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Performance implications of the fit between suppliers' flexibility and their customers' expected flexibility: A dyadic examination $\stackrel{\star}{\sim}$

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| ARTICLE INFO | A B S T R A C T |
|--------------------------------|---|
| Accepted by: T Browning | Although an increase in flexibility for firms usually entails further investments and higher operating overhead |
| Keywords: | for their suppliers (Sheikhzadeh et al., 1998Koste and Malhotra, 1999), most studies have focused exclusively on |
| Buyer-supplier flexibility fit | the benefits derived from additional flexibility enjoyed by the buyer firms neglecting the impact on the financial |
| Firm performance | performance of their suppliers (e.g., Malhotra and Mackelprang, 2012; Gligor, 2014; Mandal, 2015). To explore |
| Munificence | the complex supplier-customer interplay, we introduce the concept of buyer-supplier flexibility fit (i.e., the match |
| Dynamism | between the level of flexibility the customer expects from its supplier and the supplier's level of flexibility) and |
| Complexity | explore its impact on the supplier's financial performance (i.e., ROA). We collected dyadic archival and survey |
| | data from 638 firms (319 supplier-customer dyads) to test these relationships. Our results indicate that buyer- |
| | supplier flexibility fit has a direct and positive impact on the supplier's ROA. Further, the strength of the re- |
| | lationship increases when firms operate in munificent and/or dynamic environments but does not change sig- |
| | nificantly in complex environments. The relationship also becomes stronger as the exchanged business volume |
| | increases between the customer and its supplier, and as the relationship progresses in age. In addition, our |
| | findings indicate that firms with perfect buyer-supplier flexibility fit perform best, followed by firms with ne- |
| | gative misfit (i.e., the supplier's level of flexibility is lower than its customer's expected level of flexibility), while |
| | firms with positive misfit (i.e., the supplier's level of flexibility is higher than its customer's expected level of |
| | flexibility) are the laggards. Interestingly, positive misfit has a stronger negative impact on suppliers' ROA |
| | compared to misfit in general and negative misfit. Key corresponding managerial implications are derived. |

1. Introduction

The trend of product proliferation has been fueled by customers' increasing expectations for customized products (Malhotra and Mackelprang, 2012). For example, in the auto industry, Ford offered the F-150 XL in over four billion different configurations (Appel, 2016) while Volkswagen offered its Polo brand to U.K. consumers in up to 52.6 billion different configurations (Felipe Scavarda et al., 2010). Firms, such as Ford and Volkswagen, rely on their suppliers to provide the level of flexibility required to meet such diverse customer demands. To further illustrate firms' increasing reliance on their suppliers' flexibility, it has recently been reported that Apple acquired tens of millions of dollars' worth of production equipment for the iPhone 8 to lease it to its suppliers. The suppliers' limited flexibility prompted Apple to invest directly in increasing its suppliers' capacity to ensure the demand for the iPhone 8 would be met (Roston, 2017).

Within the supply chain context, several studies have explored the relationship between various aspects of flexibility and firm performance

(e.g., Malhotra and Mackelprang, 2012; Gligor, 2014; Mandal, 2015). These studies provide valuable insights on the benefits of flexibility. However, they do share some significant limitations. Although an increase in flexibility for focal firms usually entails further investments and higher operating overhead for their suppliers (Sheikhzadeh et al., 1998; Koste and Malhotra, 1999), most studies have focused exclusively on the benefits derived from additional flexibility enjoyed by the buyer firms neglecting the impact on the financial performance of their suppliers (e.g., Malhotra and Mackelprang, 2012; Mandal, 2015). This is a noteworthy gap considering that the long-term performance of focal firms is contingent upon the sustainability of their supply chains and, implicitly, the financial performance of their suppliers (Christopher, 2000; Gligor, 2015). To our knowledge, this is the first study to address the impact of flexibility from the suppliers' perspective. Further, most studies exploring the topic of flexibility in a supply chain context have focused on a single focal firm, in isolation from other members of the supply chain. As such, research has yet to address the interplay between the suppliers' levels of flexibility and their respective customers'

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expected levels of flexibility, along with the implications for the suppliers' performance.

To address these limitations, we introduce the concept of *buyer-supplier flexibility fit* (i.e., the match between the level of flexibility the customer *expects* from its supplier and the supplier's level of flexibility). We then explore the impact of this fit on the supplier's financial performance (i.e., ROA). To execute this research, we collected dyadic archival and survey data from 638 firms (319 supplier-customer dyads). We also examine whether suppliers perform better when their level of flexibility is lower than their customers' expected level of flexibility (negative misfit), matches it (fit), or exceeds it (positive misfit). Considering that extra flexibility/capacity comes at a cost for suppliers, this study can help answer the following question of managerial relevance: Should suppliers be as flexible as their customers expect them to be, more flexible, or less flexible? Our results reveal the importance of understanding customers' desired level of flexibility and developing a customer-driven level of flexibility.

To gain a better understanding of the buyer-supplier flexibility fitsupplier performance relationship we also consider relationship-specific (i.e., relationship age and shared business volume) and industry-specific moderators (i.e., environmental munificence, dynamism, and complexity). We utilize archival data to develop objectives measures for environmental munificence, dynamism, and complexity (Dess and Beard, 1984). Similarly, we collect objective data to measure relationship age and proportion of shared business.

We make some noteworthy contributions with this study. First, we shed additional light on how supplier firms can determine their appropriate levels of flexibility. Our results indicate that the fit between a supplier's level of flexibility and its customer's expected level of flexibility (i.e., buyer-supplier flexibility fit) has a direct and positive impact on the supplier's ROA. Further, the strength of the relationship increases when firms operate in munificent and/or dynamic environments but does not change significantly in complex environments. The relationship also becomes stronger as the exchanged business volume increases between the customer and its supplier, and as the relationship progresses in age.

Further, by conceptualizing fit as 'matching' (Venkatraman, 1989), we go beyond a 1:1 (all or nothing) association between the supplier's level of flexibility and its customer's expected level of flexibility. Thus, we distinguish between *positive* (i.e., the supplier's level of flexibility is higher than its customer's expected level of flexibility) and *negative* (i.e., the supplier's level of flexibility is lower than its customer's expected level of flexibility) *misfit*. Our results indicate that suppliers with perfect buyer-supplier flexibility fit with their customers perform best, followed by suppliers with negative misfit, while suppliers with positive misfit are the laggards. Interestingly, positive misfit has a stronger negative impact on suppliers' ROA compared to misfit in general and negative misfit. Key corresponding managerial implications are derived.

The rest of the paper is organized as follows. First, we introduce the theoretical background and develop the hypotheses. Next, we present the methodological approach. This is followed by the study's results and theoretical and managerial implications. We conclude by presenting the study's limitations and future research opportunities.

2. Theoretical development

2.1. Resource orchestration theory

According to resource orchestration theory, "it is the combination of resources, capabilities, and managerial acumen that ultimately results in superior firm performance" (Chadwick et al., 2015, p. 360). That is, the source of competitive advantage is not the individual resources alone, but the combination of other resources that are interconnected with the focal resources (Kor et al., 2016; Penrose, 2009; Zaefarian et al., 2013). Resource orchestration theory can help explain the

importance of buyer-supplier flexibility fit. While the resource-based view recognizes the importance of flexibility as a source of competitive advantage, the resource orchestration theory supports the argument that the fit between the supplier's flexibility and its customer's expected flexibility can result in increased performance for the supplier.

2.2. Flexibility within the supply chain context

The concept of flexibility has long been of interest to operations management researchers and has largely been explored within the manufacturing systems context (Zhang et al., 2003; Patel et al., 2013). Vickery et al. (1999, p. 16) were the first to extend the concept of total system flexibility to the supply chain and defined supply chain flexibility as "those flexibilities that directly impact a firm's customers (i.e., flexibilities that add value in the customer's eyes)". Moon et al. (2012) define supply chain flexibility as the firm's capability to respond to changes in customer needs. This definition is consistent with the conceptualization offered by Gunasekaran et al. (2002) who refer to supply chain flexibility as the flexibility to meet particular customer needs in the chain. To capture the full dimensionality of flexibility, we adopt the total system flexibility perspective and explore the concept of buyer-supplier flexibility fit from the supply chain perspective.

2.3. Linking buyer-supplier flexibility fit to firm performance

Flexibility helps firms meet their customers' diverse requirements and several studies within the supply chain context have suggested a positive link between flexibility and various aspects of firm performance (Vickery et al., 1999; Zhang et al., 2005; Gligor, 2014). However, manufacturing and supply chain management literature also suggest that more flexibility is not always better. Several studies found evidence of diminishing returns when exploring various aspects of flexibility (McCreery et al., 2004; Aksin and Karaesmen, 2007; Yi et al., 2011; Malhotra and Mackelprang, 2012). Considering the significant resources required to increase overall flexibility (Yi et al., 2011; Malhotra and Mackelprang, 2012), it is plausible that suppliers could experience diminishing returns when increasing their flexibility levels beyond those expected by their customers.

Interestingly, although articles exploring flexibility within a supply chain context address a supply chain phenomenon, most focus on a firm's flexibility resources as a source of competitive advantage. The resource orchestration perspective is helpful for examining supply chain phenomena, such as buyer-supplier flexibility fit. This theory suggests that competitive advantage is not exclusively derived from the firm's flexibility, but also from combination or fit of resources with those of other members of the supply chain (Zaefarian et al., 2013). According to resource orchestration theory, the fit between the supplier's flexibility and its customer's expected flexibility should result in increased performance for the supplier.

In addition, most supply chain flexibility conceptualizations emphasize the centrality of customers (Malhotra and Mackelprang, 2012; Moon et al., 2012), suggesting that flexibility should be developed in consideration of the customer's needs. For example, Yi et al. (2011) emphasize that a complete definition of supply chain flexibility recognizes the ultimate goal of successfully meeting customer demand. Similarly, Duclos et al. (2003) define the concept by focusing on customers' needs and describe supply chain flexibility as the promptness and degree to which the firm can adjust its supply chain speed, destinations, and volumes to respond to changes in customer demand. In essence, suppliers seek to develop flexibility to meet various customer specifications (e.g., features, mixes, and volumes) (Swafford et al., 2008; Jin et al., 2014). Research also recognizes that the actual performance of the firm is determined by how its level of flexibility is perceived by external customers (Oke, 2005; Gosling et al., 2010).

Considering the above arguments, it is plausible that suppliers whose levels of flexibility match the levels of flexibility expected by Download English Version:

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