



## Interorganizational teams in low-versus high-dependence contexts



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### ARTICLE INFO

#### Keywords:

Buyer-supplier relationship  
Interorganizational team  
Dependence  
Psychological safety  
Relationalism

### ABSTRACT

Buyer-supplier teams constitute a vital vehicle to shape and implement the corporate supply chain agenda. However, extant research on interorganizational teams is limited and more focused on new product development teams. Consequently, this paper aims to assess the impact of key interorganizational team characteristics (psychological safety and relationalism) on various facets of supplier-relationship outcomes (innovation, efficiency, and agility) as well as the moderating role of supplier dependence. Based on a sample of 413 suppliers of a focal North-American buyer of heavy machinery parts, we analyze the projected relationships through structural equation modeling and multi-group confirmatory factor analysis. We establish measurement equivalence before performing multigroup comparisons. Our results highlight the importance of both psychological safety and relationalism for improving all facets of supplier-relationship outcomes, with the exception of the impact of psychological safety on efficiency, which is not significant. Our results also confirm the moderating role of dependence; that is, the positive impact of relationalism on innovation is weakened in high-dependence relationships. The focus on suppliers to a single buyer rules out various buyer-related differences as alternative explanations. The paper provides avenues for further research and guidelines for practitioners on how to shape interorganizational teams in relation to dependence and strategic priorities.

### 1. Introduction

With firms purchasing up to 50%–70% of their product value from others, awareness of the importance of close relationships with selected suppliers has increased in the last decades. Close buyer-supplier relationships (BSRs) enable firms to improve performance across a broad range of dimensions (Yang et al., 2016). The absence of such relationships, however, is behind the most common failures in supply chains such as out-of-stocks, excess inventories, new product failure rates, increased product markdowns, and wasted time in engineering and R&D (Myers and Cheung, 2008). Today, in the era of dynamism, collaborative relationships have become the key differentiator in the competitive arena. A recent example is relationship between Walmart, Uber, Lyft and Deliv, who teamed up to compete with similar grocery delivery services from Amazon. These companies jointly implemented a pilot for last-mile delivery that integrates the strengths and resources of each partner—online orders, flexible delivery drivers, and itinerary synchronization (Sáenz et al., 2017; SupplyChain247, 2016).

However, some factors exist that reduce the enthusiasm for boosting

collaborative initiatives, such as a lack of resources or opportunistic behaviors. Some redundancy of resources is required to drive change beyond the predominant efficiency focus in supply chains (Sivakumar and Roy, 2004). Not only can exogenous factors, such as the economic downturn, account for the decreased enthusiasm, but also a lack of understanding and, consequently, the nurturing of internal (to the dyad) dynamics related to collaboration initiatives (Huo et al., 2016).

There is a rich literature on behavioral dynamics within BSRs, for instance, related to the role of trust (e.g., Handfield and Bechtel, 2002), dependency (e.g., Gulati and Sych, 2007) and interfirm adaptation (e.g., Hallén et al., 1991) in improving relationship outcomes. Cousins et al. (2006) highlighted the process of interaction and communication between individuals of the buying and supplying organizations, which leads to increased relational capital—a distinguishing factor between high- and low-performance supply chains (Villena et al., 2010). More precisely, interaction processes support knowledge creation and integration and, as a result, continuous improvement and innovation within the BSR (Revilla and Knoppen, 2015).

Buyer-supplier teams are a key vehicle for integration and

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socialization, hosting the interaction processes (Cousins and Menguc, 2006). Such teams have proven to be an effective structure to translate a firm's supply chain strategy into performance (Nakano and Aikawa, 2014) by allowing the integration of diverse and complementary perspectives. Nonetheless, interaction processes in such teams do not always lead to better supply chain performance (Van de Vijver et al., 2011) and more insight is required into a team's behavioral traits (Bendoly et al., 2010). Extant research is overly focused on new product development teams (e.g., Edmondson and Nembhard, 2009; Lawson et al., 2009) and application to the supply chain context is necessary but scarce (Stock, 2006).

Teams have the potential to offer greater adaptability, productivity, and creativity than any individual can offer (Salas et al., 2005). When moving from an organizational to an interorganizational buyer-supplier context, challenges increase. For example, members have to be loyal and committed to the own organization *and* to the relationship (i.e., “dual allegiance”; Husted and Michaelova, 2010). Moreover, managers must devote more time integrating different “thought worlds” that arise through non-routine efforts with members from partner organizations, as well as from such efforts within their own organizations (Adler et al., 1999). Team tasks imply that traditional customer-supplier roles must be inverted when the customer helps to solve a supplier's problem or improve a supplier's processes (Knoppen et al., 2011). Consequently, it becomes even more important to open the black box of teamwork and identify the key variables of behavioral dynamics (Salas et al., 2005). Literature on work teams has reported that team psychological safety (i.e., “a shared belief held by members of a team that the team is safe for interpersonal risk taking”; Edmondson, 1999: p. 350) must be nurtured in order for the team to function effectively and move towards established goals. Currently, key players that exist in the supply chain domain, such as Amazon, have developed a team culture of interpersonal risk-taking as a major component of their successful business model. Quoting Amazon's CEO, Jeff Bezos, on empowering a team: “I would never say no to something the team wanted to do, but I might say yes to something the team didn't want to do. You want there to be multiple ways to get to 'yes' because you want to encourage risk-taking” (D'Onfro, 2015). Nonetheless, literature on deep BSRs emphasizes that relationalism (i.e., “the set of relational norms that support relational contracting”; Lado et al., 2008: p. 402) is key in triggering effective interaction processes. Psychological safety and relationalism are complementary when the aim of team tasks is to continuously improve or innovate at a buyer-supplier level (Knoppen et al., 2011).

Behavioral dynamics in BSR highly rely on power and dependence relationships. Consequently, a persistent thread in the literature has emphasized power and dependence as a basis for structuring and differentiating BSR management (Cox, 2004; Gulati and Sytch, 2007; Handley and Benton, 2012; He et al., 2013; Tangpong et al., 2008). For example, Rossetti and Choi (2005) describe how dominant aircraft manufacturers transformed their suppliers from partners into competitors as they responded to mandated annual cost reductions. As a result, aircraft manufacturers currently face suppliers who sell directly to airlines, thus reducing manufacturer profits by as much as 50%. Because suppliers changed the power dynamic by decreasing their dependence on aircraft manufacturers, they no longer needed to change their behavior in response to manufacturer demands. Rossetti and Choi (2005) argue that, with these actions, aircraft manufacturers have reduced their ability to increase efficiency because suppliers will not support new initiatives that do not immediately benefit them. Therefore, it is reasonable to assume that power and dependence will also be fundamental to the way in which interorganizational buyer-supplier teams interact. However, literature on this issue is scarce.

Based on the foregoing, we believe that timely evidence on the functioning of buyer-supplier teams is vital in increasing the effectiveness of such efforts and avoiding costly failures. The purpose of this paper is twofold. First, based on a relational view of the firm and research on work teams, we want to empirically demonstrate that the

interorganizational team is a vital level of organization in a BSR context. More precisely, we want to demonstrate the positive impact of key characteristics of such teams (relationalism and psychological safety) on a broad range of performance outcomes (innovation, efficiency, and agility). Following the theory on work teams, our outcomes fine-tune the idea of Edmondson (1999) who claimed that team psychological safety is important for team performance in general. In other words, we demonstrate that work teams are also important in a particular BSR context. Second, based on a contingency view, we aim to test the impact of supplier dependence on the proposed positive impact from interorganizational team characteristics on performance. The outcomes provide evidence for the related propositions of Tangpong et al. (2008). Consequently, our outcomes enable us to fine-tune practical recommendations on shaping interorganizational teams in relationship to dependence and strategic priorities.

In order to provide empirical evidence, we develop our study in the heavy machinery industry, which, from the 1980s to the 2000s, experienced an important outsourcing tendency, and, consequently, effective management of BSRs increased in importance. According to Zhao and Calantone (2003), “one manager in heavy machinery industry said that the design of a press machine requires the knowledge of electronic control, pump, computer software, mould, temperature control, feeding speed control, and Hydraulic. Much of the knowledge needed resides outside the firm” (Zhao and Calantone, 2003: p. 62). In other words, firms have to nurture selected BSRs to gain the knowledge they need. Moreover, the heavy machinery industry is not a thin-margin industry in which buyers and suppliers compete for margin and adversarial relationships are more likely to occur (Myers and Cheung, 2008). Thus, in this setting, buyer-supplier teams are appropriate vehicles for hosting relational interactions. Our empirical study is survey-based, and we assess a sample of 413 suppliers of a focal North-American buyer of heavy machinery parts. We use structural equation modeling and multi-group-confirmatory factor analysis to answer our hypotheses. Measurement equivalence is tested and confirmed before proceeding to a comparison of sub-groups defined by degrees of supplier dependence.

In the following, we develop the theoretical framework of the study. We do so by highlighting the three key theoretical lenses behind our research followed by development of the hypotheses. The methodological section presents the sample characteristics and survey-based data collection method, measures, and structural equations approach of the data analysis. We then present the results followed by discussion in theoretical and practical terms. We finalize with conclusions and avenues for future research.

## 2. Theoretical framework

Below, we first highlight the theoretical perspectives behind our study and address our view on supplier-relationship outcomes, which is the performance variable. We introduce the interorganizational team as level of analysis, together with its two key characteristics—relationalism and psychological safety. We hypothesize that these team characteristics impact performance. Finally, we introduce the concept of dependency and its moderating role on the prior proposed hypotheses. Fig. 1 shows the constructs of our study and their interrelationships.

### 2.1. Theoretical perspectives behind the study

Our study is grounded upon three complementary perspectives: the relational view of the firm, the work team theory, and the contingency theory. The relational view builds upon and extends the resource-based view of the firm, which posits that firms with valuable, rare, non-substitutable and difficult-to-imitate resources have a competitive advantage over competitors (Barney, 2001). The central tenet of the relational view of the firm, on the other hand, is that a firm's critical resources span firm boundaries and may be embedded in interfirm resources and routines. In other words, when firms invest in relationship-

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