lead or by someone else prior to the supply disruption. This is important as it may introduce biases into the recovery lead's decisions post disruption (Kaufmann et al., 2010) and thus influence the firm's recovery from the disruption.

Our paper, moreover, acknowledges insights from the crisis management literature, which has identified *ANGER* as a salient emotion during crises and crisis management (Bundy et al., 2016; Coombs and Holladay, 2005). Not only does *ANGER* endure long after it is activated (Lerner et al., 2003), but it also affects the judgments and decisions of individuals experiencing the emotion (Lerner and Keltner, 2001; Lerner et al., 2003; Tiedens and Linton, 2001). *ANGER* motivates these individuals to act to correct the violation (Carver and Harmon-Jones, 2009) and to attack the source of the *ANGER* (Berkowitz and Harmon-Jones, 2004). Supplier non-retention post disruption, as such, may reflect an emotional as well as a cognitive reaction. Specifically, beyond direct effects, we also posit that *CONTROLLABILITY* and *RESPONSIBILITY* exert indirect effects on supplier non-retention post disruption via the amount of *ANGER* experienced by the recovery lead.

We analyze the direct and indirect effects of *CONTROLLABILITY* and *RESPONSIBILITY* on supplier non-retention post disruption with data collected from 253 purchasing professionals participating in a scenario-based role-playing experiment. With respect to *CONTROLLABILITY*, when the triggering event of a supply disruption is nature-controlled, ordinal logistic regression results reveal that the experimental participants, in their role as Director of Purchasing, are less likely to recommend replacing the incumbent critical-component supplier. Conversely, when the triggering event of a supply disruption is supplier-controlled, participants are more likely to recommend not sourcing from the incumbent critical-component supplier. Moreover, a bias-corrected confidence interval for the indirect effect calculated from an empirical sampling distribution based on Monte Carlo simulation with 1000 samples shows that the *ANGER* experienced by participants due to the supply disruption mediates the effect of *CONTROLLABILITY* on supplier non-retention post disruption. Finally, analytical results provide no empirical support for direct or indirect effects of *RESPONSIBILITY* on supplier non-retention post disruption.

Theoretically, this is the first paper to demonstrate the effect of *CONTROLLABILITY* on supplier non-retention in the supply-disruption context. Moreover, our paper illustrates that this decision is partially explained by the amount of *ANGER* experienced by the recovery lead owing to the supply disruption. It thus reveals that, in this context, supplier non-retention is based not only on rational (i.e., cognitive) processes but also on emotional processes. This paper, as such, is one of the first within the supply-management literature to provide theoretical and empirical evidence that the emotions of individual decision-makers affect their decisions. Finally, this paper demonstrates that, in this context, supplier non-retention is not a function of whether the recovery lead had recommended the incumbent supplier prior to the supply disruption. Practically, our paper suggests that suppliers should avoid unforced errors, namely mistakes that are entirely due to the supplier's poor judgements and decisions, so as to retain a buyer's business. At the same time, when a disruption occurs that was truly uncontrollable, suppliers should communicate that fact to their

customers, as it may help suppliers retain their customers. Additionally, suppliers and buyers need to be cognizant that supply disruptions may make a recovery lead experience *ANGER*, which influences his or her decision to retain the incumbent supplier. Finally, our results suggest that there is no reason that buyers should consciously avoid assigning the disruption-recovery task to an individual who had recommended the selection of the incumbent supplier prior to the supply disruption.

2. Literature review

Two literature streams are relevant to our research questions. The first regards supply disruptions. We present research that describes supply disruptions and explores the effects of various factors (e.g., individual, firm, interfirm relationship, product, and supply market) on buying decisions after actual or impending supply disruptions. We show that there is a dearth of research exploring the effects of supply-disruption attributes, specifically of *CONTROLLABILITY*, on decisions post disruption. The second literature stream regards the association between supplier selection and retention and the role of individual managers in these processes. Within this stream, we show that prior work considers the role of individual managers in supplier selection but misses a potential link between supplier selection and retention: i.e., the individual manager who participates in both tasks.

2.1. Supply disruptions

The literature identifies multiple sources that may trigger supply disruptions, including natural disasters, terrorist attacks, supplier bankruptcies, labor strikes, and transportation accidents (Chopra and Sodhi, 2004; Kleindorfer and Saad, 2005; Tang, 2006; Wagner and Bode, 2008). Some studies distinguish between these varying sources based on whether they are nature- or man-made (Ho et al., 2015; Macdonald and Corsi, 2013; Stecke and Kumar, 2009). A different set of studies characterizes sources of enterprise risk (Chapman, 2006; Kaplan and Mikes, 2012) and supply risk (Wu et al., 2006) based on the extent to which the risk source is within the firm's sphere of influence (Chapman, 2006) and thus avoidable by the firm (Kaplan and Mikes, 2012). Typically, nature-made sources are considered to be beyond a firm's control (Wu et al., 2006). *CONTROLLABILITY* is an important attribute of supply disruptions as it determines the stakeholders (Chapman, 2006) and the firm's repertoire of possible actions to avoid or respond to the disruption (Kaplan and Mikes, 2012; Wu et al., 2006). Despite the importance of *CONTROLLABILITY*, it has received limited attention in the supply-risk literature, especially regarding its effects on responses following supply disruptions.

Some studies have offered insights into the effects of other disruption attributes, as well as factors relating to the supply market, the product whose flow is (potentially) interrupted, the interfirm relationship, and the firm. A prevalent outcome examined is whether the buyer engages with or disengages from its supplier following an impending or actual supply disruption. For example, Primo et al. (2007) explore a buyer's dissatisfaction with a critical-component supplier following a supply failure. The authors focus on three attributes of the supply failure – locus of blame, severity, and frequency – relating to buyer dissatisfaction. Their findings suggest that a buyer is more dissatisfied when the failure is due to the supplier rather than the buyer's internal processes, affects the buyer's customers, and is recurrent or likely to persist in the future. Ellis et al. (2010) show that supply-market factors (such as major and frequent technological changes and low availability of alternative supply sources) and product-related factors (such as the product's importance and degree of customization) increase a firm's perceptions of disruption risk and, in turn, the likelihood that the firm will search for alternative suppliers. In another study, Bode et al. (2011) show that intrafirm factors (such as a firm's disruption orientation and prior experience with disruptions), interfirm factors (such as trust and dependence on a supplier), and the disruption's impact motivate the

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